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## Analysis of the Employed Program of the Philippine Health Insurance Corporation

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## Analysis of the Employed Program of the Philippine Health Insurance Corporation

*Denise Valerie Silfverberg*

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**Health System Research Management Project**

**Analysis of the Employed Program of the Philippine Health Insurance Corporation**

**FINAL REPORT**

By  
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For  
Philippine Institute for Development Studies  
Makati, Philippines

## Abstract

The Employed Program of the Philippine Health Insurance (PhilHealth) caters to those in the formal sector. Included are those in the government and private sectors with a formal employer-employee relationship. Coverage levels for both the government and private sectors are promising with regional averages of 74% and 71%, respectively; and provincial averages of 80% and 75%, respectively. For the private sector, certain sectors were found to be more prone to undercoverage. For the government sector, no clear pattern was found to explain the causes of variation between provinces. This is likely due to the absence of casual and contractual employees in the model. The findings for both sectors are possible propositions on how targeting should be implemented to address the gaps that exist in what is supposed to be a mandatory scheme.

**Keywords:** Health care financing, universal coverage, formal sector, employed program, social health insurance

## CONTENTS

|  |    |
|--|----|
| List of Tables   | 3  |
| Acronyms   | 3  |
| Summary  | 4  |
| <b>Part I: Introduction</b>                                    |    |
| Background on the National Health Insurance Program            | 6  |
| Mandatory Health Insurance                                     | 7  |
| <b>Part II: Review of Literature</b>                           |    |
| Mandatory Health Insurance: Experiences from other Countries   | 7  |
| Some Issues with Employer-Sponsored Insurance                  | 8  |
| <b>Part III: Methodology</b>                                   | 9  |
| Estimation of the Formal Sector                                | 9  |
| Determination of Factors Leading to Under-coverage and Leakage | 11 |
| Description of Variables                                       | 12 |
| <b>Part IV: Results and Discussion</b>                         |    |
| Coverage Rates for Employed Program                            | 13 |
| Regression Results   | 23 |
| <b>Part V: Limitations</b>                                     | 26 |
| <b>Part VI: Recommendations</b>                                |    |
| Private Employed Program                                       | 27 |
| Government Employed Program                                    | 28 |
| <b>References</b>  | 29 |
| <b>Appendix A:</b> Premium Contribution Table                  | 30 |
| <b>Appendix B:</b> Formal Sector Population Estimates          | 31 |

## List of Tables

|           |   |
|-----------|---|
| Table 1.  | National Coverage Rate for Private Employed Program               |
| Table 2.  | Regional Coverage Rates for Private Employed Program              |
| Table 3.  | Provincial Coverage Rates for Private Employed Program            |
| Table 4.  | National Coverage Rate for Government Employed Program            |
| Table 5.  | Regional Coverage Rates for Government Employed Program           |
| Table 6.  | Provincial Coverage Rates for Government Employed Program         |
| Table 7.  | Ordered Logit Regression for Private Employed Program             |
| Table 8.  | Ordinary Least Squares Regression for Private Employed Program    |
| Table 9.  | Ordered Logit Regression for Government Employed Program          |
| Table 10. | Ordinary Least Squares Regression for Government Employed Program |

## Acronyms

|            |   |
|------------|---|
| ARMM       | Autonomous Region of Muslim Mindanao    |
| CAR        | Cordillera Administrative Region        |
| DOLE       | Department of Labor and Employment      |
| EP         | Employed Program                        |
| FIES       | Family Income and Expenditure Survey    |
| GDP        | Gross Domestic Product                  |
| GGI        | Good Governance Index                   |
| IPP        | Individually Paying Program             |
| LFS        | Labor Force Survey                      |
| NCR        | National Capital Region                 |
| NSO        | National Statistics Office              |
| OLR        | Ordered Logit Regression                |
| OLS        | Ordinary Least Squares                  |
| PhilHealth | Philippine Health Insurance             |
| PHIC       | Philippine Health Insurance Corporation |

## SUMMARY

The social health insurance scheme of the Philippines, known as the Philippine Health Insurance (PhilHealth), was enacted in 1995. PhilHealth has five schemes, one of which is the Employed Program (EP), which is the focus of this study. This study was conducted prior to the National Health Insurance Act of 2013 (RA 10606). Under the new act, the Employed Program has been renamed as “Members in the Formal Economy”.

The Employed Program covers people in the government and private sectors with a formal employer-employee relationship. The Employed Program is a mandatory scheme. This should then ensure, theoretically speaking, full coverage of the formal sector.

For a mandatory program such as the EP, the decision to enroll usually rests on the employer. The EP has been further classified into two categories – those in the government sector and those in the private sector. The analysis of this program has thus been divided accordingly. Coverage rates were determined by province and certain provincial characteristics for both the private sector and the government sector were used to analyze the variation between provinces.

Coverage rates were estimated using membership count data from the Philippine Health Insurance Corporation (PHIC) and the merged 2010 Labor Force Survey and 2009 Family Income and Expenditure Survey datasets. Provincial characteristics were then identified and proxied by data largely taken from the National Statistics Office. These provincial characteristics were then used as independent variables in an Ordered Logistic Regression (OLR) in order to identify which ones led to the province more likely having undercoverage, full coverage or leakage.

Both the private and government sectors have not achieved full coverage but the figures observed are promising. The regional average for the private employed program is at 71% while the provincial average is at 75%. For the government employed program, the regional average lies at 74% and the provincial average at 80%.

A more effective way of analyzing the differences in enrolment patterns of the mandatory program would be to look at it at the establishment level. This is the level at which the decision to enroll is made. Nonetheless, the provincial level analysis has given some indicators as to what areas might be worth looking into for achieving full coverage in the Employed Program.

For the private sector, the size of the establishment (in terms of number of employees) comes out as significant, with more employees hired by medium-sized establishment leading to a higher likelihood of the province having under-coverage.

Certain sectors were also found to be more prone to under-coverage. These findings are possible propositions on how targeting should be implemented.

For the government sector, no clear pattern was found based on the model presented. The model, which was based on the availability of data that could be used as proxies, explained very little of the variation between provinces. The absence of casual and contractual employees in the model is most likely a big contributing factor to the lack of results. These particular groups should be addressed in order to improve the coverage rates of the government employed program.



## INTRODUCTION

### Background on the National Health Insurance Program

The National Health Insurance Act (R.A. 7875) was promulgated in 1995. The national health insurance program “seeks to provide universal health insurance coverage and ensure affordable, acceptable, available, accessible, and quality health care services for all citizens of the Philippines” (PHIC, 2012). The Philippine Health Insurance (PhilHealth) replaced the Medicare Program and expanded coverage from government to private employees to include individuals in the informal sector.

PhilHealth is divided into the following schemes:

- a. **Employed Program.** This covers people in the government and private sectors with a formal employer-employee relationship.
- b. **Individually Paying Program.** This refers to people who opt to pay for their own membership. This generally includes the self-employed, self-earning and those in occupations without a formal employer-employee relationship.
- c. **Sponsored Program.** This covers the “lowest 25% of the Philippine population” and families targeted by the Department of Social Welfare and Development (DSWD) under the National Household Targeting System for Poverty Reduction (PHIC, 2013).
- d. **Lifetime.** This encompasses individuals 60 years and over who were previously covered by any of the four schemes and have accumulated 120 premium monthly contributions.
- e. **Overseas Workers.** This refers to active land-based Overseas Filipino Workers (OFW).

This study focuses on the Employed Program (EP), which covers both the government and private sectors. The national health insurance scheme allows members to enlist any number of dependents. Qualified dependents include the legal spouse, parents over 60 years of age and children below 21 years of age who are unmarried and unemployed. Children over the age of 21 suffering from disabilities that render them completely reliant on the member are also included in the scheme. Dependents are collectively allowed 45 days of coverage per calendar year.

## **Mandatory Health Insurance**

Countries that have achieved universal health coverage such as South Korea, Germany and Thailand have all started with mandatory health insurance before expansion into the informal sector. Theoretically speaking, compulsory health insurance is preferred to voluntary health insurance since it circumvents the problem of adverse selection (Kwon, 2008). However, health insurance enrolment can only be enforced if there exists a legal mechanism or structure that allows for compulsory enrolment. Such a mechanism exists in the formal sector in the form of established employer-employee relationship or formal agreement in the form of an employment contract.

The Medicare program that existed in the Philippines prior to 1995 was a form of mandatory health insurance that covered employees in both the government and private sectors. PHIC took over the responsibilities of Medicare and expanded to the informal sector as well.

Those covered in the Employed Program are people in the government and private sectors with a formal employer-employee relationship. The monthly premium contribution is up to 3% of the monthly basic salary with a Php 50,000 cap. The contribution table can be found in Appendix A. This premium is jointly shouldered by the employer and employee and remitted by the former on a monthly basis.

## **REVIEW OF LITERATURE**

### **Mandatory Health Insurance: Experiences from other Countries**

There are two main methods of health financing used to achieve universal health coverage. First requires a system based on general tax revenue. The second is through social health insurance. In principle, the latter involves mandatory enrolment among all populations (Carrin, et.al., 2005).

The entire process of Germany's SHI experience started in 1883. After the introduction of two laws, the expansion of SHI was facilitated by the acknowledgement of existing voluntary funds by the local government units. Enrolment into these funds was made voluntary. Later on, the expansion was furthered by a systematic inclusion of "different socioprofessional groups" in the mandatory health insurance (Carrin, et.al.,2005).

Japan's experience started with community health insurance schemes and subsequently replicated it on a national scale. Similar to Germany, they expanded by establishing laws for different groups of workers, making health insurance compulsory (Carrin, et.al., 2005).

Indonesia has two main mandatory health insurance schemes. One covers civil servants and pensioners of civil servants while the other covers employees of businesses with 10 or more employees (Hidayat, et.al., 2004). In an equity study, Hidayat, et.al. (2004) noted that the mandatory health insurance in Indonesia had positive impacts on access to outpatient care. The authors argued that the expansion of mandatory health insurance to the entire population would increase access to health care substantially. Thailand underwent a similar expansion requiring businesses from 20 or more employees to 10 or more employees to enroll into the SHI (Sakunphanit, 2008).

Similarly, in Vietnam, Ekman, et.al. (2008:256) notes that the country's SHI scheme has had significant beneficial effects on "health care utilization, household spending on care, and on health outcomes". The SHI scheme in Vietnam is employment-based covering those working in the public and private formal sectors. The scheme is financed by a payroll tax wherein the employer contributes 2% and the employee contributes 1%.

### **Some Issues with Employer-Sponsored Insurance**

Sullivan, et.al. (1992) conducted a study on employer-sponsored health insurance in the United States. Although the health insurance system in the United States is different from that of the Philippines, a couple of parallels can be drawn.

One of the issues noted by Sullivan et.al. (1992) was the decline in enrolment for employer-sponsored insurance due to fiscal constraints imposed on firms by a recent recession. Fiscal constraints can be a reason why some firms in the Philippines choose to hire their employees as 'contractuals'. By doing so, they avoid having to enroll their employees into the health insurance program as well as other social security benefits which are otherwise required by law.

The same study found that employers did not offer health insurance to their employees as they have access through different sources such as trade associations and union health plans (Sullivan et.al., 1992). In the Philippines, the national health insurance is the most widely used insurance. However, the distinction between programs could allow for brokering. One of two things could happen. First, the employee might come in having already enrolled in the voluntary program. If the employee does not demand coverage from the employer, the latter could choose to not transfer the employee's membership to the "employed program". Second, if the employee has no health insurance, the employer could negotiate with the employee to enroll to the voluntary program if the salary bracket of the employee requires a higher premium than in the voluntary program.

## METHODOLOGY

The main objective of this study is to assess the coverage levels of the mandatory scheme and determine the causes of variation between provinces. The level of coverage was computed using the following formula:

$$EP\ Coverage = \frac{Number\ of\ EP\ members}{Number\ of\ formal\ wrokers} \quad (1)$$

The coverage levels were computed separately for the private and the government sectors. Two steps were employed in order to assess the level of coverage per province. First, the number of people employed in the formal sector (private and government) was estimated from the merged 2010 Labor Force Survey (LFS) and 2009 Family Income and Expenditure Survey (FIES). Estimates were done on national, regional and provincial levels. Second, the coverage rates were computed by employing Eq. (1) using data provided by PHIC as a numerator.

### Estimation of the Formal Sector

Using the merged LFS-FIES dataset, the steps taken to arrive at the given estimates are as follows:

1. The total population of the country was taken from the 2010 Census released by the National Statistics Office (NSO).
2. Given that only individuals 15 years and older are legally allowed to work, those aged 14 years and below were removed from the population sample.
3. The proportions of employed, unemployed and those who are not part of the labor force<sup>1</sup> were estimated. Using the estimated proportion of employed individuals, the total number of employed people was obtained using the population derived in step 2.
4. The proportion of individuals classified as non-poor was estimated by clustering the third to fifth income quintiles. This proportion was subsequently used to estimate the total number of employed non-poor population.
5. The class of workers listed in the dataset comprised of:
  - (0) Private Household
  - (1) Private Establishment
  - (2) Government / Government Corporation
  - (3) Self-Employed
  - (4) Employer
  - (5) Family owned business (with pay)
  - (6) Family owned business (without pay)

---

<sup>1</sup> Individuals who are not willing or able to work are not counted as part of the labor force.

Individuals counted in the formal government sector are those belonging to group (2) and those in the formal private sector are those belonging to group (1). Using the proportions generated, the total number of employed non-poor was estimated for the formal sector.

Two estimates are provided for both the private and government sectors. The first is a direct estimate of the data while the second estimate uses the jackknife method to get the proportions. The LFS-FIES dataset has been stratified by region, which indicates that the provincial level numbers might not be representative of the true population. Although the estimates are not expected to be biased, the variance would be expected to be higher than desired given the small sample sizes of some of the provinces. The jackknife method addresses this issue by replicating the sample for each province. This method is used as a form of robustness check. The population estimates for the country, regions and provinces are found in Appendix B.

After deriving the population for the formal sector, the coverage rate per province was estimated. Using Eq. (1) provides a ratio between 0 and infinity. The ratio is interpreted as follows:

1. If  $0 < \text{Ratio} < 1$ , there is under-coverage.
  - a. If  $\text{Ratio} \leq 0.5$ , the province is classified as having severe under-coverage.
  - b. If  $0.5 < \text{Ratio} \leq 0.75$ , the province is classified as having moderate under-coverage.
  - c. If  $0.75 < \text{Ratio} \leq 0.9$ , the province is classified as having mild under-coverage.
2. If  $\text{Ratio} = 1$ , full coverage has been achieved.  
If  $0.9 < \text{Ratio} < 1.1$ , the province is classified as having full coverage. A 10% margin on both sides has been set to allow for error in estimates.
3. If  $\text{Ratio} > 1.1$ , leakage exists.
  - a. If  $1.1 < \text{Ratio} \leq 1.25$ , the province is classified as having mild leakage.
  - b. If  $1.25 < \text{Ratio} \leq 1.5$ , the province is classified as having moderate leakage.
  - c. If  $\text{Ratio} > 1.5$ , the province is classified as having severe leakage.

## Determination of Factors Leading to Under-Coverage and Leakage

In order to assess the difference in levels of coverage between the provinces, an ordered logistic regression (OLR) was employed. OLR is similar to a logistic regression model except that it considers the event and all other events that are ordered before it.

The OLR is modeled as follows:

$$C_{ij} = \Pr(y_i \leq j) = \sum_{k=1}^j \Pr(y_i = k)$$

where  $C_{ij}$  is the cumulative probability that the province is in the  $j$ th category or higher. The cumulative probability can be converted into a cumulative logit.

$$\text{logit}(C_{ij}) = \log\left(\frac{C_{ij}}{1 - C_{ij}}\right)$$

The OLR model then becomes

$$\text{logit}(C_{ij}) = \alpha_i - \beta \mathbf{X}_i$$

which models the cumulative logit as a linear function of the independent variables.

The ordered categories are as follows:

- (1) Severe Under-coverage
- (2) Moderate Under-coverage
- (3) Mild Under-coverage
- (4) Full coverage
- (5) Leakage

The OLR is run on identified provincial level characteristics. It must be noted that for mandatory health insurance, the decision to enroll lies with the employer and not the individual. The provincial level characteristics used are different for the EP for the private sector and for the EP for the government sector.

The vector of provincial level characteristics for the private sector are:

1. Sectoral Employment: Percent of employed population in agriculture, sales, services, manual work, processing/manufacturing, mining, skilled work, and education/academe
2. Nature of Employment: Percent of employed population with permanent job, short term job
3. Union coverage
4. Union-Employees Ratio
5. Enterprise Size: Number of employees in micro, small, medium and large enterprises

The vector of provincial level characteristics for the government sector are:

1. Good Governance Index
2. Real Local GDP per capita
3. Income Class

A linear regression was also estimated using the same vector of variables but restricted to the provinces with under-coverage. For this particular regression, the actual ratios were used as a dependent variable. This second regression was employed due to the highly skewed nature of the coverage rates generated, with approximately 77% of the provinces being categorized under under-coverage.

## DESCRIPTION OF VARIABLES

The vectors of variables chosen are different for the private EP and government EP. All variables are on the provincial level.

### **Private Employed Program**

***Sectoral Employment.*** Certain sectors may be comprised of firms that are more easily monitored by government agencies. Said sectors would be then more likely to enroll their employees into all security benefits enlisted by law.

***Nature of Employment.*** This variable refers to the permanency of employment. Firms that offer short-term employment may be less likely to enroll their employees into the national health insurance scheme.

***Union Coverage and Union-Employee Ratio.*** These union-related factors serve as a proxy for the strength of employees' positions in the sector. It can be argued that the stronger the position of the employees, at least collectively, the more likely they are to insist on provision of social security benefits among other things.

***Enterprise Size.*** Refers to the number of employees employed in micro, small, medium and large enterprises. Certain enterprise sizes may be more likely to enroll their employees into social security benefits. Large enterprises, for instance, already have benefits of employees costed as these are included in the packages they offer on hiring.

### **Government Employed Program**

***Good Governance Index.*** This variable serves as a proxy for the level of governance in the province. Governance in this index has been defined by the National Statistical Coordination Board as "the manner in which power is exercised in the management of the country's economic and social resources for development" (NSCB, 2013).

**Real Local GDP per capita and Income Class.** Local GDP pertains to the income of the province generated locally (i.e. Internal Revenue Allotment from the national government is excluded). The local income of the province per capita will serve as a proxy of the ability of local government to generate income and thus, to cover expenses. The income class of the province will serve as a similar proxy as the local GDP per capita.

## RESULTS AND DISCUSSION

### Coverage Rates for Employed Program

The coverage rates were obtained for the national, regional and provincial levels.

**Table 1. National Coverage for Private Employed Program**

|                    | Coverage Rate | Remarks       |
|--------------------|---------------|---------------|
| <b>Philippines</b> | 97.8%         | Full coverage |

**Table 2. Regional Coverage Rates for Private Employed Program**

| Region                          | Coverage Rate | Remarks                |
|---------------------------------|---------------|------------------------|
| <b>I - Ilocos Region</b>        | 66.75%        | Moderate undercoverage |
| <b>II - Cagayan Valley</b>      | 48.48%        | Severe undercoverage   |
| <b>III - Central Luzon</b>      | 77.06%        | Mild undercoverage     |
| <b>IVA - Calabarzon</b>         | 111.90%       | Mild leakage           |
| <b>IVB - Mimaropa</b>           | 49%           | Severe undercoverage   |
| <b>V - Bicol Region</b>         | 51.64%        | Moderate undercoverage |
| <b>VI - Western Visayas</b>     | 69.31%        | Moderate undercoverage |
| <b>VII - Central Visayas</b>    | 105%          | Full coverage          |
| <b>VIII - Eastern Visayas</b>   | 59.70%        | Moderate undercoverage |
| <b>IX - Zamboanga Peninsula</b> | 57.40%        | Moderate undercoverage |
| <b>X - Northern Mindanao</b>    | 68%           | Moderate undercoverage |
| <b>XI - Davao</b>               | 76.20%        | Mild undercoverage     |
| <b>XII - Socksargen</b>         | 54.47%        | Moderate undercoverage |
| NCR                             | 143.90%       | Moderate leakage       |
| CAR                             | 81.90%        | Mild undercoverage     |
| ARMM                            | 31.40%        | Severe undercoverage   |



|        |        |                        |
|--------|--------|------------------------|
| Caraga | 61.90% | Moderate undercoverage |
|--------|--------|------------------------|

**Table 3. Provincial Coverage Rates for Private Employed Program**

| Province          | No Jackknife<br>Coverage<br>Rate | Remarks                | Jackknife<br>Coverage<br>Rate | Remarks                |
|-------------------|----------------------------------|------------------------|-------------------------------|------------------------|
| <b>REGION I</b>   |                                  |                        |                               |                        |
| Ilocos Norte      | 59.79%                           | Moderate undercoverage | 60.00%                        | Moderate undercoverage |
| Ilocos Sur        | 53.20%                           | Moderate undercoverage | 53.18%                        | Moderate undercoverage |
| La Union          | 97.73%                           | Full coverage          | 96.11%                        | Full coverage          |
| Pangasinan        | 64.64%                           | Moderate undercoverage | 64.67%                        | Moderate undercoverage |
| <b>REGION II</b>  |                                  |                        |                               |                        |
| Batanes           |                                  |                        |                               |                        |
| Cagayan           | 62.25%                           | Moderate undercoverage | 61.94%                        | Moderate undercoverage |
| Isabela           | 47.12%                           | Severe undercoverage   | 47.21%                        | Severe undercoverage   |
| Nueva Vizcaya     | 41.58%                           | Severe undercoverage   | 41.36%                        | Severe undercoverage   |
| Quirino           | 19.68%                           | Severe undercoverage   | 19.95%                        | Severe undercoverage   |
| <b>REGION III</b> |                                  |                        |                               |                        |
| Aurora            | 63.60%                           | Moderate undercoverage | 62.55%                        | Moderate undercoverage |
| Bataan            | 92.07%                           | Full coverage          | 89.61%                        | Mild undercoverage     |
| Bulacan           | 71.80%                           | Moderate undercoverage | 72.86%                        | Moderate undercoverage |
| Nueva Ecija       | 61.29%                           | Moderate undercoverage | 61.23%                        | Moderate undercoverage |
| Pampanga          | 69.82%                           | Moderate undercoverage | 69.39%                        | Moderate undercoverage |
| Tarlac            | 93.45%                           | Full coverage          | 93.07%                        | Full coverage          |
| Zambales          | 130.28%                          | Moderate leakage       | 130.49%                       | Moderate leakage       |
| <b>REGION IVA</b> |                                  |                        |                               |                        |
| Batangas          | 112.23%                          | Mild leakage           | 112.64%                       | Mild leakage           |

|                    |         |                        |         |                        |
|--------------------|---------|------------------------|---------|------------------------|
| Cavite             | 103.13% | Full coverage          | 103.01% | Full coverage          |
| Laguna             | 124.10% | Mild leakage           | 122.58% | Mild leakage           |
| Quezon             | 142.31% | Moderate leakage       | 139.96% | Moderate leakage       |
| Rizal              | 99.05%  | Full coverage          | 96.78%  | Full coverage          |
| <b>REGION IVB</b>  |         |                        |         |                        |
| Marinduque         | 64.14%  | Moderate undercoverage | 65.05%  | Moderate undercoverage |
| Occidental Mindoro | 21.37%  | Severe undercoverage   | 21.47%  | Severe undercoverage   |
| Oriental Mindoro   | 52.70%  | Moderate undercoverage | 53.70%  | Moderate undercoverage |
| Palawan            | 60.36%  | Moderate undercoverage | 59.47%  | Moderate undercoverage |
| Romblon            | 58.61%  | Mild undercoverage     | 58.08%  | Moderate undercoverage |
| <b>REGION V</b>    |         |                        |         |                        |
| Albay              | 59.37%  | Moderate undercoverage | 59.86%  | Moderate undercoverage |
| Camarines Norte    | 39.07%  | Severe undercoverage   | 38.83%  | Severe undercoverage   |
| Camarines Sur      | 51.16%  | Moderate undercoverage | 50.96%  | Moderate undercoverage |
| Catanduanes        | 60.58%  | Moderate undercoverage | 57.49%  | Moderate undercoverage |
| Masbate            | 36.43%  | Severe undercoverage   | 36.78%  | Severe undercoverage   |
| Sorsogon           | 51.56%  | Moderate undercoverage | 50.76%  | Severe undercoverage   |
| <b>REGION VI</b>   |         |                        |         |                        |
| Aklan              | 84.08%  | Mild undercoverage     | 84.41%  | Mild undercoverage     |
| Antique            | 104.36% | Full coverage          | 106.65% | Full coverage          |
| Capiz              | 48.09%  | Severe undercoverage   | 47.89%  | Severe undercoverage   |
| Guimaras           | 63.97%  | Moderate undercoverage | 64.46%  | Moderate undercoverage |
| Iloilo             | 33.13%  | Severe undercoverage   | 32.91%  | Severe undercoverage   |
| Negros Occidental  | 79.34%  | Mild undercoverage     | 78.93%  | Mild undercoverage     |
| <b>REGION VII</b>  |         |                        |         |                        |
| Bohol              | 94.64%  | Full coverage          | 95.01%  | Full coverage          |
| Cebu               | 110.87% | Mild leakage           | 108.38% | Full coverage          |

|                     |        |                        |        |                        |
|---------------------|--------|------------------------|--------|------------------------|
| Negros Oriental     | 82.41% | Mild undercoverage     | 82.99% | Mild undercoverage     |
| Siquijor            | 59.07% | Moderate undercoverage | 58.46% | Moderate undercoverage |
| <b>REGION VIII</b>  |        |                        |        |                        |
| Biliran             | 52.36% | Moderate undercoverage | 50.98% | Moderate undercoverage |
| Eastern Samar       | 42.07% | Severe undercoverage   | 41.41% | Severe undercoverage   |
| Leyte               | 68.80% | Moderate undercoverage | 69.35% | Moderate undercoverage |
| Northern Samar      | 67.58% | Moderate undercoverage | 66.29% | Moderate undercoverage |
| Samar (Western)     | 32.39% | Severe undercoverage   | 32.22% | Severe undercoverage   |
| Southern Leyte      | 76.62% | Mild undercoverage     | 76.06% | Mild undercoverage     |
| <b>REGION IX</b>    |        |                        |        |                        |
| Isabela City        | 42.16% | Severe undercoverage   | 45.93% | Severe undercoverage   |
| Zamboanga del Norte | 71.19% | Moderate undercoverage | 70.85% | Moderate undercoverage |
| Zamboanga del Sur   | 58.28% | Moderate undercoverage | 57.33% | Moderate undercoverage |
| ZamboangaSibugay    | 35.99% | Severe undercoverage   | 37.12% | Severe undercoverage   |
| <b>REGION X</b>     |        |                        |        |                        |
| Bukidnon            | 47.79% | Severe undercoverage   | 47.85% | Severe undercoverage   |
| Camiguin            | 66.58% | Moderate undercoverage | 67.03% | Moderate undercoverage |
| Lanao del Norte     | 65.59% | Moderate undercoverage | 65.95% | Moderate undercoverage |
| Misamis Occidental  | 89.33% | Mild undercoverage     | 88.32% | Mild undercoverage     |
| Misamis Oriental    | 76.63% | Moderate undercoverage | 75.31% | Moderate undercoverage |
| <b>REGION XI</b>    |        |                        |        |                        |
| Compostela Valley   | 46.92% | Severe undercoverage   | 46.62% | Severe undercoverage   |
| Davao del Norte     | 75.41% | Moderate undercoverage | 74.72% | Moderate undercoverage |
| Davao del Sur       | 84.23% | Mild undercoverage     | 82.69% | Mild undercoverage     |

|                   |         |                        |         |                        |
|-------------------|---------|------------------------|---------|------------------------|
| Davao Oriental    | 59.44%  | Moderate undercoverage | 59.25%  | Moderate undercoverage |
| <b>REGION XII</b> |         |                        |         |                        |
| Cotabato City     | 34.58%  | Severe undercoverage   | 37.52%  | Severe undercoverage   |
| North Cotabato    | 32.02%  | Severe undercoverage   | 29.98%  | Severe undercoverage   |
| Sarangani         | 38.34%  | Severe undercoverage   | 38.70%  | Severe undercoverage   |
| South Cotabato    | 89.43%  | Mild undercoverage     | 88.30%  | Mild undercoverage     |
| Sultan Kudarat    | 24.40%  | Severe undercoverage   | 24.54%  | Severe undercoverage   |
| <b>ARMM</b>       |         |                        |         |                        |
| Basilan           | 16.34%  | Severe undercoverage   | 15.98%  | Severe undercoverage   |
| Lanao del Sur     | 61.94%  | Moderate undercoverage | 57.45%  | Moderate undercoverage |
| Maguindanao       | 44.77%  | Severe undercoverage   | 42.48%  | Severe undercoverage   |
| Sulu              | 233.17% | Severe leakage         | 207.89% | Severe leakage         |
| Tawi-Tawi         | 290.85% | Severe leakage         | 257.23% | Severe leakage         |
| <b>CARAGA</b>     |         |                        |         |                        |
| Agusan del Norte  | 75.23%  | Mild undercoverage     | 73.62%  | Moderate undercoverage |
| Agusan del Sur    | 42.71%  | Severe undercoverage   | 42.34%  | Severe undercoverage   |
| Surigao del Norte | 129.76% | Moderate leakage       | 131.12% | Moderate leakage       |
| Surigao del Sur   | 44.41%  | Severe undercoverage   | 45.07%  | Severe undercoverage   |
| <b>CAR</b>        |         |                        |         |                        |
| Abra              | 80.41%  | Mild undercoverage     | 80.54%  | Mild undercoverage     |
| Apayao            | 51.21%  | Moderate undercoverage | 51.27%  | Moderate undercoverage |
| Benguet           | 84.79%  | Mild undercoverage     | 83.52%  | Mild undercoverage     |
| Ifugao            | 42.26%  | Severe undercoverage   | 43.47%  | Severe undercoverage   |
| Kalinga           | 53.15%  | Moderate undercoverage | 51.08%  | Moderate undercoverage |
| Mountain Province | 121.76% | Mild leakage           | 120.30% | Mild leakage           |
| <b>NCR</b>        |         |                        |         |                        |

|                     |         |                  |         |                  |
|---------------------|---------|------------------|---------|------------------|
| First District NCR  | 146.76% | Moderate leakage | 147.20% | Moderate leakage |
| Second District NCR | 146.91% | Moderate leakage | 147.17% | Moderate leakage |
| Third District NCR  | 197.65% | Severe leakage   | 199.48% | Severe leakage   |
| Fourth District NCR | 105.46% | Full coverage    | 104.99% | Full coverage    |

For the Private Employed Program, up to 63% of provinces are classified as having severe to moderate under-coverage. Two provinces, Quirino and Basilan, have coverage rates below 20%. These rates are far from satisfactory given the mandatory nature of the program. Two provinces, Sulu and Tawi-Tawi, have notable leakages, with coverage rates over 200%. Both provinces have high numbers of micro enterprises. These coverage rates might then be explained by respondents to LFS incorrectly classifying themselves under informal sector categories instead of under formal private establishments. If this is the case, the coverage rates for the informal sector<sup>2</sup> for these two provinces are expected to improve.

**Table 4. National Coverage Rate for Government Employed Program**

|                    | Coverage Rate | Remarks            |
|--------------------|---------------|--------------------|
| <b>Philippines</b> | 75.70%        | Mild Undercoverage |

**Table 5. Regional Coverage Rates for Government Employed Program**

| Region                          | Coverage Rate | Remarks                |
|---------------------------------|---------------|------------------------|
| <b>I - Ilocos Region</b>        | 87.06%        | Mild undercoverage     |
| <b>II - Cagayan Valley</b>      | 79.76%        | Mild undercoverage     |
| <b>III - Central Luzon</b>      | 83.51%        | Mild undercoverage     |
| <b>IVA - Calabarzon</b>         | 81.70%        | Mild undercoverage     |
| <b>IVB - Mimaropa</b>           | 59.68%        | Moderate undercoverage |
| <b>V - Bicol Region</b>         | 70.38%        | Moderate undercoverage |
| <b>VI - Western Visayas</b>     | 74.96%        | Moderate undercoverage |
| <b>VII - Central Visayas</b>    | 60.78%        | Moderate undercoverage |
| <b>VIII - Eastern Visayas</b>   | 76.59%        | Mild undercoverage     |
| <b>IX - Zamboanga Peninsula</b> | 67.54%        | Moderate undercoverage |
| <b>X - Northern Mindanao</b>    | 61.90%        | Moderate undercoverage |

<sup>2</sup> Coverage rates for the Individually Paying Program, which covers the informal sector, are provided in a separate report.

|                  |        |                        |
|------------------|--------|------------------------|
| XI - Davao       | 66.16% | Moderate undercoverage |
| XII - Socksargen | 74.25% | Moderate undercoverage |
| NCR              | 97.10% | Full coverage          |
| CAR              | 90.78% | Full coverage          |
| ARMM             | 54.28% | Moderate undercoverage |
| Caraga           | 71.85% | Moderate undercoverage |

**Table 6. Provincial Coverage Rates for Government Employed Program**

| Province          | No Jackknife  |                        | Jackknife     |                        |
|-------------------|---------------|------------------------|---------------|------------------------|
|                   | Coverage Rate | Remarks                | Coverage Rate | Remarks                |
| <b>REGION I</b>   |               |                        |               |                        |
| Ilocos Norte      | 112.17%       | Mild leakage           | 112.31%       | Mild leakage           |
| Ilocos Sur        | 72.13%        | Moderate undercoverage | 72.22%        | Moderate undercoverage |
| La Union          | 118.53%       | Mild leakage           | 118.55%       | Mild leakage           |
| Pangasinan        | 78.81%        | Mild undercoverage     | 77.77%        | Moderate undercoverage |
| <b>REGION II</b>  |               |                        |               |                        |
| Batanes           | 59.80%        | Moderate undercoverage | 59.80%        | Moderate undercoverage |
| Cagayan           | 74.77%        | Moderate undercoverage | 74.92%        | Moderate undercoverage |
| Isabela           | 85.75%        | Mild undercoverage     | 84.45%        | Mild undercoverage     |
| Nueva Vizcaya     | 111.72%       | Mild leakage           | 113.67%       | Mild leakage           |
| Quirino           | 63.24%        | Moderate undercoverage | 65.04%        | Moderate undercoverage |
| <b>REGION III</b> |               |                        |               |                        |
| Aurora            | 85.86%        | Mild undercoverage     | 83.41%        | Mild undercoverage     |
| Bataan            | 64.55%        | Moderate undercoverage | 64.63%        | Moderate undercoverage |
| Bulacan           | 81.43%        | Mild undercoverage     | 82.33%        | Mild undercoverage     |
| Nueva Ecija       | 83.56%        | Mild undercoverage     | 84.66%        | Mild undercoverage     |
| Pampanga          | 92.16%        | Full coverage          | 90.79%        | Full coverage          |

|                    |         |                        |         |                        |
|--------------------|---------|------------------------|---------|------------------------|
| Tarlac             | 86.33%  | Mild undercoverage     | 83.46%  | Mild undercoverage     |
| Zambales           | 85.09%  | Mild undercoverage     | 91.34%  | Mild undercoverage     |
| <b>REGION IVA</b>  |         |                        |         |                        |
| Batangas           | 81.74%  | Mild undercoverage     | 80.73%  | Mild undercoverage     |
| Cavite             | 64.28%  | Moderate undercoverage | 64.27%  | Moderate undercoverage |
| Laguna             | 80.81%  | Mild undercoverage     | 82.92%  | Mild undercoverage     |
| Quezon             | 147.90% | Moderate leakage       | 144.41% | Moderate leakage       |
| Rizal              | 80.56%  | Mild undercoverage     | 79.38%  | Mild undercoverage     |
| <b>REGION IVB</b>  |         |                        |         |                        |
| Marinduque         | 64.07%  | Moderate undercoverage | 63.46%  | Moderate undercoverage |
| Occidental Mindoro | 55.20%  | Moderate undercoverage | 55.67%  | Moderate undercoverage |
| Oriental Mindoro   | 58.33%  | Moderate undercoverage | 60.53%  | Moderate undercoverage |
| Palawan            | 60.85%  | Moderate undercoverage | 59.67%  | Moderate undercoverage |
| Romblon            | 65.19%  | Moderate undercoverage | 66.16%  | Moderate undercoverage |
| <b>REGION V</b>    |         |                        |         |                        |
| Albay              | 65.18%  | Moderate undercoverage | 63.91%  | Moderate undercoverage |
| Camarines Norte    | 78.23%  | Mild undercoverage     | 79.25%  | Mild undercoverage     |
| Camarines Sur      | 66.09%  | Moderate undercoverage | 65.45%  | Moderate undercoverage |
| Catanduanes        | 63.50%  | Moderate undercoverage | 63.78%  | Moderate undercoverage |
| Masbate            | 124.22% | Mild leakage           | 124.29% | Mild leakage           |
| Sorsogon           | 62.99%  | Moderate undercoverage | 62.99%  | Moderate undercoverage |
| <b>REGION VI</b>   |         |                        |         |                        |
| Aklan              | 97.98%  | Full coverage          | 99.24%  | Full coverage          |
| Antique            | 88.45%  | Mild undercoverage     | 88.19%  | Mild undercoverage     |
| Capiz              | 80.01%  | Mild undercoverage     | 79.79%  | Mild undercoverage     |

|                     |         |                        |         |                        |
|---------------------|---------|------------------------|---------|------------------------|
| Guimaras            | 56.98%  | Moderate undercoverage | 58.69%  | Moderate undercoverage |
| Iloilo              | 47.81%  | Severe undercoverage   | 46.70%  | Severe undercoverage   |
| Negros Occidental   | 61.74%  | Moderate undercoverage | 62.59%  | Moderate undercoverage |
| <b>REGION VII</b>   |         |                        |         |                        |
| Bohol               | 56.06%  | Moderate undercoverage | 57.49%  | Moderate undercoverage |
| Cebu                | 65.31%  | Moderate undercoverage | 65.65%  | Moderate undercoverage |
| Negros Oriental     | 51.66%  | Moderate undercoverage | 51.00%  | Moderate undercoverage |
| Siquijor            | 85.10%  | Mild undercoverage     | 87.90%  | Mild undercoverage     |
| <b>REGION VIII</b>  |         |                        |         |                        |
| Biliran             | 46.94%  | Severe undercoverage   | 47.58%  | Severe undercoverage   |
| Eastern Samar       | 105.68% | Full coverage          | 104.38% | Full coverage          |
| Leyte               | 88.31%  | Mild undercoverage     | 90.48%  | Full coverage          |
| Northern Samar      | 57.63%  | Moderate undercoverage | 56.62%  | Moderate undercoverage |
| Samar (Western)     | 68.50%  | Moderate undercoverage | 68.52%  | Moderate undercoverage |
| Southern Leyte      | 76.34%  | Mild undercoverage     | 74.95%  | Moderate undercoverage |
| <b>REGION IX</b>    |         |                        |         |                        |
| Isabela City        | 66.50%  | Moderate undercoverage | 68.95%  | Moderate undercoverage |
| Zamboanga del Norte | 77.02%  | Mild undercoverage     | 78.61%  | Mild undercoverage     |
| Zamboanga del Sur   | 73.91%  | Mild undercoverage     | 75.05%  | Moderate undercoverage |
| ZamboangaSibugay    | 36.59%  | Severe undercoverage   | 37.82%  | Severe undercoverage   |
| <b>REGION X</b>     |         |                        |         |                        |
| Bukidnon            | 58.69%  | Moderate undercoverage | 57.92%  | Moderate undercoverage |
| Camiguin            | 76.36%  | Mild undercoverage     | 75.40%  | Moderate undercoverage |
| Lanao del Norte     | 55.96%  | Moderate undercoverage | 55.83%  | Moderate undercoverage |



|                    |         |                        |         |                        |
|--------------------|---------|------------------------|---------|------------------------|
| Misamis Occidental | 96.51%  | Full coverage          | 94.80%  | Full coverage          |
| Misamis Oriental   | 57.67%  | Moderate undercoverage | 58.23%  | Moderate undercoverage |
| <b>REGION XI</b>   |         |                        |         |                        |
| Compostela Valley  | 61.82%  | Moderate undercoverage | 63.27%  | Moderate undercoverage |
| Davao del Norte    | 68.97%  | Moderate undercoverage | 65.50%  | Moderate undercoverage |
| Davao del Sur      | 62.35%  | Moderate undercoverage | 60.99%  | Moderate undercoverage |
| Davao Oriental     | 84.52%  | Mild undercoverage     | 87.57%  | Mild undercoverage     |
| <b>REGION XII</b>  |         |                        |         |                        |
| Cotabato City      | 57.28%  | Moderate undercoverage | 61.02%  | Moderate undercoverage |
| North Cotabato     | 97.35%  | Full coverage          | 95.37%  | Full coverage          |
| Sarangani          | 59.41%  | Moderate undercoverage | 60.43%  | Moderate undercoverage |
| South Cotabato     | 64.79%  | Moderate undercoverage | 59.65%  | Moderate undercoverage |
| Sultan Kudarat     | 80.55%  | Mild undercoverage     | 81.76%  | Mild undercoverage     |
| <b>ARMM</b>        |         |                        |         |                        |
| Basilan            | 43.02%  | Severe undercoverage   | 40.56%  | Severe undercoverage   |
| Lanao del Sur      | 62.12%  | Moderate undercoverage | 58.40%  | Moderate undercoverage |
| Maguindanao        | 141.59% | Moderate leakage       | 128.81% | Moderate leakage       |
| Sulu               | 138.59% | Moderate leakage       | 124.90% | Mild leakage           |
| Tawi-Tawi          | 96.00%  | Full coverage          | 90.74%  | Full coverage          |
| <b>CARAGA</b>      |         |                        |         |                        |
| Agusan del Norte   | 103.55% | Full coverage          | 102.58% | Full coverage          |
| Agusan del Sur     | 65.36%  | Moderate undercoverage | 65.92%  | Moderate undercoverage |
| Surigao del Norte  | 62.57%  | Moderate undercoverage | 59.60%  | Moderate undercoverage |
| Surigao del Sur    | 85.17%  | Mild undercoverage     | 86.34%  | Mild undercoverage     |
| <b>CAR</b>         |         |                        |         |                        |
| Abra               | 111.57% | Mild leakage           | 112.39% | Mild leakage           |
| Apayao             | 61.45%  | Moderate undercoverage | 60.94%  | Moderate undercoverage |
| Benguet            | 86.34%  | Mild                   | 83.64%  | Mild                   |

|                     |         |                  |         |                  |
|---------------------|---------|------------------|---------|------------------|
|                     |         | undercoverage    |         | undercoverage    |
| Ifugao              | 87.40%  | Mild             | 86.84%  | Mild             |
|                     |         | undercoverage    |         | undercoverage    |
| Kalinga             | 75.47%  | Mild             | 75.33%  | Moderate         |
|                     |         | undercoverage    |         | undercoverage    |
| Mountain Province   | 227.58% | Severe leakage   | 229.45% | Severe leakage   |
| <b>NCR</b>          |         |                  |         |                  |
| First District NCR  | 108.64% | Full coverage    | 111.18% | Mild leakage     |
| Second District NCR | 90.51%  | Full coverage    | 94.51%  | Full coverage    |
| Third District NCR  | 134.73% | Moderate leakage | 128.79% | Moderate leakage |
| Fourth District NCR | 67.80%  | Moderate         | 68.39%  | Moderate         |
|                     |         | undercoverage    |         | undercoverage    |

It is worth noting that under the Government Employed Program, no region has been classified as having severe under-coverage. Only four provinces have been classified as having severe under-coverage but all near the 50% mark. The observed coverage levels below 100% can be partially explained by a difference in definition between the LFS-estimated population and the PhilHealth population. Some respondents for the LFS that indicated government employment might have been casual employees or contractuels. These types of workers are not entitled to the same benefits as that of a regular employee. In order to get more accurate coverage rates for the government EP, the number of contractuels and casual employees have to be subtracted from the estimated population.

## Regression Results

**Table 7. Ordered Logit Regression for Private Employed Program**

| Independent Variables           | No Jackknife |            | Jackknife |            |
|---------------------------------|--------------|------------|-----------|------------|
|                                 | Coeff.       | Std. Error | Coeff.    | Std. Error |
| <b>Sectoral Employment</b>      |              |            |           |            |
| <i>Agriculture</i>              | -0.2077      | 0.2125     | 0.0314    | 0.1184     |
| <i>Banking/Finance</i>          | -1.0008*     | 0.5212     | -0.8807*  | 0.4665     |
| <i>Sales</i>                    | -0.2139      | 0.2148     | -0.0568   | 0.1377     |
| <i>Real Estate</i>              | 0.5591       | 1.0302     | 1.3381    | 1.0712     |
| <i>Services</i>                 | -0.2143      | 0.2247     | 0.1555    | 0.1244     |
| <i>Manual</i>                   | -0.1985      | 0.2427     | 0.0265    | 0.1386     |
| <i>Mining</i>                   | -0.3005      | 0.2066     | -0.1983   | 0.1904     |
| <i>Processing/Manufacturing</i> | -0.1842      | 0.2227     | 0.0151    | 0.1291     |
| <i>Skilled</i>                  | 0.4515       | 0.3996     | 0.6455**  | 0.3142     |

|  |           |        |           |        |
|--|-----------|--------|-----------|--------|
| <i>Education</i>                             | -0.1412   | 0.2274 | 0.1370    | 0.1538 |
| <b>Nature of Employment</b>                  |           |        |           |        |
| <i>Permanent</i>                             | 0.3336*** | 0.1288 | 0.2014**  | 0.0990 |
| <i>Short-Term</i>                            | 0.4250*** | 0.1375 | 0.3124*** | 0.1083 |
| Union Coverage                               | -0.0689   | 0.0635 | -0.0026   | 0.0628 |
| Union-Employee Ratio (per 10,000 population) | 0.1060    | 0.0905 | 0.0386    | 0.0890 |
| <b>Enterprise Size (No. of Employees)</b>    |           |        |           |        |
| <i>Micro</i>                                 | 0.0000    | 0.0001 | 0.0000    | 0.0000 |
| <i>Small</i>                                 | 0.0001    | 0.0001 | 0.0001    | 0.0001 |
| <i>Medium</i>                                | -0.0006** | 0.0003 | -0.0007** | 0.0003 |
| <i>Large</i>                                 | 0.0000**  | 0.0000 | 0.0001*** | 0.0000 |

Significant at \*\*\*1% level, \*\*5% level, \*10% level.

**Table 8. Ordinary Least Squares Regression for Private Employed Program (Restricted to Provinces with Under-coverage)**

| Independent Variables                        | No Jackknife |            | Jackknife |            |
|--|--------------|------------|-----------|------------|
|  | Coeff.       | Std. Error | Coeff.    | Std. Error |
| <b>Sectoral Employment</b>                   |              |            |           |            |
| <i>Agriculture</i>                           | 0.0199       | 0.0193     | 0.0083    | 0.0091     |
| <i>Banking/Finance</i>                       | -0.0110**    | 0.0049     | -0.0049   | 0.0420     |
| <i>Sales</i>                                 | 0.0187       | 0.0192     | 0.0021    | 0.0114     |
| <i>Real Estate</i>                           | -0.0752      | 0.1028     | 0.0671    | 0.1058     |
| <i>Services</i>                              | 0.0254       | 0.0201     | 0.0198**  | 0.0091     |
| <i>Manual</i>                                | 0.0349       | 0.0222     | 0.0174    | 0.0105     |
| <i>Mining</i>                                | 0.0133       | 0.0171     | 0.0081    | 0.0141     |
| <i>Processing/Manufacturing</i>              | 0.0226       | 0.0213     | 0.0113    | 0.0105     |
| <i>Skilled</i>                               | 0.1058**     | 0.0426     | 0.0620**  | 0.0295     |
| <i>Education</i>                             | 0.0263       | 0.0223     | 0.0151    | 0.0115     |
| <b>Nature of Employment</b>                  |              |            |           |            |
| <i>Permanent</i>                             | 0.0109       | 0.0100     | 0.0115*   | 0.0067     |
| <i>Short-Term</i>                            | 0.0116       | 0.0110     | 0.0132    | 0.0080     |
| Union Coverage                               | 0.0029       | 0.0085     | -0.0003   | 0.0074     |
| Union-Employee Ratio (per 10,000 population) | -0.0064      | 0.0152     | 0.0030    | 0.0141     |
| <b>Enterprise Size (No. of Employees)</b>    |              |            |           |            |
| <i>Micro</i>                                 | 0.0000       | 0.0000     | 0.0000    | 0.0000     |

|               |         |        |          |        |
|---------------|---------|--------|----------|--------|
| <i>Small</i>  | 0.0000  | 0.0000 | 0.0000   | 0.0000 |
| <i>Medium</i> | 0.0000  | 0.0000 | 0.0000   | 0.0000 |
| <i>Large</i>  | 0.0000  | 0.0000 | 0.0000** | 0.0000 |
| Constant      | -2.8051 | 1.8587 | -1.7075  | 1.0515 |

Significant at \*\*\*1% level, \*\*5% level, \*10% level.

Table 7 shows that the nature of employment significantly affects the coverage levels of the province. Both permanent and short-term employments have a positive impact on the coverage levels. However, when looking at the OLS regressions (Table 8) which focuses on the provinces with under-coverage, this effect not only becomes insignificant but also diminishes considerably in terms of magnitude. Sectoral employment was largely insignificant except for the skilled sector. The higher the percentage of people working in the skilled sector, the more likely it is for the province to belong to higher coverage level categories. The result is consistent with the OLS regressions. The same result is observed for the services sector albeit only significant in the OLS regression. The banking/finance sector also came out significant but negative, signifying a low enrolment rate for the sector. For the enterprise sizes, both the medium and large enterprises came out significant with opposing results – the former having a negative coefficient and the latter having a positive coefficient. This indicates that the greater the number of employees in the medium-sized enterprises, the more likely it is for the province to have lower coverage levels. Conversely, the greater the number of employees in large-sized enterprises, the more likely it is for the province to have higher coverage levels. This result suggests that medium-sized enterprises are less likely to enroll their employees in the Employed Program while large-sized enterprises are more likely to enroll their employees in the same program. However, it must be noted that the magnitude of the coefficients are very small.

**Table 9. Ordered Logit Regression for Government Employed Program**

| Independent Variables | No Jackknife |            | Jackknife |            |
|-----------------------|--------------|------------|-----------|------------|
|                       | Coeff.       | Std. Error | Coeff.    | Std. Error |
| Good Governance Index | -0.006       | 0.010      | -0.008    | 0.010      |
| Real Local GDP/capita | 0.088**      | 0.041      | 0.088**   | 0.041      |
| Income Class          | 0.040        | 0.212      | -0.067    | 0.216      |

Significant at \*\*\*1% level, \*\*5% level, \*10% level.

**Table 10. Ordinary Least Squares Regression for Government Employed Program (Restricted to Provinces with Under-coverage)**

| Independent Variables | No Jackknife |            | Jackknife |            |
|-----------------------|--------------|------------|-----------|------------|
|                       | Coeff.       | Std. Error | Coeff.    | Std. Error |
| Good Governance Index | 0.001        | 0.001      | 0.001     | 0.001      |
| Real Local GDP/capita | 0.002        | 0.011      | 0.003     | 0.011      |
| Income Class          | -0.018       | 0.015      | -0.017    | 0.015      |
| Constant              | 0.630***     | 0.087      | 0.594***  | 0.087      |

Significant at \*\*\*1% level, \*\*5% level, \*10% level.

For the government Employed Program, only the local GDP per capita came out as significant for the ordered logistic regression. This signifies that the higher the local income generated by the province per capita, the more likely it is for the province to have higher coverage rates. The income class of the province had no significant impact on the level of coverage. Cross-tabulation of income class against coverage-level categories showed no evident pattern. It must be noted that the R-squared for the ordered logistic regressions and the OLS regressions are very low at 0.027 and 0.125, respectively. This implies that the model explains very little of the variation between provinces. To improve the model, the number of casual or contractual employees per province should be included. Secondly, a better proxy for corruption might be able to better explain the observed variation between provinces.

## LIMITATIONS

1. The computation of coverage rates in this study is based on estimation of FIES and LFS datasets as well as headcount membership data from PhilHealth. There may exist discrepancies between the former and the latter in terms of definition of the class of workers.
2. The models need further improvement, especially that of the government employed program. The incompleteness of the model implies that there are certain factors that would have better explained the variation of coverage levels. This study is limited as there are no appropriate proxies for certain factors such as corruption, as well as the number of casual or contractual employees.
3. The analysis is done with provincial level characteristics. The level analysis should be done on the level at which the decision is taken. For the Private EP, this would be the firm level while for the Government EP, this would be at the LGU level.

## RECOMMENDATIONS

### Private Employed Program

#### **1. Monitoring medium-sized establishments.**

Results indicate that the more number of employees hired by medium-sized establishments, the larger the likelihood of the province to have under-coverage. The opposite was found for large establishments. Although the impact was miniscule, the direction of the relationship and the significance are indicators that these establishments might be more likely to fall in between the cracks. From PHIC's contribution table, contribution of the individual is the same as the IPP up to a salary range of Php24,999. Without monitoring, the employer can encourage employees who earn over Php 13,000 to enroll in the IPP scheme instead and offer to pay half the premium in order to save on monthly premium costs. This type of brokering would be more likely to occur in smaller-sized establishments.

#### **2. Targeting of certain sectors.**

The banking and finance sector presented a negative impact on provincial level coverage. The most relevant lesson to take from this is that certain sectors might be more prone to under-coverage. This highlights the importance of targeting enrolment by sector. A number of countries that have achieved universal coverage started with sectoral coverage. Luxembourg started with the manufacturing and industrial workers while Israel started with the agricultural sector (Carrin, et.al., 2005). The same principle is applied with the government-employed program.

#### **3. Monitoring of casualization.**

Under Article 280 of the Labor Code of the Philippines, it is stated that "any employee who has rendered at least one year of service, whether such service is continuous or broken, shall be considered a regular employee with respect to the activity in which he is employed and his employment shall continue while such activity exists". There has been anecdotal evidence of firms that terminate employment every 6 months before rehiring in order to maintain the casual status of the employee. The one-year clause of the Labor Code should be properly implemented through monitoring as well as through information campaigns for casual employees. Enrolment into social security benefits, which include the national health insurance, will then be addressed when casualization is addressed.

## Government Employed Program

### **1. Enrolment of casual and contractual employees.**

Government should mandate the enrolment of non-regular employees into the health insurance program, if not as formal employees then as members of the voluntary program. Workers belonging to these categories are waiting for regularization. They are then more likely to postpone enrolment until they become regular employees and can avail of the same benefits as their counterparts.

### **2. Monitoring of Local Government Units.**

Monitoring of government enrolment must be done on the local level. In the thrust for universal health coverage, the importance of political will cannot be stressed enough. If there is lack of coverage in the government sector, which is supposed to be mandatory, this signals a lack of political will for expansion in other sectors. Under the revised National Health Insurance Act of 2013, Section 28 has been amended to include “It shall be mandatory for all government agencies to include the payment of premium contribution in their respective annual appropriations.” The Implementing Rules and Regulations of NHIA 2013 should, thus, look into how proper implementation of this clause can be monitored.

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**APPENDIX A: PREMIUM CONTRIBUTION TABLE**

| <b>Salary Bracket</b> | <b>Salary Range</b>   | <b>Salary Base</b> | <b>Total Monthly Premium</b> | <b>Employee Share</b> | <b>Employer Share</b> |
|-----------------------|-----------------------|--------------------|------------------------------|-----------------------|-----------------------|
| 1                     | 7,999.99 and below    | 7,000.00           | 175                          | 87.5                  | 87.5                  |
| 2                     | 8,000.00 - 8,999.99   | 8,000.00           | 200                          | 100                   | 100                   |
| 3                     | 9,000.00 - 9,999.99   | 9,000.00           | 225                          | 112.5                 | 112.5                 |
| 4                     | 10,000.00 - 10,999.99 | 10,000.00          | 250                          | 125                   | 125                   |
| 5                     | 11,000.00 - 11,999.99 | 11,000.00          | 275                          | 137.5                 | 137.5                 |
| 6                     | 12,000.00 - 12,999.99 | 12,000.00          | 300                          | 150                   | 150                   |
| 7                     | 13,000.00 - 13,999.99 | 13,000.00          | 325                          | 162.5                 | 162.5                 |
| 8                     | 14,000.00 - 14,999.99 | 14,000.00          | 350                          | 175                   | 175                   |
| 9                     | 15,000.00 - 15,999.99 | 15,000.00          | 375                          | 187.5                 | 187.5                 |
| 10                    | 16,000.00 - 16,999.99 | 16,000.00          | 400                          | 200                   | 200                   |
| 11                    | 17,000.00 - 17,999.99 | 17,000.00          | 425                          | 212.5                 | 212.5                 |
| 12                    | 18,000.00 - 18,999.99 | 18,000.00          | 450                          | 225                   | 225                   |
| 13                    | 19,000.00 - 19,999.99 | 19,000.00          | 475                          | 237.5                 | 237.5                 |
| 14                    | 20,000.00 - 20,999.99 | 20,000.00          | 500                          | 250                   | 250                   |
| 15                    | 21,000.00 - 21,999.99 | 21,000.00          | 525                          | 262.5                 | 262.5                 |
| 16                    | 22,000.00 - 22,999.99 | 22,000.00          | 550                          | 275                   | 275                   |
| 17                    | 23,000.00 - 23,999.99 | 23,000.00          | 575                          | 287.5                 | 287.5                 |
| 18                    | 24,000.00 - 24,999.99 | 24,000.00          | 600                          | 300                   | 300                   |
| 19                    | 25,000.00 - 25,999.99 | 25,000.00          | 625                          | 312.5                 | 312.5                 |
| 20                    | 26,000.00 - 26,999.99 | 26,000.00          | 650                          | 325                   | 325                   |
| 21                    | 27,000.00 - 27,999.99 | 27,000.00          | 675                          | 337.5                 | 337.5                 |
| 22                    | 28,000.00 - 28,999.99 | 28,000.00          | 700                          | 350                   | 350                   |
| 23                    | 29,000.00 - 29,999.99 | 29,000.00          | 725                          | 362.5                 | 362.5                 |
| 24                    | 30,000.00 - 30,999.99 | 30,000.00          | 750                          | 375                   | 375                   |
| 25                    | 31,000.00 - 31,999.99 | 31,000.00          | 775                          | 387.5                 | 387.5                 |
| 26                    | 32,000.00 - 32,999.99 | 32,000.00          | 800                          | 400                   | 400                   |
| 27                    | 33,000.00 - 33,999.99 | 33,000.00          | 825                          | 412.5                 | 412.5                 |
| 28                    | 34,000.00 - 34,999.99 | 34,000.00          | 850                          | 425                   | 425                   |
| 29                    | 35,000.00 and up      | 35,000.00          | 875                          | 437.5                 | 437.5                 |

Source: PHIC website, 2013

Employee shares represent half of the total monthly premium while the employer shoulders the other half.

## APPENDIX B: FORMAL SECTOR POPULATION ESTIMATES

**Table 1. National Population Estimates**

|                    | <b>Total Population</b> | <b>Population 15 and Over</b> | <b>Population 15 and over that is employed</b> | <b>Non-Poor Population</b> | <b>Formal Private Sector Population</b> | <b>Formal Govt. Sector Population</b> |
|--------------------|-------------------------|-------------------------------|--|----------------------------|---|---------------------------------------|
| <b>Philippines</b> | 92337852                | 62060270                      | 36354906                                       | 22267380                   | <b>9049463</b>                          | <b>2654272</b>                        |

**Table 2. Regional Population Estimates**

| <b>Region</b>                 | <b>Total Population</b> | <b>Population 15 and Over</b> | <b>Population 15 and over that is employed</b> | <b>Non-Poor Population</b> | <b>Formal Private Sector Population</b> | <b>Formal Govt. Sector Population</b> |
|-------------------------------|-------------------------|-------------------------------|--|----------------------------|---|---------------------------------------|
| <b>I - Ilocos Region</b>      | 4748372                 | 3312939                       | 1764140  | 1165391                    | <b>397981</b>                           | <b>133321</b>                         |
| <b>II - Cagayan Valley</b>    | 3229163                 | 2221341                       | 1378120  | 898534                     | <b>254645</b>                           | <b>108453</b>                         |
| <b>III - Central Luzon</b>    | 10137737                | 7108581                       | 3805934  | 2511536                    | <b>1192226</b>                          | <b>248642</b>                         |
| <b>IVA - Calabarzon</b>       | 12609803                | 8766335                       | 4840770  | 3140692                    | <b>1594529</b>                          | <b>285489</b>                         |
| <b>IVB - Mimaropa</b>         | 2744671                 | 1708283                       | 1113801  | 723971                     | <b>215961</b>                           | <b>99039</b>                          |
| <b>V - Bicol Region</b>       | 5420411                 | 3374206                       | 2041057  | 1374652                    | <b>409646</b>                           | <b>160972</b>                         |
| <b>VI - Western Visayas</b>   | 7102438                 | 4855227                       | 2932557  | 1973904                    | <b>747123</b>                           | <b>204496</b>                         |
| <b>VII - Central Visayas</b>  | 6800180                 | 4613242                       | 2718584  | 1763817                    | <b>776432</b>                           | <b>200193</b>                         |
| <b>VIII - Eastern Visayas</b> | 4101322                 | 2621155                       | 1589731  | 1055422                    | <b>265544</b>                           | <b>158208</b>                         |

|                                 |          |         |         |         |                |               |
|---------------------------------|----------|---------|---------|---------|----------------|---------------|
| <b>IX - Zamboanga Peninsula</b> | 3407353  | 2190587 | 1419062 | 890603  | <b>261036</b>  | <b>129672</b> |
| <b>X - Northern Mindanao</b>    | 4297323  | 2852563 | 1860156 | 1193104 | <b>426177</b>  | <b>157609</b> |
| <b>XII - Davao</b>              | 4468563  | 2981872 | 1813276 | 1176635 | <b>544311</b>  | <b>117193</b> |
| <b>XII - Socksargen</b>         | 4109571  | 2691769 | 1685586 | 1086866 | <b>433442</b>  | <b>111947</b> |
| NCR                             | 11855975 | 8471094 | 4495610 | 3182892 | <b>1810429</b> | <b>289961</b> |
| CAR                             | 1616867  | 1093811 | 685273  | 414042  | <b>134522</b>  | <b>61320</b>  |
| ARMM                            | 3256140  | 2029878 | 1788598 | 1199076 | <b>69067</b>   | <b>102041</b> |
| Caraga                          | 2429224  | 1584826 | 942338  | 623639  | <b>191083</b>  | <b>82632</b>  |

**Table 3. Provincial Population Estimates (No Jackknife)**

| <b>Province</b>  | <b>Total Population</b> | <b>Population 15 and Over</b> | <b>Population 15 and over that is employed</b> | <b>Non-Poor Population</b> | <b>Formal Private Sector Population</b> | <b>Formal Govt. Sector Population</b> |
|------------------|-------------------------|-------------------------------|--|----------------------------|---|---------------------------------------|
| <b>REGION I</b>  |                         |                               |  |                            |   |                                       |
| Ilocos Norte     | 568017                  | 409370                        | 223148   | 157833                     | <b>49102</b>                            | <b>15831</b>                          |
| Ilocos Sur       | 658587                  | 465094                        | 273847   | 181643                     | <b>57962</b>                            | <b>26919</b>                          |
| La Union         | 741906                  | 518147                        | 297105   | 183254                     | <b>52924</b>                            | <b>18234</b>                          |
| Pangasinan       | 2779862                 | 1919495                       | 970497   | 642081                     | <b>237827</b>                           | <b>72684</b>                          |
| <b>REGION II</b> |                         |                               |  |                            |   |                                       |
| Batanes          | 16604                   | 8941                          | 7153   | 7153                       | <b>0</b>                                | <b>3321</b>                           |
| Cagayan          | 1124773                 | 789703                        | 488115   | 314639                     | <b>67647</b>                            | <b>44018</b>                          |
| Isabela          | 1489645                 | 1016981                       | 622392   | 364659                     | <b>124932</b>                           | <b>40769</b>                          |
| Nueva Vizcaya    | 421355                  | 287743                        | 172157   | 136848                     | <b>43737</b>                            | <b>10428</b>                          |
| Quirino          | 176786                  | 118853                        | 85931  | 72105                      | <b>19425</b>                            | <b>7903</b>                           |

| <b>REGION III</b>  |         |         |         |        |               |              |
|--------------------|---------|---------|---------|--------|---------------|--------------|
| Aurora             | 201233  | 131103  | 81310   | 45737  | <b>8132</b>   | <b>8132</b>  |
| Bataan             | 687482  | 471956  | 239518  | 192884 | <b>81243</b>  | <b>26136</b> |
| Bulacan            | 2924433 | 2072253 | 1117773 | 874769 | <b>459341</b> | <b>66570</b> |
| Nueva Ecija        | 1955373 | 1357616 | 820407  | 372875 | <b>144303</b> | <b>49108</b> |
| Pampanga           | 2340355 | 1671482 | 774565  | 612991 | <b>326173</b> | <b>48794</b> |
| Tarlac             | 1273240 | 892159  | 476056  | 265020 | <b>108579</b> | <b>31007</b> |
| Zambales           | 755621  | 506719  | 279404  | 157221 | <b>70073</b>  | <b>19763</b> |
| <b>REGION IVA</b>  |         |         |         |        |               |              |
| Batangas           | 2377395 | 1654429 | 935414  | 569667 | <b>268256</b> | <b>53264</b> |
| Cavite             | 3090691 | 2164720 | 1128685 | 946515 | <b>497488</b> | <b>93989</b> |
| Laguna             | 2669847 | 1880373 | 1036274 | 734407 | <b>386151</b> | <b>63012</b> |
| Quezon             | 1987030 | 1347604 | 866779  | 232904 | <b>86058</b>  | <b>24595</b> |
| Rizal              | 2484840 | 1722740 | 867744  | 678836 | <b>372206</b> | <b>52135</b> |
| <b>REGION IVB</b>  |         |         |         |        |               |              |
| <b>Marinduque</b>  | 227828  | 140889  | 88168   | 54840  | <b>13633</b>  | <b>9087</b>  |
| Occidental Mindoro | 452971  | 281386  | 182788  | 136908 | <b>54188</b>  | <b>16251</b> |
| Oriental Mindoro   | 785602  | 506478  | 322272  | 226686 | <b>67054</b>  | <b>28222</b> |
| Palawan            | 994340  | 611320  | 411052  | 258881 | <b>71244</b>  | <b>33189</b> |
| Romblon            | 283930  | 168541  | 111288  | 51382  | <b>12332</b>  | <b>11746</b> |
| <b>REGION V</b>    |         |         |         |        |               |              |
| Albay              | 1233432 | 805431  | 468600  | 333175 | <b>118444</b> | <b>42746</b> |
| Camarines Norte    | 542915  | 329658  | 204718  | 141542 | <b>49865</b>  | <b>12824</b> |
| Camarines Sur      | 1822371 | 1150827 | 660229  | 447437 | <b>148818</b> | <b>54364</b> |
| Catanduanes        | 246300  | 154676  | 107887  | 76362  | <b>13791</b>  | <b>11332</b> |
| Masbate            | 834650  | 460560  | 324925  | 190698 | <b>39112</b>  | <b>12548</b> |
| Sorsogon           | 740743  | 472890  | 275033  | 186500 | <b>44648</b>  | <b>26483</b> |

| <b>REGION VI</b>    |         |         |         |         |               |               |
|---------------------|---------|---------|---------|---------|---------------|---------------|
| Aklan               | 535725  | 378811  | 224408  | 107514  | <b>34383</b>  | <b>13127</b>  |
| Antique             | 546031  | 373267  | 217167  | 116467  | <b>21791</b>  | <b>15781</b>  |
| Capiz               | 719685  | 491833  | 321019  | 226350  | <b>71119</b>  | <b>20530</b>  |
| Guimaras            | 162943  | 105538  | 56009   | 50918   | <b>14812</b>  | <b>5555</b>   |
| Iloilo              | 4035771 | 2760871 | 1615662 | 1221602 | <b>478624</b> | <b>110555</b> |
| Negros Occidental   | 2907859 | 1981997 | 1234190 | 787783  | <b>334887</b> | <b>89256</b>  |
| <b>REGION VII</b>   |         |         |         |         |               |               |
| Bohol               | 1255128 | 837672  | 486604  | 267438  | <b>78252</b>  | <b>41801</b>  |
| Cebu                | 4167320 | 2824193 | 1638032 | 1219187 | <b>602400</b> | <b>109727</b> |
| Negros Oriental     | 1286666 | 883554  | 549129  | 251885  | <b>83777</b>  | <b>45944</b>  |
| Siquijor            | 91066   | 68063   | 46494   | 19174   | <b>7190</b>   | <b>3355</b>   |
| <b>REGION VIII</b>  |         |         |         |         |               |               |
| Biliran             | 161760  | 97460   | 57599   | 45670   | <b>7855</b>   | <b>9308</b>   |
| Eastern Samar       | 428877  | 263802  | 177380  | 104459  | <b>21707</b>  | <b>15157</b>  |
| Leyte               | 1789158 | 1191937 | 708726  | 499794  | <b>149388</b> | <b>59925</b>  |
| Northern Samar      | 589013  | 348519  | 203884  | 132912  | <b>12653</b>  | <b>30291</b>  |
| Samar (Western)     | 733377  | 452494  | 295841  | 177090  | <b>49160</b>  | <b>28334</b>  |
| Southern Leyte      | 399137  | 269018  | 145431  | 91069   | <b>23696</b>  | <b>14407</b>  |
| <b>REGION IX</b>    |         |         |         |         |               |               |
| Isabela City        | 97857   | 65134   | 33687   | 29197   | <b>7699</b>   | <b>7699</b>   |
| Zamboanga del Norte | 957997  | 598461  | 446213  | 218734  | <b>37972</b>  | <b>28479</b>  |
| Zamboanga del Sur   | 1766814 | 1157617 | 698506  | 495730  | <b>182478</b> | <b>70741</b>  |
| Zamboanga Sibugay   | 584685  | 370106  | 235572  | 149541  | <b>36503</b>  | <b>22506</b>  |
| <b>REGION X</b>     |         |         |         |         |               |               |
| Bukidnon            | 1299192 | 830833  | 620715  | 406630  | <b>161676</b> | <b>36393</b>  |
| Camiguin            | 83807   | 57014   | 41124   | 30218   | <b>5297</b>   | <b>3427</b>   |

|                    |         |         |        |        |               |              |
|--------------------|---------|---------|--------|--------|---------------|--------------|
| Lanao del Norte    | 932738  | 606280  | 388322 | 225071 | <b>65113</b>  | <b>35854</b> |
| Misamis Occidental | 567642  | 378050  | 225469 | 110660 | <b>36252</b>  | <b>17750</b> |
| Misamis Oriental   | 1415944 | 975869  | 602697 | 445152 | <b>175390</b> | <b>63212</b> |
| <b>REGION XI</b>   |         |         |        |        |               |              |
| Compostela Valley  | 687195  | 460008  | 281617 | 177954 | <b>75150</b>  | <b>11656</b> |
| Davao del Norte    | 945764  | 636499  | 382154 | 240107 | <b>123127</b> | <b>27468</b> |
| Davao del Sur      | 2317986 | 1558382 | 915549 | 662857 | <b>322944</b> | <b>66882</b> |
| Davao Oriental     | 517618  | 327704  | 233161 | 95806  | <b>24584</b>  | <b>11449</b> |
| <b>REGION XII</b>  |         |         |        |        |               |              |
| Cotabato City      | 271786  | 180901  | 88913  | 68472  | <b>27594</b>  | <b>15331</b> |
| North Cotabato     | 1226508 | 793919  | 519302 | 340402 | <b>117132</b> | <b>25905</b> |
| Sarangani          | 498904  | 309370  | 190819 | 99016  | <b>34844</b>  | <b>10624</b> |
| South Cotabato     | 1365286 | 909007  | 543586 | 388990 | <b>178469</b> | <b>44889</b> |
| Sultan Kudarat     | 747087  | 498830  | 339105 | 185084 | <b>66482</b>  | <b>17213</b> |
| <b>ARMM</b>        |         |         |        |        |               |              |
| Basilan            | 293322  | 188078  | 97274  | 63851  | <b>18957</b>  | <b>8977</b>  |
| Lanao del Sur      | 933260  | 501347  | 231823 | 150221 | <b>8773</b>   | <b>30495</b> |
| Maguindanao        | 1216504 | 789024  | 548845 | 312787 | <b>28557</b>  | <b>11886</b> |
| Sulu               | 718290  | 491526  | 241044 | 184953 | <b>814</b>    | <b>8082</b>  |
| Tawi-Tawi          | 366550  | 222496  | 140417 | 104400 | <b>459</b>    | <b>8665</b>  |
| <b>CARAGA</b>      |         |         |        |        |               |              |
| Agusan del Norte   | 632196  | 415542  | 237316 | 170915 | <b>72126</b>  | <b>16869</b> |
| Agusan del Sur     | 656418  | 414856  | 272602 | 171685 | <b>44844</b>  | <b>19864</b> |
| Surigao del Norte  | 442588  | 299057  | 161281 | 99849  | <b>18822</b>  | <b>24832</b> |
| Surigao del Sur    | 561219  | 363389  | 221340 | 147280 | <b>44155</b>  | <b>15391</b> |
| <b>CAR</b>         |         |         |        |        |               |              |
| Abra               | 234733  | 158163  | 98282  | 41947  | <b>9392</b>   | <b>7513</b>  |

|                     |         |         |         |         |               |               |
|---------------------|---------|---------|---------|---------|---------------|---------------|
| Apayao              | 112636  | 75680   | 50153   | 19991   | <b>3390</b>   | <b>6247</b>   |
| Benguet             | 516580  | 364809  | 198201  | 168233  | <b>75738</b>  | <b>18977</b>  |
| Ifugao              | 349923  | 229235  | 161198  | 84242   | <b>15795</b>  | <b>13369</b>  |
| Kalinga             | 201613  | 129436  | 87473   | 45302   | <b>8431</b>   | <b>10197</b>  |
| Mountain Province   | 154187  | 96398   | 82873   | 30099   | <b>2399</b>   | <b>2835</b>   |
| <b>NCR</b>          |         |         |         |         |               |               |
| First District NCR  | 1652171 | 1194520 | 627004  | 458215  | <b>248078</b> | <b>43026</b>  |
| Second District NCR | 4305772 | 3126852 | 1656919 | 1200106 | <b>674460</b> | <b>123251</b> |
| Third District NCR  | 3231168 | 2255355 | 1144818 | 676130  | <b>391276</b> | <b>60514</b>  |
| Fourth District NCR | 2666864 | 1890540 | 1037528 | 777835  | <b>453011</b> | <b>61449</b>  |

**Table 4. Provincial Population Estimates (Jackknife)**

| Province         | Population 15 and Over | Population 15 and over that is employed | Non-Poor Population | Formal Private Sector Population | Formal Govt. Sector Population |
|------------------|------------------------|---|---------------------|----------------------------------|--------------------------------|
| <b>REGION I</b>  |                        |   |                     |                                  |                                |
| Ilocos Norte     | 409313                 | 223280                                  | 157636              | <b>48930</b>                     | <b>15811</b>                   |
| Ilocos Sur       | 465160                 | 273979                                  | 181538              | <b>57983</b>                     | <b>26886</b>                   |
| La Union         | 518296                 | 295118                                  | 182855              | <b>53814</b>                     | <b>18231</b>                   |
| Pangasinan       | 1918383                | 968208                                  | 642116              | <b>237711</b>                    | <b>73651</b>                   |
| <b>REGION II</b> |                        |   |                     |                                  |                                |
| Batanes          | 8941                   | 7153                                    | 7153                | <b>0</b>                         | <b>3321</b>                    |
| Cagayan          | 790715                 | 487080                                  | 314897              | <b>67986</b>                     | <b>43928</b>                   |

|                    |         |         |        |               |              |
|--------------------|---------|---------|--------|---------------|--------------|
| Isabela            | 1016683 | 620583  | 364717 | <b>124697</b> | <b>41395</b> |
| Nueva Vizcaya      | 287743  | 171869  | 136653 | <b>43975</b>  | <b>10249</b> |
| Quirino            | 118376  | 85763   | 71158  | <b>19156</b>  | <b>7685</b>  |
| <b>REGION III</b>  |         |         |        |               |              |
| Aurora             | 131345  | 81434   | 46377  | <b>8269</b>   | <b>8371</b>  |
| Bataan             | 474500  | 240334  | 192916 | <b>83475</b>  | <b>26102</b> |
| Bulacan            | 2066989 | 1102325 | 867420 | <b>452620</b> | <b>65837</b> |
| Nueva Ecija        | 1356247 | 819038  | 373727 | <b>144445</b> | <b>48472</b> |
| Pampanga           | 1674992 | 780044  | 618341 | <b>328215</b> | <b>49529</b> |
| Tarlac             | 890504  | 474282  | 264412 | <b>109017</b> | <b>32073</b> |
| Zambales           | 506417  | 280707  | 156017 | <b>69958</b>  | <b>18410</b> |
| <b>REGION IVA</b>  |         |         |        |               |              |
| Batangas           | 1655380 | 934793  | 567700 | <b>267273</b> | <b>53932</b> |
| Cavite             | 2167193 | 1130841 | 948663 | <b>498048</b> | <b>94013</b> |
| Laguna             | 1885713 | 1029222 | 737232 | <b>390954</b> | <b>61411</b> |
| Quezon             | 1349392 | 863476  | 237197 | <b>87502</b>  | <b>25190</b> |
| Rizal              | 1724479 | 870862  | 687981 | <b>380935</b> | <b>52906</b> |
| <b>REGION IVB</b>  |         |         |        |               |              |
| Marinduque         | 140889  | 88070   | 55202  | <b>13442</b>  | <b>9175</b>  |
| Occidental Mindoro | 280933  | 181707  | 135299 | <b>53957</b>  | <b>16114</b> |
| Oriental Mindoro   | 502550  | 321330  | 223838 | <b>65808</b>  | <b>27196</b> |
| Palawan            | 614403  | 409561  | 259744 | <b>72313</b>  | <b>33845</b> |
| Romblon            | 168427  | 111010  | 51298  | <b>12445</b>  | <b>11573</b> |
| <b>REGION V</b>    |         |         |        |               |              |

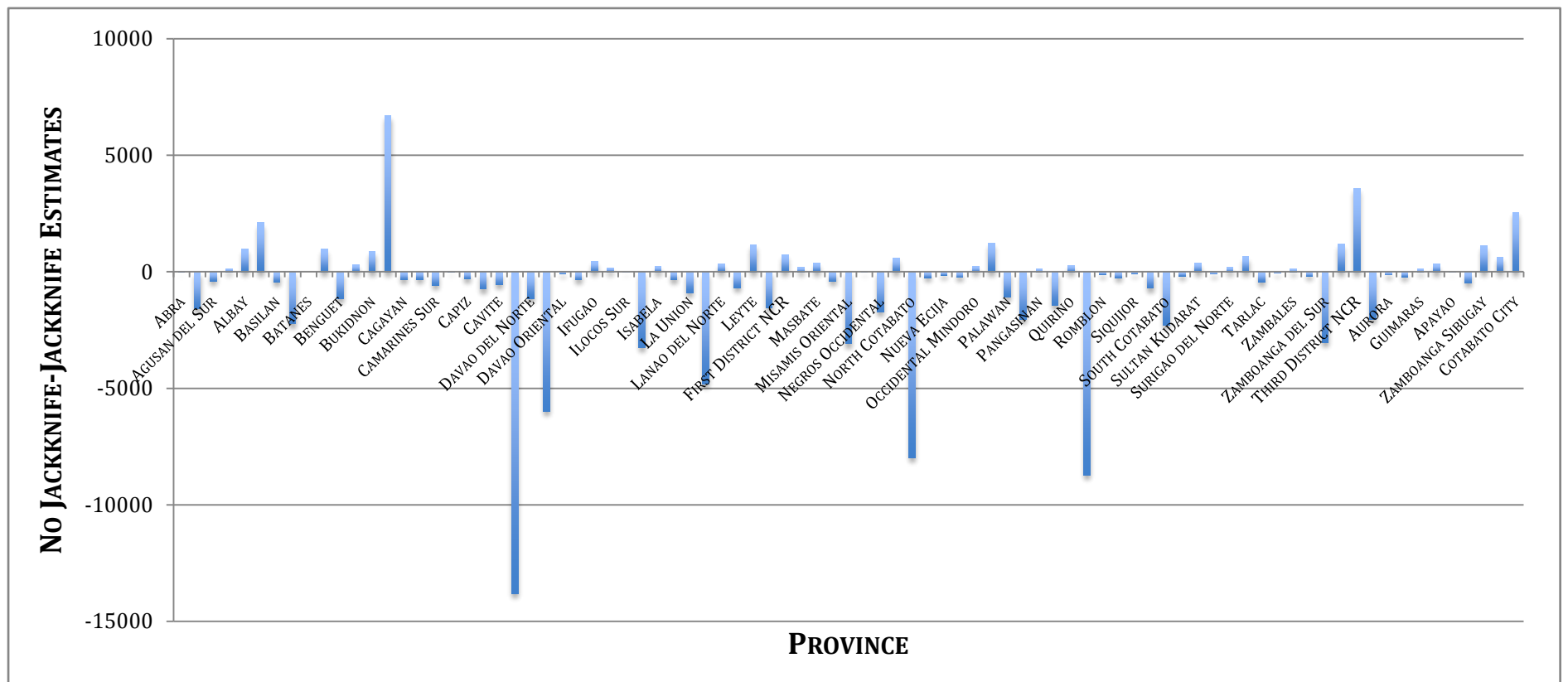


|                    |         |         |         |               |               |
|--------------------|---------|---------|---------|---------------|---------------|
| Albay              | 807035  | 469210  | 333796  | <b>117463</b> | <b>43594</b>  |
| Camarines Norte    | 329115  | 204578  | 141118  | <b>50182</b>  | <b>12658</b>  |
| Camarines Sur      | 1152832 | 658959  | 446642  | <b>149402</b> | <b>54892</b>  |
| Catanduanes        | 154085  | 107690  | 76805   | <b>14532</b>  | <b>11283</b>  |
| Masbate            | 460810  | 324456  | 188866  | <b>38736</b>  | <b>12541</b>  |
| Sorsogon           | 472520  | 274959  | 186642  | <b>45354</b>  | <b>26484</b>  |
| <b>REGION VI</b>   |         |         |         |               |               |
| Aklan              | 378811  | 224521  | 106760  | <b>34249</b>  | <b>12961</b>  |
| Antique            | 371956  | 198662  | 106364  | <b>19688</b>  | <b>14614</b>  |
| Capiz              | 490969  | 320799  | 226003  | <b>71417</b>  | <b>20589</b>  |
| Guimaras           | 105978  | 55681   | 50831   | <b>14700</b>  | <b>5393</b>   |
| Iloilo             | 2764100 | 1614511 | 1224929 | <b>481887</b> | <b>113183</b> |
| Negros Occidental  | 1988394 | 1239366 | 786130  | <b>336621</b> | <b>88047</b>  |
| <b>REGION VII</b>  |         |         |         |               |               |
| Bohol              | 834409  | 484208  | 264329  | <b>77951</b>  | <b>40760</b>  |
| Cebu               | 2835445 | 1640021 | 1230672 | <b>616197</b> | <b>109161</b> |
| Negros Oriental    | 884969  | 548858  | 252914  | <b>83183</b>  | <b>46536</b>  |
| Siquijor           | 68163   | 46992   | 19661   | <b>7265</b>   | <b>3248</b>   |
| <b>REGION VIII</b> |         |         |         |               |               |
| Biliran            | 97363   | 57600   | 45660   | <b>8068</b>   | <b>9182</b>   |
| Eastern Samar      | 264060  | 177580  | 105980  | <b>22054</b>  | <b>15346</b>  |
| Leyte              | 1180665 | 702968  | 491937  | <b>148221</b> | <b>58491</b>  |
| Northern Samar     | 347400  | 203576  | 134503  | <b>12899</b>  | <b>30828</b>  |
| Samar (Western)    | 452787  | 295534  | 177261  | <b>49420</b>  | <b>28326</b>  |

|                     |         |        |        |               |              |
|---------------------|---------|--------|--------|---------------|--------------|
| Southern Leyte      | 268859  | 145023 | 91321  | <b>23871</b>  | <b>14675</b> |
| <b>REGION IX</b>    |         |        |        |               |              |
| Isabela City        | 64654   | 33180  | 28873  | <b>7068</b>   | <b>7426</b>  |
| Zamboanga del Norte | 599227  | 446184 | 217158 | <b>38155</b>  | <b>27905</b> |
| Zamboanga del Sur   | 1159383 | 700499 | 497634 | <b>185518</b> | <b>69669</b> |
| Zamboanga Sibugay   | 369462  | 232872 | 144567 | <b>35390</b>  | <b>21772</b> |
| <b>REGION X</b>     |         |        |        |               |              |
| Bukidnon            | 829014  | 619771 | 404525 | <b>160799</b> | <b>36731</b> |
| Camiguin            | 56980   | 41197  | 30366  | <b>5262</b>   | <b>3471</b>  |
| Lanao del Norte     | 604787  | 386822 | 223931 | <b>64761</b>  | <b>35941</b> |
| Misamis Occidental  | 378333  | 224995 | 111755 | <b>36667</b>  | <b>18071</b> |
| Misamis Oriental    | 976577  | 603427 | 446536 | <b>178480</b> | <b>62604</b> |
| <b>REGION XI</b>    |         |        |        |               |              |
| Compostela Valley   | 460283  | 281923 | 177950 | <b>75629</b>  | <b>11389</b> |
| Davao del Norte     | 638580  | 381168 | 243871 | <b>124277</b> | <b>28923</b> |
| Davao del Sur       | 1566959 | 914164 | 673647 | <b>328942</b> | <b>68375</b> |
| Davao Oriental      | 327911  | 232063 | 94612  | <b>24665</b>  | <b>11051</b> |
| <b>REFION XII</b>   |         |        |        |               |              |
| Cotabato City       | 178808  | 83950  | 64902  | <b>25052</b>  | <b>14175</b> |
| North Cotabato      | 795758  | 518914 | 343417 | <b>125107</b> | <b>26443</b> |
| Sarangani           | 309221  | 192305 | 99095  | <b>34515</b>  | <b>10445</b> |
| South Cotabato      | 917199  | 545642 | 400610 | <b>180755</b> | <b>48754</b> |
| Sultan Kudarat      | 499353  | 339510 | 185339 | <b>66110</b>  | <b>16959</b> |
| <b>ARMM</b>         |         |        |        |               |              |

|                     |         |         |         |               |               |
|---------------------|---------|---------|---------|---------------|---------------|
| Basilan             | 188577  | 99003   | 65352   | <b>19390</b>  | <b>9522</b>   |
| Lanao del Sur       | 505267  | 232120  | 153292  | <b>9458</b>   | <b>32437</b>  |
| Maguindanao         | 793526  | 543327  | 309588  | <b>30092</b>  | <b>13065</b>  |
| Sulu                | 492675  | 239588  | 182638  | <b>913</b>    | <b>8968</b>   |
| Tawi-Tawi           | 223046  | 141723  | 105853  | <b>519</b>    | <b>9167</b>   |
| <b>CARAGA</b>       |         |         |         |               |               |
| Agusan del Norte    | 415353  | 236170  | 172522  | <b>73701</b>  | <b>17028</b>  |
| Agusan del Sur      | 414134  | 271051  | 170085  | <b>45243</b>  | <b>19696</b>  |
| Surigao del Norte   | 299809  | 160548  | 99877   | <b>18627</b>  | <b>26068</b>  |
| Surigao del Sur     | 364736  | 220775  | 147124  | <b>43505</b>  | <b>15183</b>  |
| <b>CAR</b>          |         |         |         |               |               |
| Abra                | 158093  | 98033   | 41899   | <b>9377</b>   | <b>7458</b>   |
| Apayao              | 75714   | 50130   | 19962   | <b>3386</b>   | <b>6300</b>   |
| Benguet             | 364964  | 198212  | 170046  | <b>76895</b>  | <b>19589</b>  |
| Ifugao              | 228675  | 160438  | 83412   | <b>15356</b>  | <b>13454</b>  |
| Kalinga             | 129315  | 87339   | 45836   | <b>8773</b>   | <b>10217</b>  |
| Mountain Province   | 96351   | 82563   | 30045   | <b>2428</b>   | <b>2812</b>   |
| <b>NCR</b>          |         |         |         |               |               |
| First District NCR  | 1192207 | 627339  | 458961  | <b>247334</b> | <b>42041</b>  |
| Second District NCR | 3109629 | 1663341 | 1197107 | <b>673253</b> | <b>118035</b> |
| Third District NCR  | 2248247 | 1142334 | 677061  | <b>387685</b> | <b>63305</b>  |
| Fourth District NCR | 1893473 | 1041410 | 781995  | <b>455043</b> | <b>60917</b>  |

**Graph 1. Difference in Provincial Population Estimates for Formal Private Sector (No Jackknife vs. Jackknife)**



**Graph 2. Difference in Provincial Population Estimates for Formal Government Sector (No Jackknife vs. Jackknife)**

