



PHILIPPINES

SELECTED ISSUES

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PHILIPPINES

SELECTED ISSUES

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Approved By
**Asia and Pacific
Department**

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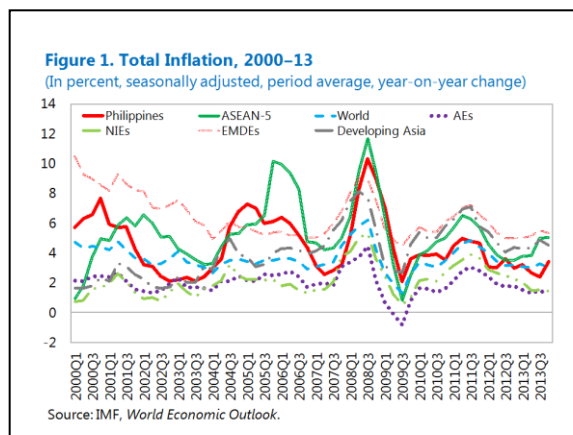
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PHILIPPINE INFLATION: HOME GROWN OR IMPORTED?¹

A. Introduction

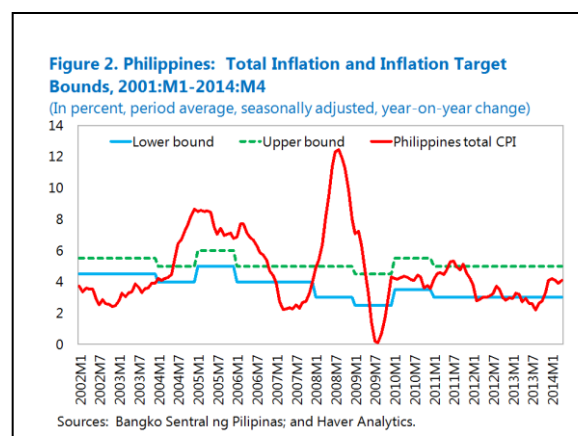
1. With the exception of the global financial crisis (GFC), world inflation has generally remained low since 2000. In addition, cross-sectional variation in inflation across different regions and types of economies has declined noticeably in recent years (Figure 1). In the Philippines, inflation has also moderated despite strong GDP growth and high capacity utilization rates, and has been closely tracking world inflation. To what extent does the Philippines' inflation performance reflect domestic macroeconomic conditions and policies, or is it mainly determined by global developments? This chapter addresses this question by applying a latent factor model to the inflation rates of 62 countries to identify the global common drivers of inflation and their importance for individual countries. Taking into account these findings, the paper also adopts a more standard single-country, single-equation model to assess the drivers of Philippines' inflation.
2. We find that global common factors account for about 60 percent of the variation in Philippine inflation (about the average for the country sample), with country-specific effects explaining the remainder. From the single equation model we find that exchange rate pass-through, world commodity prices and the output gap, together with lagged own inflation explain most of the Philippines' inflation.
3. The paper is organized as follows. The following section discusses inflation developments and the monetary policy framework in the Philippines. Section 3 employs a global latent factor model to decompose inflation into common drivers and idiosyncratic factors for a sample of 62 countries. Based on these results, it then models inflation in different regions. Section 4 presents the single-country, single equation model and conducts out of sample forecasts to determine consistency with the medium-term inflation target.



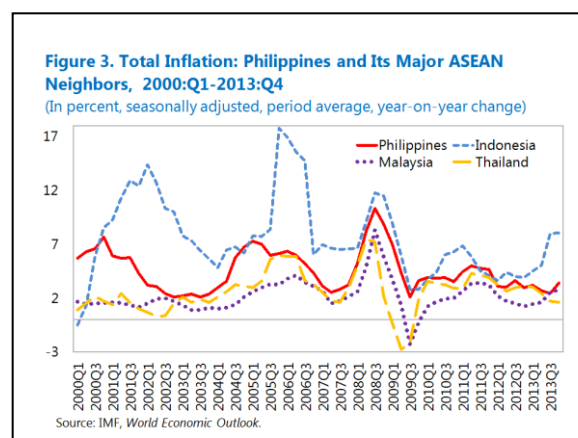
¹ Prepared by Huaizhu Xie.

B. Philippines: Inflation Developments and the Monetary Policy Framework

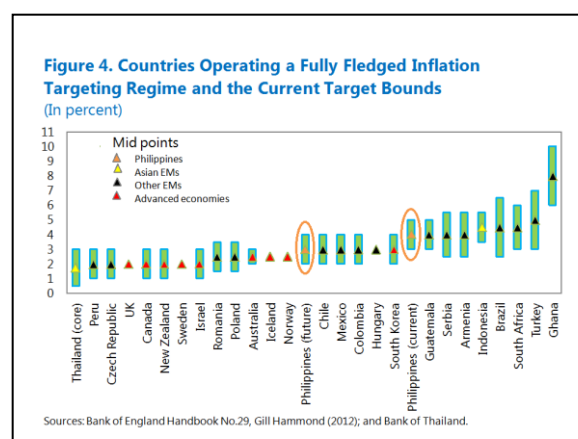
4. Since the adoption of an inflation targeting framework in January 2002, Philippines' inflation has averaged 4.3 percent, considerably lower than the 9.2 percent during the 1990s. Nonetheless, for much of the period, inflation was outside the target band, although deviations have narrowed since the GFC, partly reflecting modest periodic adjustments to the inflation target bands. During 2012–13, inflation tended to lie near the bottom of the target band (4 ± 1 percent) (Figure 2).



5. However, headline inflation picked up to 4.1 percent in December and reached 4.5 percent in May 2014, on typhoon-related food supply disruptions, reversal of the peso from previous appreciation to depreciation, higher administered rice prices, and accommodative monetary conditions. Among the Philippines' near-neighbors, inflation increased very strongly in Indonesia, by somewhat less in Malaysia, but moderated in Thailand (Figure 3).



6. From January 2015, the BSP will lower the midpoint of the target band to 3 percent, while keeping constant the width at ± 1 percent. This will align the Philippines' inflation target band closer to those of other advanced emerging markets (Figure 4), helping to limit real appreciation due to persistent inflation differentials. It is therefore important to determine the drivers of inflation and whether the new lower target can be achieved without compromising GDP growth.



7. Since January 2002, the Philippines has conducted monetary policy under an inflation targeting framework. This is consistent with the primary objective of the Bangko Sentral ng Pilipinas (BSP) "to promote price stability conducive to a balanced and sustainable growth of the economy." The seven-member Monetary Policy Board is the decision-making body that sets key policy interest rates and other monetary policy instruments (including reserve requirements).

The BSP immediately announces its policy decisions, publishes the minutes of the meetings with a four-week lag, and prepares a quarterly inflation report.

C. Common-Factors Analysis of Global Inflation

8. From Figures 1 and 3, it is apparent that inflation across different countries and regions has become more synchronized, especially since the GFC. A common factors model (CFM) can be used to identify the *unobserved common factors* that explain the *observed comovement of inflation*. In essence, factor models transform a large number of covarying series into a smaller number of orthogonal series (sequences of common factors) in such a way that each successive factor explains as much as possible of the remaining variation in the observed series. These observed series can therefore be expressed as the weighted sum of the common factors (the common-origin component), plus an idiosyncratic disturbance term, which is uncorrelated with the common-origin component and, hence, is country specific.
9. Common factor (also referred to principal component) models are widely used when the number of series is large relative to the time dimension of the data, a situation that standard estimation techniques cannot handle.² This reflects that CFMs account for the variation in the large number of observed series by identifying a small number of common factors. For example, Sargent and Sims (1977) found that just two dynamic factors could explain a large fraction of the variance of U.S. quarterly macroeconomic variables, including output, employment, and prices. Similarly, Stock and Watson (1989) concluded that one factor was sufficient to model the comovements of major macroeconomic aggregates.
10. More recently, CFMs have been employed to analyze the behavior of international asset prices and inflation. For example, Choueiri and others (2008) decompose inflation in the EU-25 countries into common-origin and idiosyncratic components, with the aim of exploring the determinants of cross country differences in the role of common-origin inflation. Ciccarelli and Mojon (2010) investigate CPI inflation rates in 22 OECD countries using a similar strategy.

Data and Methodology of Common Factor Inflation Model

11. Our dataset covers quarterly inflation in 62 countries (see Appendix 1) and spans the period 2000:Q1 to 2013:Q3. Inflation is measured as the year-on-year percent change in the quarterly average of headline CPI. Data are seasonally adjusted and standardized by subtracting their means and dividing by their standard deviations.
12. The econometric methodology we employ entails five steps: (i) factor representation of the data; (ii) identification and estimation of the common factors; (iii) determination of the number

²For example, ordinary least squares (OLS) estimators are consistent only under the assumption that N/T (where N is the number of time series and T the number of observations) converges asymptotically to zero.

of common factors; (iv) estimation of loading vectors that indicate the individual country's responsiveness to each common factor; and (v) variance decomposition for each country.

Factor Representation

13. The cross country inflation can be represented in factor form as follows:

$$\begin{aligned} \begin{bmatrix} \pi_{1,t} \\ \pi_{2,t} \\ \vdots \\ \pi_{N,t} \end{bmatrix} - \begin{bmatrix} \bar{\pi}_{1,t} \\ \bar{\pi}_{2,t} \\ \vdots \\ \bar{\pi}_{N,t} \end{bmatrix} &= \begin{bmatrix} \beta_{1,1} & \beta_{1,2} & \cdots & \beta_{1,K} \\ \beta_{2,1} & \beta_{2,2} & \cdots & \beta_{2,K} \\ \vdots & \vdots & \ddots & \vdots \\ \beta_{N,1} & \beta_{N,2} & \cdots & \beta_{N,K} \end{bmatrix} \begin{bmatrix} f_{1,t} \\ f_{2,t} \\ \vdots \\ f_{K,t} \end{bmatrix} + \begin{bmatrix} e_{1,t} \\ e_{2,t} \\ \vdots \\ e_{N,t} \end{bmatrix} \\ &= \beta_1 f_{1,t} + \beta_2 f_{2,t} + \cdots + \beta_K f_{K,t} + e_t \\ \pi_t - \bar{\pi}_t &= \beta f_t + e_t \end{aligned} \quad (1)$$

The expressions in (1) show that for each country i demeaned total inflation, $\pi_{i,t} - \bar{\pi}_{i,t}$, can be decomposed into a common component (βf_t) and an idiosyncratic component (e_t), where f is a $(K \times 1)$ vector of latent (unobserved) factors, β is an $(N \times K)$ matrix, representing the loading coefficients, or weight of each common factor in each country's inflation.

Estimation and Selection of Common Factors

14. Following Bai and Ng (2013) and Stock and Watson (2002), we estimate the static common factors in the panel by the method of asymptotic principal components. In addition to standard assumptions, identification of the common factors relies on the assumption that the factors are orthogonal to the idiosyncratic terms:

$$E[e_t] = 0, E[e_t e_t'] = \Omega, E[f_t f_t'] = I, E[f_t e_t'] = 0$$

Extraction of the factors and their loadings is achieved by:

$$\hat{f}_t = (\hat{\beta}' \hat{\Omega} \hat{\beta})^{-1} \hat{\beta}' \hat{\Omega}^{-1} (\pi_t - \hat{\pi}_t)$$

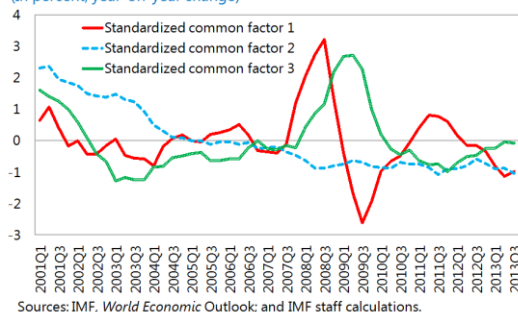
15. This methodology extracts multiple, ordered common factors, with each successive factor explaining less of the aggregate variance.³ The first common factor is found to explain 34 percent of the total variability of total inflation across the full sample of countries, with the

³ In technical terms, the number of common factors generated is equal to the number of time series; the common factors are the eigenvectors of equation (1) above; and the eigenvalue corresponding to each eigenvector indicates the marginal variance explained by that common factor.

second and third common factors explaining 18 percent and 10 percent, respectively. An information criterion that utilizes this property of diminishing explanatory power is used to identify the appropriate number of common factors that adequately describe the common-origin variance in the data. Intuitively, there is a trade-off between the benefit of including an additional factor in terms of increasing explanatory power and the cost of increased sampling error from estimating an additional parameter. Using the Bai and Ng (2002) criterion, the first three common factors—which collectively explain 62 percent of the variability of headline inflation—is found to be appropriate. Figure 5 shows the first three common factors extracted from the global inflation dataset.

Figure 5. Estimation of Three Latent Common Factors, 2001:Q1-2013:Q3

(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

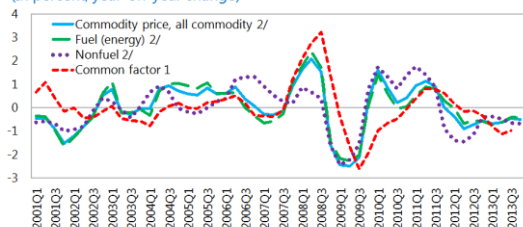
Factor Identification: What are the Common Factors for Global Inflation?

16. As noted, these common factors are unobservable statistical constructs. Therefore, to increase the usefulness of this approach, we investigate whether they can be associated with actual economic variables that theory suggests might influence global inflation:

- Common factor 1 appears to fit well the behavior of global aggregate commodity prices, measured in U.S. dollars (Figure 6). The “fit” is especially strong since 2006, corresponding to a period with large swings in the prices of food and fuel.
- Common factor-2 displays a downward movement during 2001–07, with stabilization thereafter. This pattern mirrors the decline in inflation that occurred across emerging market economies as they continued to stabilize following their transition from central planning to free markets or recover from widespread emerging market crises in the previous decade (Figure 7). This factor is therefore consistent with the “great moderation” in inflation.

Figure 6. Common Factor-1 Analysis: The Possible Explanatory Variables, 2001:Q1-2013:Q3 1/

(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

1/ Data are standardized by subtracting the sample mean and dividing by sample standard deviation to ensure that high-variance series do not dominate results.
2/ All commodity price index, 2005=100, includes fuel and nonfuel price indices; nonfuel price index, 2005=100, includes food and beverages and industrial inputs price index; fuel (energy), 2005=100, includes crude oil (petroleum), natural gas, and coal price indices.

Figure 7. Common Factor-2 Analysis: The Possible Explanatory Variables, 2001:Q1-2013:Q3

(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

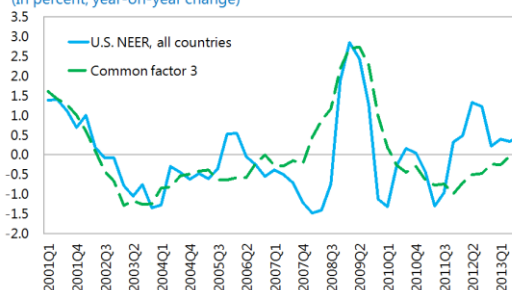
- Common factor-3 can be associated with developments in the nominal effective exchange rate of the U.S. dollar (Figure 8). This is consistent with the fact that the U.S. dollar is the numeraire for much of international trade, and that shifts in its NEER are passed through to local prices.

Loading Vectors

- The importance of a specific common factor for inflation can vary by country. This sensitivity is given by the loading vectors or weights which, in this model, are assumed to be static (i.e., constant over the entire period) and loaded contemporaneously. A higher loading indicates that the country's inflation is influenced more heavily by that common factor. Loadings may also be negative. Differences in inflation across countries may therefore reflect not only country-specific factors, but differences in the loadings of common factors. Loadings may differ across countries for various reasons: the weight of food and fuel—both direct and indirect—in the consumption basket varies considerably across countries. In addition, responsiveness of domestic prices to world prices depends on the degree of competition in the domestic market, the existence of price-smoothing policies (e.g., subsidies or buffer stocks), the rigidities in labor markets that can amplify commodity price shocks, and the willingness of policymakers to dampen the price effects and the corresponding effectiveness of such policies.

- Figure 9 reports the loading for each country for the first common factor. For nearly all countries, the loading is positive—as would be expected.
- For the Philippines, with its relatively high weight of fuel and food in the CPI basket (Figure 10), the loading is a relatively high 0.667.

Figure 8. Common Factor-3 Analysis: The Possible Explanatory Variables, 2001:Q1-2013:Q3
(In percent, year-on-year change)



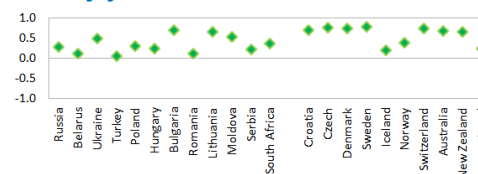
Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

Figure 9. Loading Coefficients of Factor-1

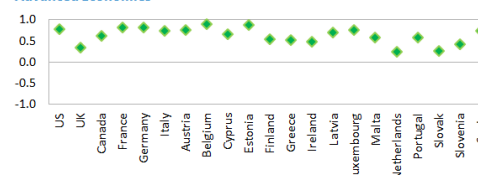
Asia and America Emerging Markets



Other Emerging Markets

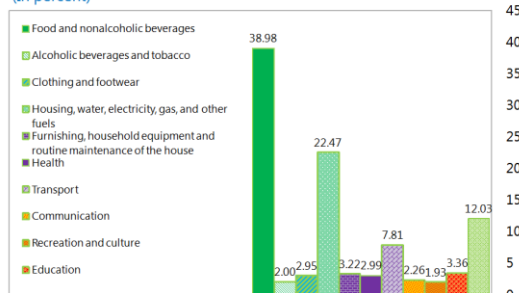


Advanced Economies



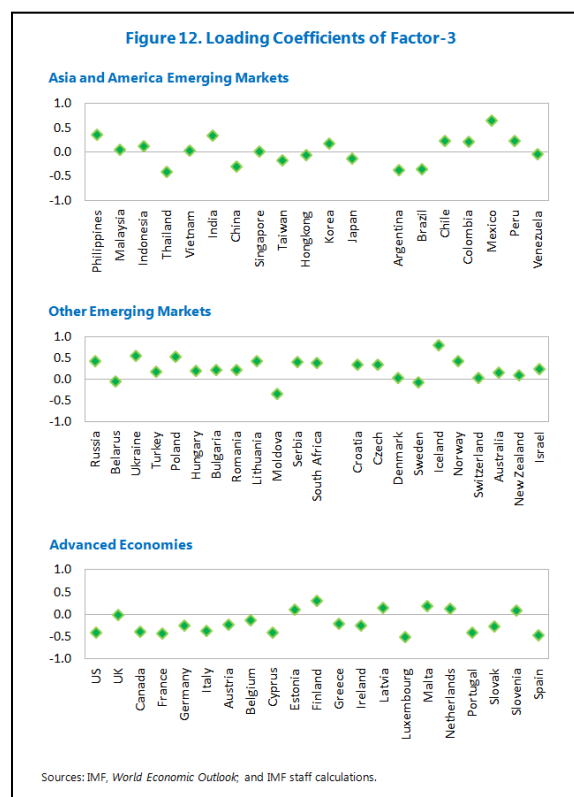
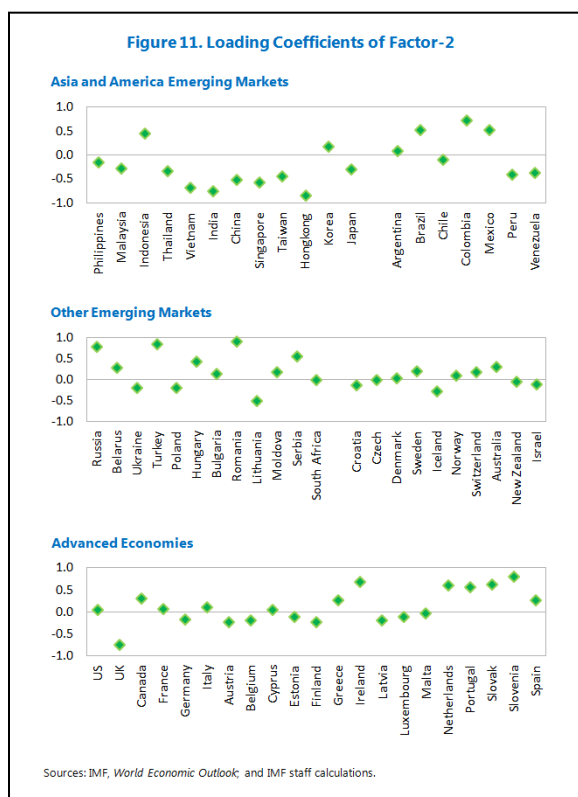
Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

Figure 10. Philippines: CPI Basket, 2013
(In percent)



2013
Source: Philippines, National Statistics Office.

- For the second common factor (“great moderation”), there is considerably more variation in loadings across countries (Figure 11). The loadings tend to be large for CIS, CEE and Latin American countries, capturing the substantial disinflation these countries achieved during the 2000s. Meanwhile, loadings tend to be small for most advanced economies. For Asia, negative loadings may reflect cost-push price pressures within regional supply chains. Consistent with other Asian countries, the loading for the Philippines is negative, though fairly small.
- For the third common factor (U.S. dollar nominal effective exchange rate), loadings reflect the net effect of how the local currency reacts to a change in the U.S. dollar NEER and the pass-through to inflation of the change in the local currency (Figure 12). For example, loadings for emerging market countries tend to be positive, suggesting that their currencies weaken in response to U.S. dollar appreciation, which is then fed through to domestic prices.⁴ The loading for the Philippines is positive and relatively large.



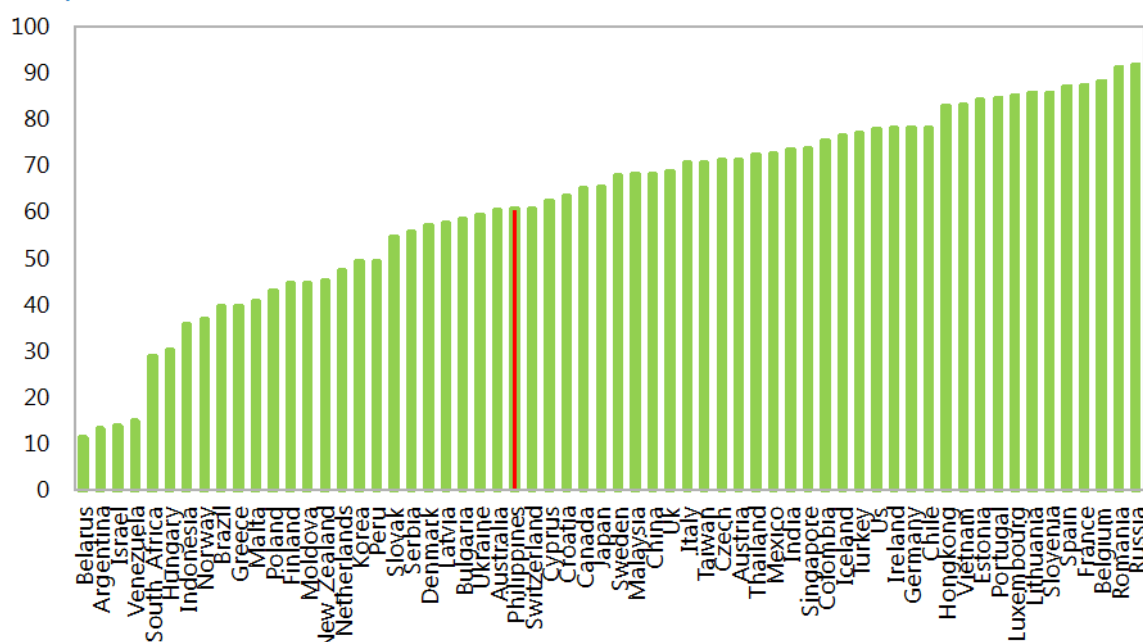
⁴ Note that the loading for the United States itself is negative, consistent with U.S. dollar NEER appreciation contributing to lower prices for imported goods.

Variance Decomposition

18. As noted earlier, the first three common factors explain 62 percent of the total variability in global inflation. However, the explanatory ability of the common factors will vary across individual countries, depending on the importance of country specific shocks (Figure 13). At the upper end, common shocks account for around 90 percent of headline inflation variability, while at the low end, common factors explain little more than 10 percent of inflation variability. For the Philippines, common components account for 60.7 percent of headline inflation, with the remaining 39.3 percent therefore attributable to idiosyncratic disturbances.

Figure 13. Variability of Total Inflation Explained by the Common Factors

(In percent)



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

19. Combining the common factors and their country-specific loadings, one can construct the level of common-origin inflation and derive idiosyncratic inflation for each country. This is shown in Figures 14–16 for the Philippines, and in Figures 17–20 for the ASEAN-5 countries. Common factors capture very well inflation developments in the Philippines, Malaysia, Thailand and Singapore. However, in Indonesia, common factors only explain 36 percent of inflation variability, against 61–73 percent for the other ASEAN-5. This reflects low explanatory capacity of common factors for Indonesian inflation during two episodes—late 2005–early 2006 and since mid 2013—corresponding to periods when energy price subsidies were significantly lowered. Nonetheless, common-origin inflations are very similar across the ASEAN-5 (Figure 21).

Figure 14. Philippines: Total CPI and Three Common Factors, 2001:Q1–2013:Q3
(In percent, year-on-year change)

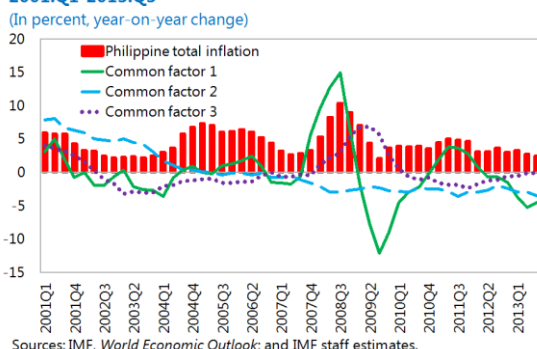


Figure 15. Philippines: Actual Total Inflation and Common-Origin Inflation, 2001:Q1–2013:Q3
(In percent, year-on-year change)

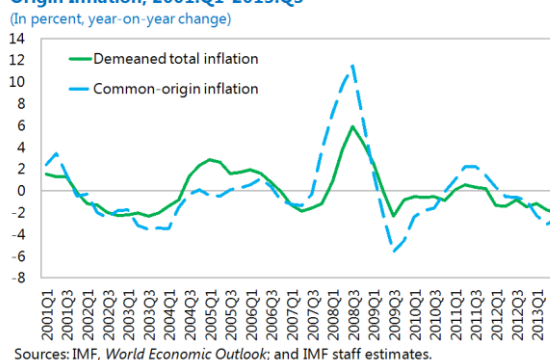


Figure 16. Philippines: Actual Total Inflation and Idiosyncratic Inflation, 2001:Q1–2013:Q3
(In percent, year-on-year change)

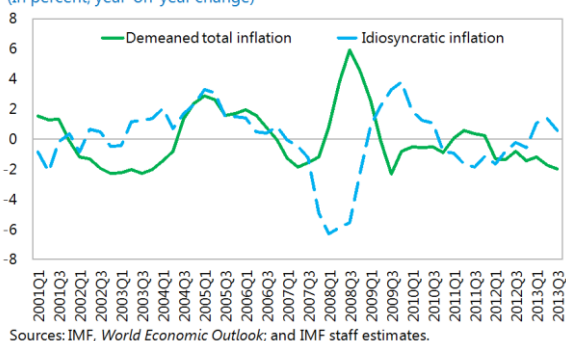


Figure 17. Malaysia: Actual Inflation and Common-Origin Inflation, 2001:Q1–2013:Q3
(In percent, year-on-year change)

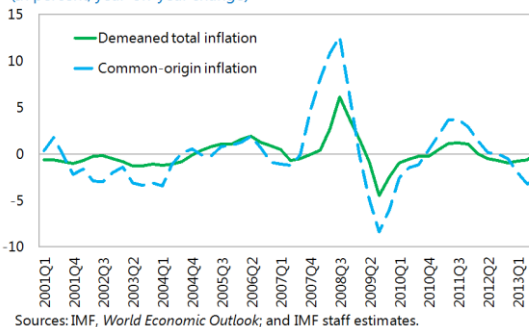
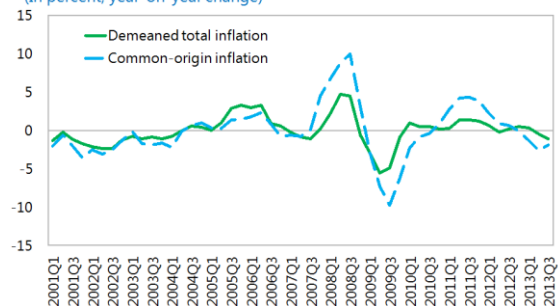


Figure 18. Thailand: Actual Inflation and Common-Origin Inflation, 2001:Q1-2013:Q3

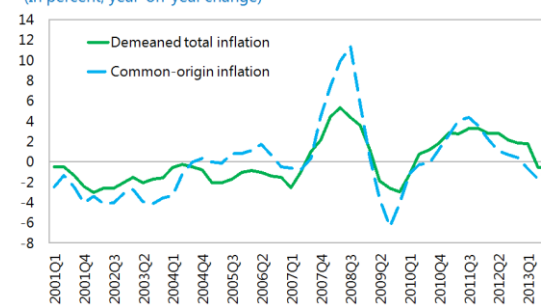
(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

Figure 19. Singapore: Actual Inflation and Common-Origin Inflation, 2001:Q1-2013:Q3

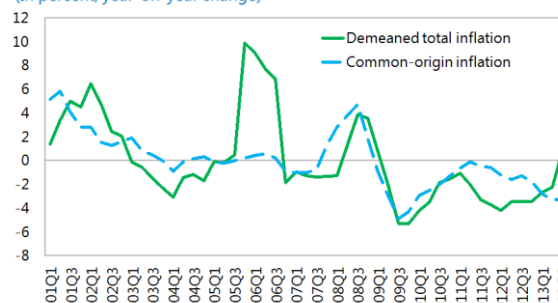
(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

Figure 20. Indonesia: Actual Inflation and Common-Origin Inflation, 2001:Q1-2013:Q3

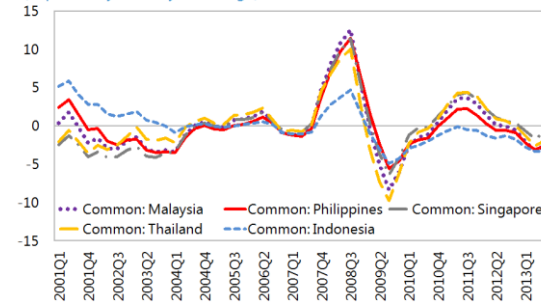
(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

Figure 21. ASEAN-5: Common-Origin Inflation, 2001:Q1-2013:Q3

(In percent, year-on-year change)



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

Idiosyncratic Inflation in the Philippines

20. From Figure 16, we find that idiosyncratic shocks have, on occasion, caused sizable deviations—both positive and negative—of common-origin inflation from total inflation in the Philippines. These country-specific factors were largest during the onset and immediate aftermath of the global financial crisis, when idiosyncratic factors initially pulled down inflation but later contributed to reflation. Thereafter, idiosyncratic inflation moderated and turned negative from late 2010–early 2013, but then turned positive.

D. Modeling Inflation in the Philippines: a Single-Country, Single Equation Approach

Phillips Curve Estimation

21. The common factors modeling of inflation suggests that inflation in the Philippines depends on world commodity price developments and movements in the U.S. dollar effective exchange rate. However, theory suggests that domestic cyclical conditions also matter. We assess the importance of these variables by estimating a Phillips curve augmented by world commodity prices and the nominal exchange rate for the period 2000–2013.⁵
22. The dependent variable is defined as the quarter-on-quarter percent change in headline CPI. The independent variables encompass: (i) lagged values of inflation to capture persistence; (ii) the one quarter lagged value of the output gap as a measure of cyclical conditions; and (iii) contemporaneous and lagged values of changes in global food and fuel prices (consistent with the large weight of these items in the CPI basket; and (iv) the nominal exchange rate. The impact of monetary and fiscal policies is therefore captured indirectly through their effect on the output gap. The inflation persistence term is included to capture explicit and de facto indexation of wages to inflation.

Model Specification

$$\pi_t^{headline} = \alpha + \sum_{i=1}^{p1} \beta_i \pi_{t-i}^{headline} + \gamma_i GDPgap_{t-1} + \sum_{i=0}^{p2} \delta_i \pi_{t-i}^{world\ food\ in\ USD} + \sum_{i=0}^{p3} \varphi_i \pi_{t-i}^{world\ fuel\ in\ USD} + \sum_{i=0}^{p4} \omega_i ER_{t-i}^{PESO/USD} + \varepsilon_t \quad (2)$$

23. Global commodity prices are expressed in U.S. dollars and the bilateral exchange rate is denoted as number of pesos per U.S. dollar (i.e., an increase is a depreciation).⁶

⁵ The estimation period is taken to begin in 2000, when the BSP adopted quasi inflation targeting, before it moved to formal inflation targeting in 2002. In this section, we ignore the impact of the great moderation of global inflation, which may be addressed through coefficient stability analysis.

⁶ We use the global rice price index from the IMF's *Global Primary Commodity Price* database, given the large weight of rice in the CPI basket (nearly 9 percent, which represents nearly one quarter of food consumption).

Measurement of Contribution of Inflation Drivers

24. The cumulative contribution of the different inflation drivers can be expressed as:⁷

$$\text{Inflation persistence} = \sum_{i=1}^{p1} \beta_i \quad (3)$$

$$\text{Global food price pass-through} = \frac{\sum_{i=0}^{p2} \delta_i}{(1 - \sum_{i=1}^{p1} \beta_i)} \quad (4)$$

$$\text{Global fuel price pass-through} = \frac{\sum_{i=0}^{p3} \varphi_i}{(1 - \sum_{i=1}^{p1} \beta_i)} \quad (5)$$

$$\text{Exchange rate pass-through} = \frac{\sum_{i=0}^{p4} \omega_i}{(1 - \sum_{i=1}^{p1} \beta_i)} \quad (6)$$

Estimation Results

Table 1. Philippines: Regression Analysis of Phillips Curve 1/ 2/

| Dependent Variable | | CPI (In percent, period average, quarter over quarter) | | | | | | | |
|------------------------|------------------------|--|-------------------------|------------------|-------------------------|------------------|------------------------|--------------------|--------------------|
| Explanatory variables: | | | | | | | | | |
| C | 0.0068 (0.0022) *** | CPI(-1) | 0.5577 (0.1556) *** | Global food | 0.0167 (0.0024) *** | Global fuel | 0.0134 (0.0023) *** | Exchange rate | 0.0315 (0.0313) |
| Output gap(-1) | 0.1878 (0.0550) *** | CPI(-2) | -0.303 (0.1485) ** | Global food (-1) | 0.0246 (0.0039) *** | Global fuel (-1) | 0.0173 (0.0042) *** | Exchange rate (-1) | 0.0309 (0.0184) |
| | | CPI(-3) | 0.207 (0.0905) ** | Global food (-2) | -0.0219 (0.0064) *** | Global fuel (-2) | 0.0038 (0.0085) | Exchange rate (-2) | 0.0326 (0.0348) |
| | | CPI(-4) | -0.1339 -0.1048 | Global food (-3) | 0.0137 (0.0074) * | Global fuel (-3) | -0.0039 (0.0025) | Exchange rate (-3) | 0.0366 (0.0209) |
| | | | | Global food (-4) | -0.0027 (0.0062) | Global fuel (-4) | 0.0005 (0.0043) | Exchange rate (-4) | -0.003 (0.0209) |
| Sample: | 2000:Q1–2013:Q4 | | Number of observations: | | 56 | Adjusted R2: | 0.7578 | | |

Source: IMF staff estimates.

1/ CPI: headline, period average, seasonally adjusted, log differenced quarter-over-quarter change; Output gap: in percent of potential real GDP, seasonally adjusted; Global food: proxied by global rice price index, period average, seasonally adjusted, differenced quarter-over-quarter change; Global fuel: proxied by global crude oil price index (simple average of three spot prices: Dated Brent, West Texas Intermediate, and the Dubai Fateh, 2005=100), period average, seasonally adjusted, log differenced quarter-over-quarter change; exchange rate: bilateral exchange rate, peso/US\$, period average, log differenced quarter-over-quarter change.

2/ Robust standard errors in parentheses. ***, **, * indicates 1 percent, 5 percent, and 10 percent statistical significance, respectively.

25. Using the Akaike-Schwartz criterion, the optimal lag length is found to be four. Given the potential for serial correlation and heteroskedasticity, we use the Newey-West standard errors to find the consistent estimates.

⁷ These cumulative pass-throughs represent the long-run effect of a permanent change in oil and food price inflation when inflation has stabilized.

- The model fit is good and several of the variables within each category are significant and have the correct sign:
 - The model finds a high degree of autocorrelation in inflation, especially in the first quarter, with cumulative persistence of 33 percent over four consecutive quarters.⁸ The lagged output gap is also found to be significant, with a semi-elasticity with respect to inflation of 19 percent.
 - Global food price shocks are significant contemporaneously and in the first three lags. However, the cumulative pass-through to inflation is relatively small at 4.5 percent. Similarly, global fuel prices are significant contemporaneously and in the first lag, with a cumulative pass through of 4.6 percent.
 - While the exchange rate is not found to be significant contemporaneously, it has a significant and large impact in subsequent quarters. All told, the cumulative pass-through of the exchange rate to inflation is 19 percent.

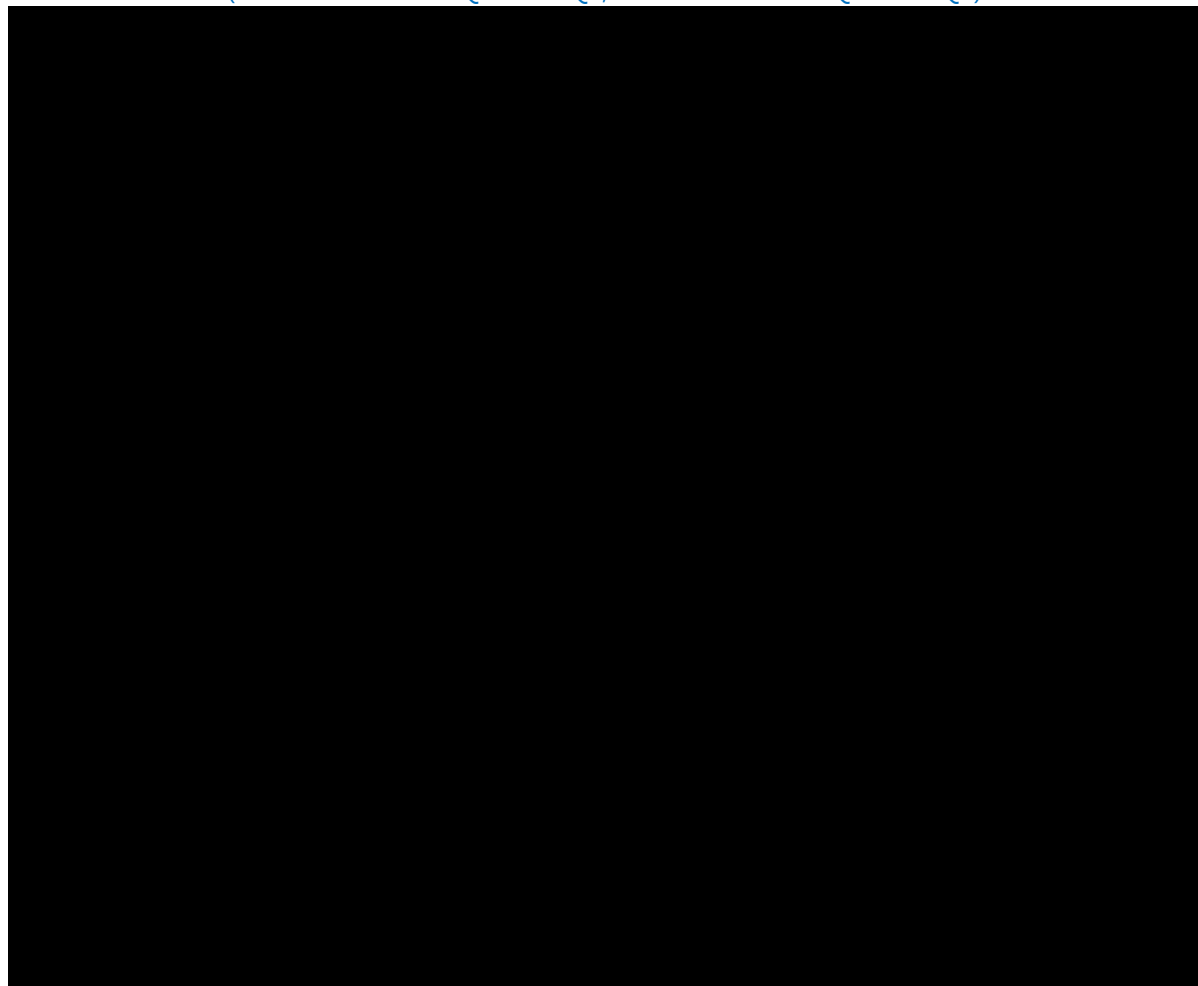
Stability Analysis and Rolling Estimations

26. To assess the stability of the estimated model, we re-estimate using rolling 40-quarter windows, beginning in 1990:Q1. The dynamics of rolling coefficients (with ± 2 NW standard errors) are displayed in Figure 22. The parameters are found to be quite unstable during the early time periods, but stabilize during the 2000s, coinciding with the implementation of the inflation targeting framework.

⁸ We discuss below that inflation persistence in the sample from 2000 onward is considerably smaller than during the 1990s.

Figure 22. Estimated Coefficients, Rolling Sample with a Fixed Window of 40 Quarters

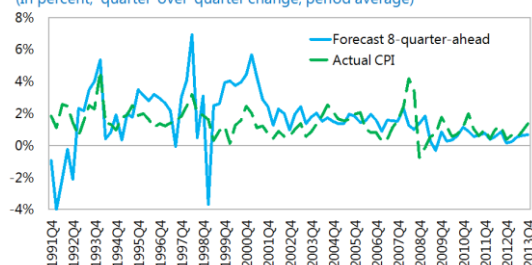
(First window: 1990:Q1-1999:Q4; last window: 2004:Q1-2013:Q4)



Source: IMF staff estimates.

Forecasting Inflation in the Philippines

27. In order to forecast future inflation, we first assess the model's ability to forecast past inflation. Using rolling 40-quarter windows, we re-estimate the model and forecast inflation for the following 8 quarters, using the realized values for the explanatory variables. Figure 23 compares realized inflation with the model's forecasts. While the model does not perform that well prior to 2000, predictive ability improves considerably thereafter.

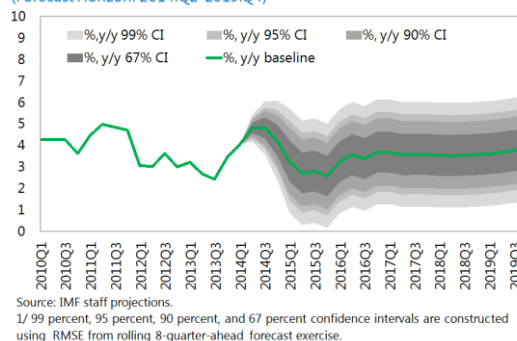
Figure 23. Forecast Performance Assessment 1/: Rolling Samples, 8-Quarter-Ahead Out-of-Sample Projection, 1991:Q4-2013:Q4
(In percent, quarter-over-quarter change, period average)

Sources: Haver Analytics; and IMF staff estimates.

1/ First estimation window: 1980:Q1-1989:Q4; first forecast window: 1990:Q1-1991:Q4 (8-quarter-ahead out-of-sample); last estimation window: 2000:Q1-2011:Q4; first forecast window: 2012:Q1-2013:Q4 (8-quarter-ahead out-of-sample). Number of estimation windows: 89; number of forecast windows: 89. 8-quarter-ahead rolling forecast series begins from 1991:Q4.

28. Based on the parameters estimated over the period 2000:Q1-2013:Q4, we forecast future inflation during 2014:Q2 to 2019:Q4, using staff's projections for the output gap and the nominal exchange rate, and WEO forecast for commodity prices (Figure 24). Inflation is expected to remain elevated in the near term, but to settle around 3.7 percent over the longer run, within the ± 1 standard deviation interval spanning 2.7–4.7 percent. The long-run point estimate forecast lies above midpoint of the new inflation target band of 3 ± 1 percent that will be introduced in 2015, with the upper range of the forecast lying above the band.

Figure 24. Philippines: Medium-Term Inflation Forecast 1/
(Forecast Horizon: 2014:Q2-2019:Q4)



Appendix 1. Data in the Common Inflation Factor Model

We include 62 countries across the globe (listed below) in the dataset. The inflation rate therein refers to the year-on-year percent change of headline CPI, period average, at quarterly frequency. Data are seasonally adjusted and standardized.

| List of Countries | | | | | |
|----------------------------------|---------------------------------|-------------|---|----------------|-----------------------|
| Asia and the Pacific | Latin America and the Caribbean | CEE and CIS | Europe | G-7 | Other Emerging Market |
| <i>Developing Asia</i> | Argentina | Russia | <i>Euro Area (excluding G-7)</i> | United States | Israel |
| Philippines | Brazil | Belarus | Austria | United Kingdom | South Africa |
| Malaysia | Chile | Ukraine | Belgium | Canada | |
| Indonesia | Colombia | Moldova | Cyprus | France | |
| Thailand | Mexico | Turkey | Estonia | Germany | |
| Vietnam | Peru | Poland | Finland | Italy | |
| India | Venezuela | Hungary | Greece | Japan | |
| China | | Bulgaria | Ireland | | |
| <i>NIEs</i> | | Romania | Latvia | | |
| Singapore | | Lithuania | Luxembourg | | |
| Taiwan | | Serbia | Malta | | |
| Hong Kong | | | Netherlands | | |
| Korea | | | Portugal | | |
| <i>Advanced Asia and Pacific</i> | | | Slovak | | |
| Australia | | | Slovenia | | |
| New Zealand | | | Spain | | |
| | | | <i>EU Members (non-Euro Area)</i> | | |
| | | | Croatia | | |
| | | | Czech | | |
| | | | Denmark | | |
| | | | Sweden | | |
| | | | <i>European AEs 2/ (excluding EU members)</i> | | |
| | | | Iceland | | |
| | | | Norway | | |
| | | | Switzerland | | |

1/ CEE = Central and Eastern Europe; CIS = Commonwealth of Independent States.
2/ AEs = Advanced economies.

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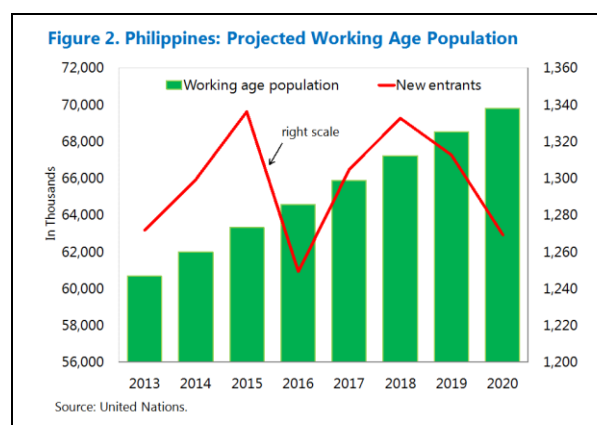
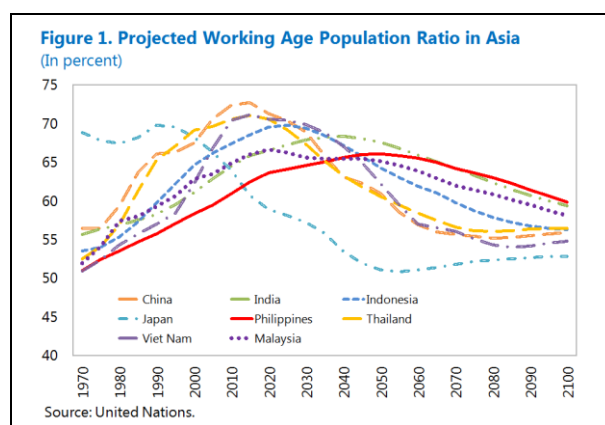
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THE PHILIPPINES' EMPLOYMENT CHALLENGES¹

A. Population and Labor Force Dynamics

1. The Philippines' favorable demographics can help raise GDP growth, but only if job creation keeps pace with the flow of labor force entrants. At just over 60 percent, the Philippines' working age population (WAP) ratio is low owing to the sizable population share below 15 years of age. As a result, the WAP is expected to swell from the current 60 million to near 70 million in 2020, on the entry of 1.35 million new workers annually, up from the current 1.25 million. This so-called demographic dividend compares favorably with other young-population countries in Asia (Indonesia and India), and contrasts with workforce aging that is occurring or predicted in many countries in the region. However, generating sufficient domestic jobs to reduce the relatively high unemployment rate (7.0 percent in 2014:Q2) and poverty rate (41 percent of the population on the World Bank's US\$2 per day threshold in purchasing power terms in 2009) has already been challenging.



2. Keeping pace with the rapid increase in the WAP over the past decade was achieved in part through outward migration, despite solid employment growth. Employment in the Philippines expanded by nearly 40 percent during 2000–13, the third fastest pace within Emerging Asia. However, employment growth failed to translate into a higher employment rate or, equivalently, a lower unemployment rate due to the rapid increase in the WAP and labor force. The unemployment rate for new labor force (LF) entrants was a very high 25 percent in 2013, although down significantly from the 35 percent during 2008–09. Nonetheless, this outcome would have been considerably worse if the nearly one-third of the annual increase in the WAP had not taken up overseas foreign work (OFW).² These young OFWs are part of the 1.8 million

¹ Prepared by Charmaine Bagacay, Vic Delloro and Shanaka J. Peiris (IMF Resident Representative's office, Manila).

² See World Bank (2013).

annual overseas deployment of Filipinos, of whom at least 400,000 are new hires.³ While the OFW profile is becoming more skilled, they are tending to accept less skilled jobs overseas in response to large wage differences and limited employment opportunities at home. This represents a significant brain drain for the Philippines.

Figure 3. Average Employment Growth, 2001–2012

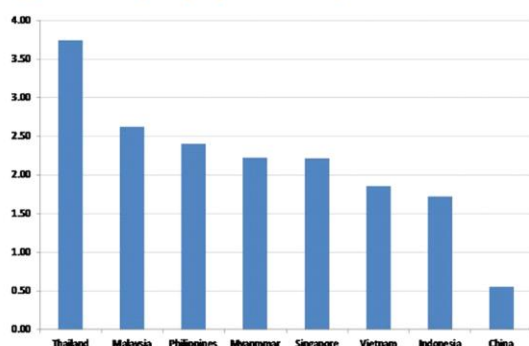


Figure 4. New Entrants to the Labor Force
(Percentage employed and unemployed)



Figure 5. Annual Deployment of Overseas Filipino Workers

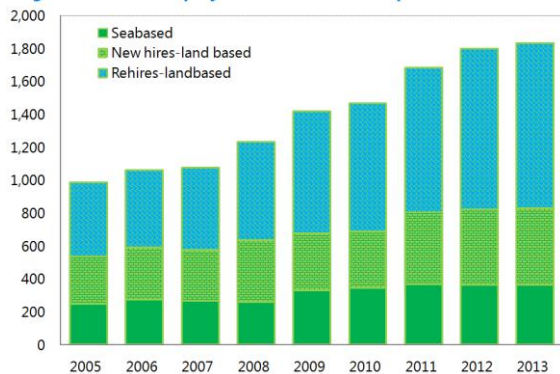
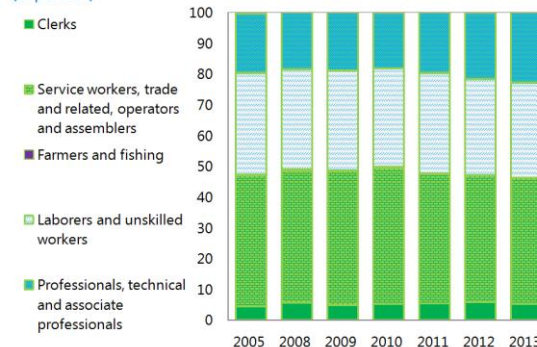


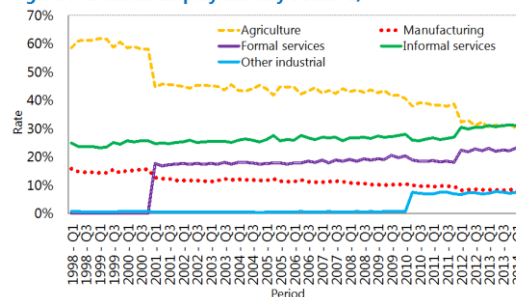
Figure 6. Annual Distribution of OFWs by Major Occupation Group
(In percent)



Employment

3. The large increase in total employment since 2000 has been accompanied by sizable shifts in the sectoral composition of employment. The employment share of agriculture has shrunk from 60 percent in 2001 to 30 percent in Q1:2014, and is now the same size as informal services. Employment in formal sector services (encompassing retail and

Figure 7. Detailed Employment by Sector 1/

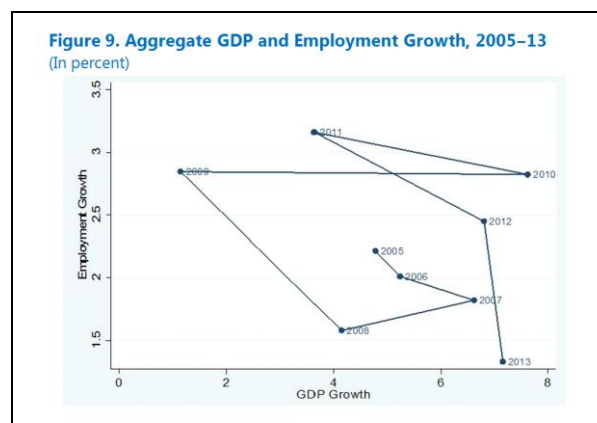
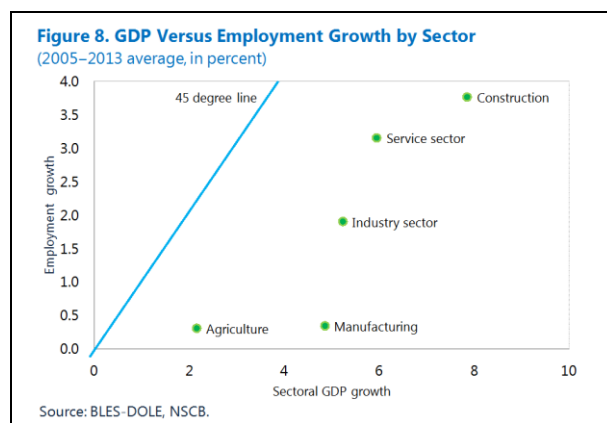


Source: Philippines, Bureau of Employment and Statistics (BLES-DOLE).
1/ Formal sector includes finance, real estate and other business activities, including BPOs, public administration and other personal services. Informal sector includes wholesale and retail trade and transportation, communication and storage. Figures for 1st quarter of January excludes Region VIII (Eastern Visayas Region).

³ OFWs are not reported in the labor force survey. In 2012, almost 10.5 million Filipinos were working overseas under permanent or fixed-term contracts.

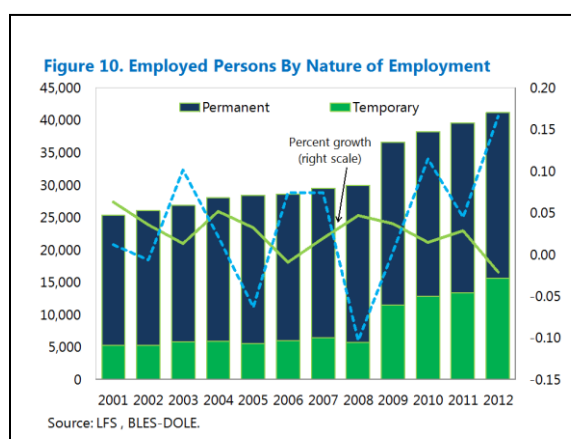
wholesale trade, business process outsourcing, tourism, among others) has risen to more than 20 percent. Meanwhile the employment share of manufacturing has moderated to below 10 percent, while that of other industry (including construction) has risen to a similar level.

4. Over the past decade, employment has consistently grown more slowly than real GDP. The employment intensity of growth was particularly low in 2013. Low responsiveness of employment to GDP growth is apparent in all major sectors of the economy, but especially prevalent in manufacturing and other industry. This suggests that economic activity is becoming more capital intensive over time.



Quality of Employment

5. Since 2008, the increase in employment has been sourced primarily by hiring temporary workers, rather than permanent employees.⁴ Currently, one third of employed persons is under a temporary work contract, a 17 percent increase in 2012 alone, while the number of permanent employees is declining. Companies are likely shifting to contract workers to bypass rigid labor regulation. Specifically, a temporary worker is required to be converted to permanent status on the expiration of his six-month employment contract, at which time the employer is required to bear the cost of hiring and termination. As a result, many employers are instituting temporary 5-month employment contracts and extending hours worked by permanent employees. While temporary work contracts are a second-best solution to overcome the high cost of permanent



⁴ Temporary contract workers are those under short-term and seasonal contracts. It also includes unpaid family workers.

employment, the very short tenure is likely to discourage on-the-job training and result in higher search costs for employers and employees. On a more positive note, however, the vulnerable share of employment—defined as self employed and unpaid family workers, has moderated since 2000, but remains above 40 percent of total employment.

Table 1. Philippines: Labor Outcomes 1/ 2/ 3/

| | 2000 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|-------|-------|-------|-------|-------|------|
| Labor force participation rate | 63.6 | 64.1 | 64.6 | 64.2 | 63.9 | 64.5 |
| Unemployment rate | 11.2 | 7.4 | 7.0 | 7.0 | 7.1 | 7.3 |
| Underemployment rate | 21.7 | 18.8 | 19.3 | 20.0 | 19.3 | 18.8 |
| Vulnerable employment rate | 49.3 | 45.5 | 44.8 | 42.8 | 41.6 | 42.6 |
| Mean number of hours worked per week | 42.7 | 41.7 | 41.1 | 41.2 | 41.7 | 40.7 |
| Labor productivity growth rate (GDP per employed person) | 13.9 | 29.5 | 0.4 | 5.6 | 5.7 | -- |
| Average daily wage (in Philippine peso) | 221.5 | 306.5 | 317.4 | 333.8 | 347.0 | -- |

Source: Philippine Statistics Authority.

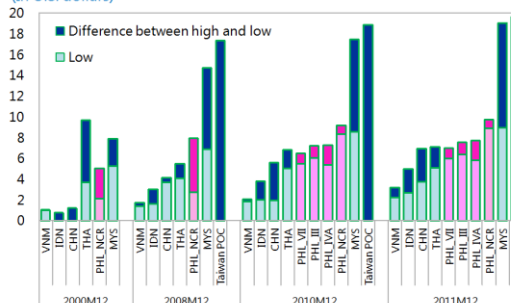
1/ No data available for 2014 average daily wage and labor productivity.

2/ For 2014, average of January and April 2014.

3/ Vulnerable employment is defined as sum of self-employed and unpaid family workers as a percentage of total employment (Philippine definition).

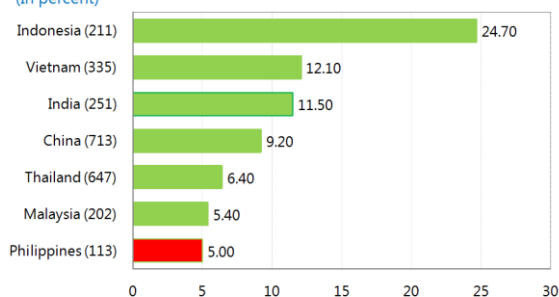
6. Wage-related labor costs no longer appear to be a major impediment to employment. The Philippines has a longstanding centralized (regional) minimum wage bargaining framework between employees, employers and the government, which affects the pay scale across most sectors and regions. However, while the relatively high level of minimum wages in the past may have impeded manufacturing employment growth, international surveys no longer identify labor costs as the key constraint to labor-intensive manufacturing in the Philippines (JETRO, 2013). Moreover, wages elsewhere in Asia have been growing strongly, improving the Philippines' relative competitiveness. Additionally, the Philippines piloted in 2012 a two-tier wage system consisting of a mandatory floor wage and a voluntary productivity-linked component. Nonetheless, other labor market regulations continue to be widely cited as an impediment to investment and employment.

Figure 11. Daily Minimum Wage Range 1/
(In U.S. dollars)



Sources: Countries' websites.
1/ China covers Beijing (2000), Shenzhen (2008), and Shanghai (2010 onwards).

Figure 12. Salary Base Rate Compared to Previous Year, 2012–2013 1/
(In percent)



Source: Survey of Japanese-Affiliated Companies in Asia and Oceania, FY 2013 Survey (JETRO).
1/ Number in parentheses represents number of firms responded.

Figure 13. Annual Unit Labor Cost, 2001–2013

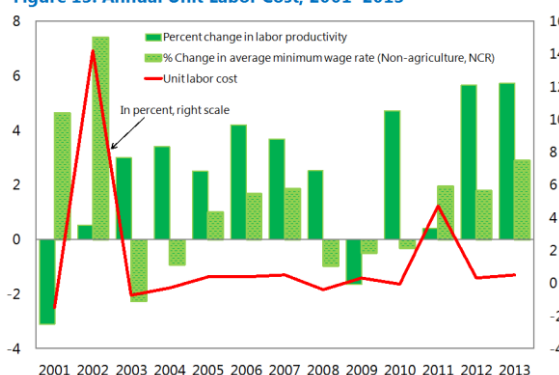


Table 2. Percentile Ranking in Selected Labor Market Efficiency Indicators

| | Labor Market Efficiency | | | | | | | | | | | |
|--|-------------------------|----------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|
| | Philippines | | Malaysia | | Indonesia | | Thailand | | Singapore | | Vietnam | |
| | Percentile Rank 1/ | Value 2/ | Percentile Rank | Value | Percentile Rank | Value | Percentile Rank | Value | Percentile Rank | Value | Percentile Rank | Value |
| Overall | 100 | 4.1 | 25 | 4.8 | 103 | 4.0 | 62 | 4.4 | 1 | 5.8 | 56 | 4.4 |
| A. Flexibility | 108 | 4.1 | 29 | 4.9 | 133 | 3.7 | 120 | 4.0 | 1 | 6.1 | 97 | 4.2 |
| Cooperation in labor-employer relations 3/ | 34 | 4.8 | 19 | 5.2 | 49 | 4.6 | 37 | 4.8 | 2 | 6.0 | 64 | 4.4 |
| Flexibility of wage determination 4/ | 109 | 4.5 | 33 | 5.5 | 106 | 4.6 | 111 | 4.5 | 5 | 6.0 | 69 | 5.1 |
| Hiring and firing practices 5/ | 117 | 3.3 | 26 | 4.5 | 39 | 4.3 | 31 | 4.4 | 3 | 5.6 | 81 | 3.9 |
| Redundancy costs 6/ | 124 | 27.4 | 110 | 23.9 | 141 | 57.8 | 135 | 36.0 | 3 | 6.0 | 111 | 24.6 |
| B. Efficient use of talent | 82 | 4.1 | 32 | 4.7 | 56 | 4.3 | 31 | 4.7 | 4 | 5.4 | 41 | 4.6 |
| Pay and productivity 7/ | 44 | 4.2 | 2 | 5.2 | 29 | 4.4 | 31 | 4.4 | 4 | 5.2 | 15 | 4.7 |
| Reliance on professional management 8/ | 32 | 5.0 | 21 | 5.4 | 34 | 4.9 | 57 | 4.4 | 8 | 5.1 | 119 | 3.6 |
| Capacity to retain talent 9/ | 71 | 3.4 | 20 | 4.6 | 39 | 4.1 | 27 | 4.3 | 8 | 5.1 | 95 | 3.0 |
| Capacity to attract talent 10/ | 86 | 3.2 | 22 | 4.6 | 28 | 4.1 | 32 | 4.1 | 2 | 6.0 | 69 | 3.5 |
| Women in labor force (ratio to men) 11/ | 111 | 0.6 | 121 | 0.6 | 115 | 0.6 | 65 | 0.8 | 84 | 0.8 | 21 | 0.9 |

Source: World Economic Forum, *Global Competitiveness Index 2013–2014* data platform.

1/ Percentile Ranking reports the country's position among the 148 economies covered by the GCI 2013–2014. (1=best, 148=worst).

2/ Value reports the country's score on each of the variables that compose the GCI, with 7 being the most desirable outcome.

3/ Characterize labor-employer relations, 1 = generally confrontational; 7 = generally cooperative.

4/ How wages are generally set, 1 = by a centralized bargaining process and 7 = by each individual company.

5/ Characterize hiring and firing of workers, 1 = heavily impeded by regulations; 7 = extremely flexible.

6/ Redundancy Cost estimates the cost of advance notice requirements, severance payments, and penalties due when terminating a redundant worker, expressed in weekly wage.

7/ Measures if pay is related to worker's productivity, 1 = not related to worker productivity, 7 = strongly related to worker productivity.

8/ Measures if Senior management positions in a particular country is usually held by relatives or friends without regard to merit (1) or mostly held by professional managers chosen for their superior qualification (7).

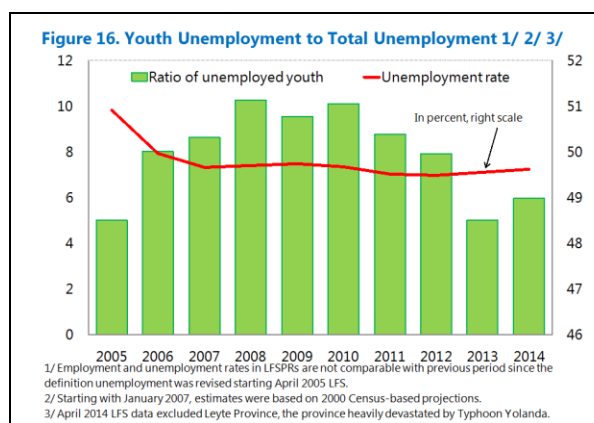
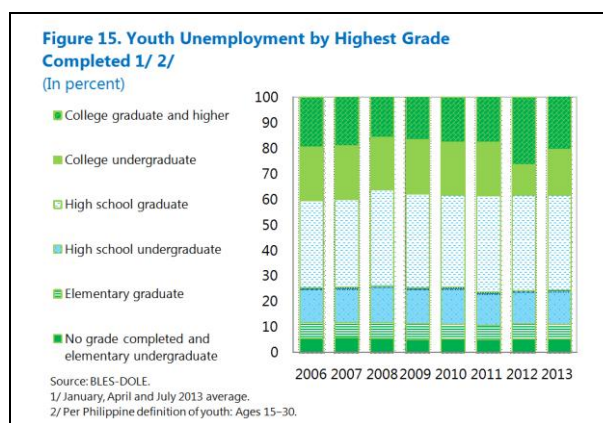
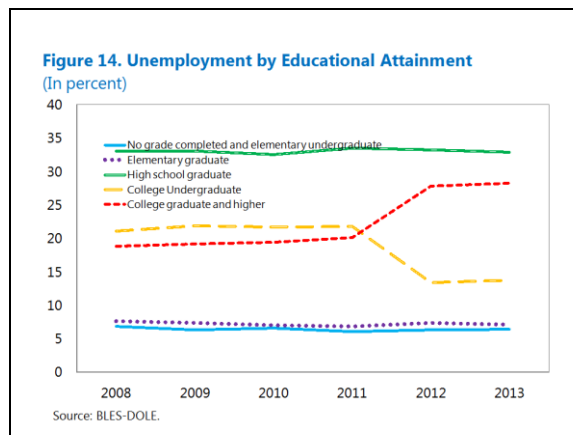
9/ Brain drain was split into two indicators, one of which is the capacity to attract talent. Measured from 1 to 7, 1 = the best and brightest leave to pursue opportunities in other countries and 7 = best and brightest stay and pursue opportunities in the country.

10/ Brain drain was split into two indicators, one of which is the capacity to attract talent. Measured from 1 to 7, 1 = not at all and 7 = attracts the best and brightest from around the world.

11/ measure is the percentage of women aged 15–64 participating in the labor force divided by the percentage of men aged 15–64 participating in the labor force.

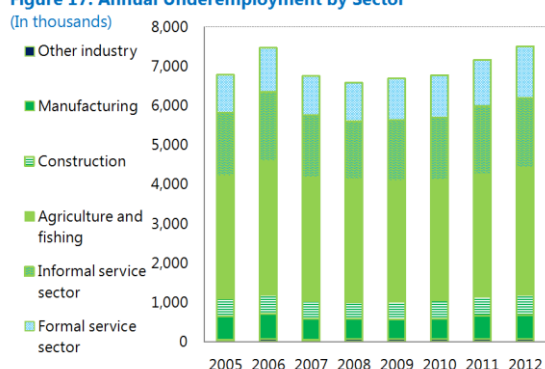
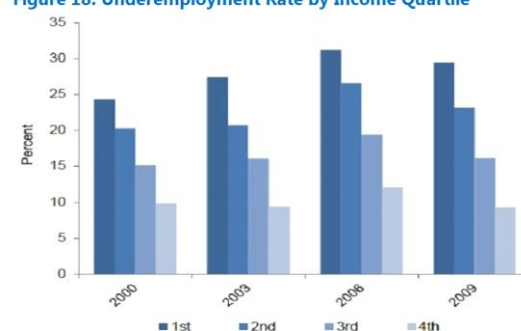
Unemployment

7. Unemployment in the Philippines has hovered around 7–8 percent, which is elevated from a regional perspective. However, nearly half of those unemployed are aged between 15–24 years, and the youth unemployment rate stands around 50 percent. Unemployment is highest among those with higher educational attainment, particularly among the youth. This points to the existence of a significant skill mismatch. While on the one hand, enterprise surveys highlight shortages of qualified workers in export orientated sectors and large unfilled job vacancies including in tourism, a sizable proportion of college graduates and undergraduates remain unemployed. This may however reflect that students seek an education that equips them for foreign employment, rather than for the domestic job market given the very large income advantage from working overseas and the limited number of well-paid technical jobs in the Philippines.

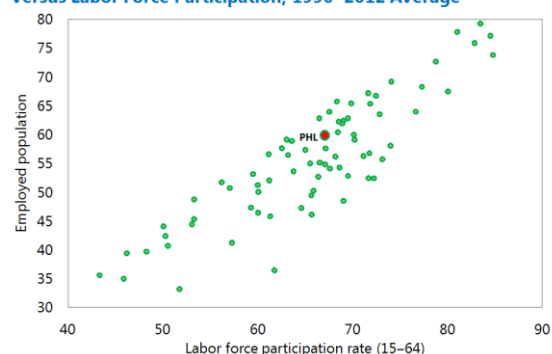
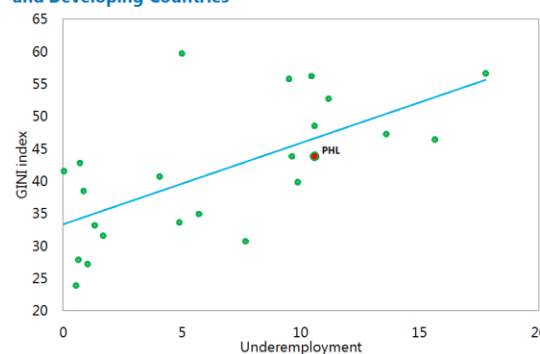


Underemployment

8. Inadequate use of labor resources is reflected not only in elevated unemployment, but in high underemployment. The underemployment rate—defined as employed persons seeking additional hours of work—was nearly 20 percent in 2013. Visible underemployment—defined as those working less than 40 hours per week and seeking additional hours of work, and is consistent with the ILO definition—represents about 60 percent of the total underemployed. At 11 ½ percent, visible underemployment is among the highest in the world. Underemployment is likely a significant factor in the high incidence of poverty and income inequality in the Philippines. Skills related underemployment, though harder to measure, is also likely prevalent in the Philippines, given the large share of science and engineering graduates working in retail and wholesale trade (World Bank 2013).

Figure 17. Annual Underemployment by Sector**Figure 18. Underemployment Rate by Income Quartile**

Source: World Bank staff estimates using LFS and FIES data.

Figure 19. Emerging and Developing Countries: Employment Versus Labor Force Participation, 1990–2012 Average**Figure 20. Underemployment and Income Inequality in Emerging and Developing Countries**

B. Cross-Country Empirical Comparisons

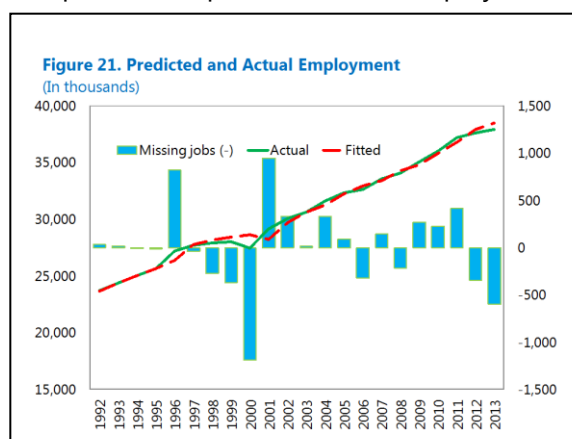
9. In this section, we analyze empirically how several characteristics of the Philippines' labor market compare with other countries.

Elasticity of Employment to GDP

10. An unbalanced panel dataset spanning 125 countries and the period 1980 to 2013 is used to estimate the long run response of employment growth to output growth. This elasticity is the complement to Okun's "law."⁵ For the Philippines, the elasticity is estimated at 0.48, while the global average is pegged at 0.5. Loungani (2014) reports a similar average elasticity for the world. This implies that in the long run, employment (in the Philippines, as elsewhere) grows at half the pace of real output.

⁵ Okun found that a 2 percentage point decline in real GDP relative to trend is associated with a one percentage point increase in unemployment.

11. However, Philippine employment growth has fallen short of this long-run tendency during 2012–13. As a result, at end-2013, actual employment was short 600,000 jobs relative to the predicted long-run level. These missing jobs represent 1.5 percent of total employment. As discussed earlier, recent slow growth in employment occurred alongside an increase in the average number of hours worked per person. Nonetheless, re-estimating the regression using hours worked still reveals a significant shortfall between 2011 to 2013 (see Appendix 1). These results suggest that output has become less employment intensive in recent years. A similar episode of missing jobs occurred around the time of the Asian financial crisis, but employment quickly recovered. The drop in the unemployment rate from 7.5 percent in early 2014 to 7 percent in Q2:2014 might indicate this recovery has begun.



12. Nonetheless, unemployment remains high on a persistent basis, suggesting that the employment intensity of output in the Philippines is relatively low. Several explanations have been offered in the literature for low employment rates, including a rapidly growing labor force, financial crisis, housing sector boom and bust cycles, trade openness, and rigid product and labor market policies (Bassanini and Duval (2006), Crivelli and others (2012), IMF (2010), and World Bank, (2012)).⁶ To assess the role of policies and institutions in explaining unemployment patterns, we follow the cross-country panel data approach of Bassanini and Duval (2006), but extend the analysis beyond OECD countries to emerging market and developing economies, which likely face additional jobs and growth challenges (see IMF, 2013).
13. A cross country panel data analysis suggests that unemployment is related to structural factors, including product diversification, FDI and external openness.⁷ As shown in the table, numerous structural factors and labor market characteristics are found to be associated with unemployment:

⁶ IMF (2010) undertakes a two-step procedure to explain the determinants of the dynamic employment elasticity and the forecast error from Okun's "law" that is interpreted to reflect more episodic factors beyond changes in output. While the latter could be more closely linked to the "missing" jobs puzzle in the Philippines recently, the short time series of data and difficulty to distinguish between episodic events in EMs including the Philippines precludes such an approach.

⁷ Results are derived from a fixed effects panel of 110 ADs and EMs, estimated from 1980 to 2012 using annual data from IMF's *International Financial Statistics* and *Structural Reforms* database and *World Development Indicators*.

- GDP growth significantly lowers unemployment. This result is large and holds across all specifications, highlighting the important role of economic growth for reducing unemployment, consistent with Okun's law.
 - A breakdown of the cyclical and trend components of GDP also confirms that the cyclical component is associated with lower unemployment while the trend has a negative impact as expected.⁸
 - Faster labor force growth tends to raise unemployment (Crivelli and others, 2012).
 - Rigid hiring and firing practices and more generous unemployment benefits tend to keep unemployment higher. A higher tax wedge proxied by the average personal income tax rate also appears to be a disincentive for job creation. Minimum wages relative to average wages do not have a statistically significant effect.
 - Greater product diversity (proxied by export product diversification), a smaller share of government consumption, greater openness to international trade, a larger share of FDI in GDP, lower average tariffs and current accounts restrictions, and a more liberal but well regulated domestic financial sector are associated with lower unemployment.
- 14.** On the other hand, remittances—which are thought to raise the reservation wage and hence discourage recipients from seeking employment and potential employers from creating jobs—is not found to significantly affect unemployment. In addition, the share manufacturing value added in GDP is not found to significantly lower unemployment.
- 15.** These results suggest that unemployment in the Philippines has been kept elevated by relatively slow growth until recently, limited export product diversification, low trade openness and FDI, a high effective PIT wedge, labor market rigidities, and high costs of compulsory pension and health contributions.

⁸ An alternative specification of including total factor productivity instead of trend GDP growth as in Bassani and Duval (2006) give virtually identical results indicating that the trend is likely capturing TFP dynamics.

Table 3. Regression on Unemployment Rate 1/

| Variables | Unemployment Rate | | | | | | | | | | | | |
|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|
| GDP growth | -0.837 *** (0.1910) | | -0.572 *** (0.0613) | -0.593 *** (0.0639) | -0.617 *** (0.0611) | -0.568 *** (0.0608) | -0.527 *** (0.0611) | -0.613 *** (0.1030) | -0.75 *** (0.1100) | -0.432 *** (0.0845) | -0.358 *** (0.0850) | -0.433 *** (0.0759) | -0.546 *** (0.0893) |
| Trend GDP growth | | 0.0344 *** (0.0041) | | | | | | | | | | | |
| Cyclical GDP growth | | -4.206 *** (0.3980) | | | | | | | | | | | |
| Diversification | | | -0.111 *** (0.0331) | -0.108 *** (0.0346) | -0.108 *** (0.0347) | -0.102 *** (0.0329) | -0.0928 *** (0.0326) | -0.127 ** (0.0506) | -0.111 * (0.0586) | -0.141 *** (0.0409) | -0.164 *** (0.0420) | -0.114 *** (0.0379) | -0.147 *** (0.0433) |
| Trade-to-GDP | | | -0.0021 (0.0006) | -0.0012 * (0.0007) | -0.0011 * (0.0007) | -0.0022 *** (0.0006) | -0.0013 ** (0.0006) | -0.002 ** (0.0009) | -0.0032 *** (0.0011) | -0.0018 ** (0.0008) | -0.002 ** (0.0009) | -0.0021 *** (0.0007) | -0.0024 *** (0.0009) |
| Labor force | | | 0.612 *** (0.1080) | 0.617 *** (0.1140) | 0.518 *** (0.1120) | 0.619 *** (0.1070) | 0.585 *** (0.1060) | 0.957 *** (0.1700) | 0.892 *** (0.1800) | 0.56 *** (0.1350) | 0.599 *** (0.1420) | 0.503 *** (0.1240) | 0.471 *** (0.1420) |
| Manufacturing value added to GDP | | | | -0.0008 (0.0037) | | | | | | | | | |
| Remittances to GDP | | | | | -0.0027 (0.0046) | | | | | | | | |
| Government consumption to GDP | | | | | | 0.0196 *** (0.0039) | 0.0167 *** (0.0038) | 0.0448 *** (0.0060) | 0.0396 *** (0.0074) | 0.028 *** (0.0043) | 0.0401 *** (0.0056) | 0.0279 *** (0.0042) | 0.0266 *** (0.0045) |
| FDI to GDP | | | | | | | -0.0044 * (0.0024) | -0.0064 * (0.0038) | -0.0104 *** (0.0039) | -0.0046 *** (0.0031) | -0.0083 ** (0.0037) | -0.0078 *** (0.0030) | -0.0089 *** (0.0032) |
| Labor market costs | | | | | | | | 0.324 ** (0.1480) | 0.468 *** (0.1490) | | | | |
| Minimum wage to mean wage | | | | | | | | | 0.157 (0.1310) | | | | |
| Generosity of unemployment benefits | | | | | | | | | 0.706 *** (0.1810) | | | | |
| Tariff rate | | | | | | | | | | 0.443 *** (0.1240) | | | |
| Personal income tax | | | | | | | | | | | 0.49 *** (0.1490) | | |
| Current ccount restrictions | | | | | | | | | | | | -0.325 *** (0.0783) | |
| Domestic financial reforms | | | | | | | | | | | | | -0.513 *** (0.1010) |
| Constant | 1.992 *** (0.0096) | 2.123 *** (0.0142) | -3.849 *** (1.4370) | -3.711 ** (1.5490) | -1.969 (1.5070) | -4.333 *** (1.4270) | -3.955 *** (1.4130) | -9.685 *** (2.2490) | -7.415 *** (2.4440) | -4.6 ** (1.8180) | -5.131 *** (1.9150) | -3.712 ** (1.6670) | -2.459 (1.9990) |
| Observations | 2,561 | 1,404 | 1,431 | 1,280 | 1,308 | 1,430 | 1,416 | 698 | 615 | 1,059 | 852 | 1,109 | 944 |
| R-squared | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| Number of country | 170 | 101 | 111 | 107 | 103 | 111 | 111 | 67 | 55 | 102 | 70 | 92 | 77 |

1/ Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

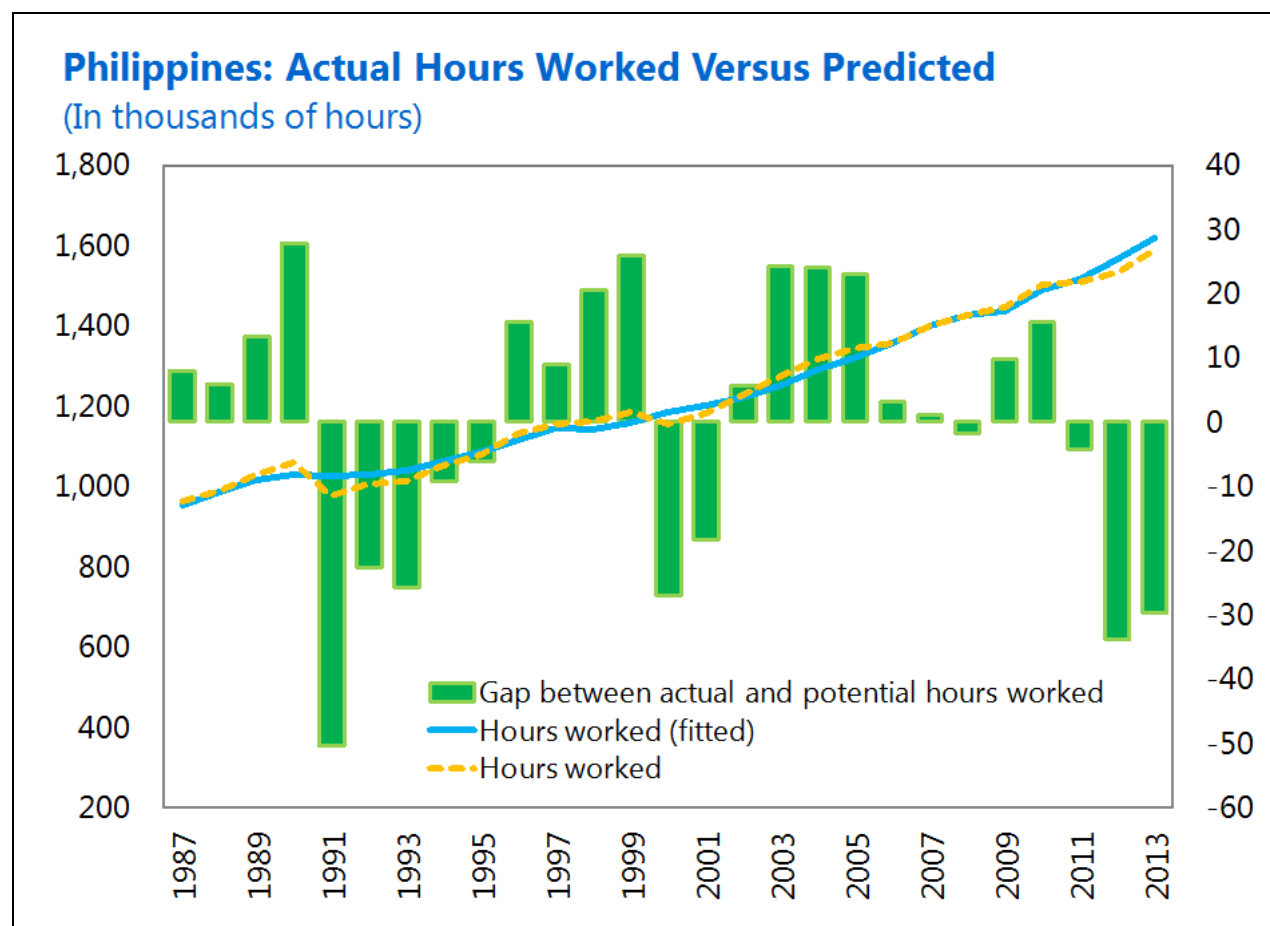
- 16.** While underemployment has been studied less than unemployment, similar factors are likely to explain the two measures of labor underutilization (see Wilkins and Wooden 2011). Available studies have generally focused on advanced economies, with a few exceptions (ILO 2014). Here we undertake a preliminary analysis of the cross country determinants of underemployment in 5-year non-overlapping panels from 1980, using ILO cross country data on underemployment in parsimonious specifications. The results indicate that sustained economic growth and product diversification are associated with lower underemployment, as well as unemployment. Raising secondary education completion rates also lowers underemployment. While remittances are not found to raise unemployment, they are associated with higher underemployment, which is relevant for the Philippines where 29 percent of Filipino families receive remittances from abroad. By creating quality jobs, this would reduce emigration and brain drain by educated youth, and lower remittances that tend to raise underemployment and income inequality.

Table 4. Regression on Underemployment 1/

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--------------------------------|-----------|----------|-----------|-----------|------------|-----------|-----------|
| GDP growth | -0.101 * | -0.135 * | -0.117 * | -0.105 * | -0.143 *** | -0.0731 | -0.0277 |
| | (0.0588) | (0.0722) | (0.0622) | (0.0632) | (0.0553) | (0.0580) | (0.0646) |
| Diversification | -5.335 ** | | -4.168 * | -3.218 | -5.024 * | 0.959 | -0.716 |
| | (2.250) | | (2.460) | (2.514) | (2.697) | (2.541) | (2.593) |
| Remittances | | 0.138 * | 0.164 * | 0.174 ** | 0.0637 | 0.22 ** | 0.561 *** |
| | | (0.0815) | (0.0901) | (0.0885) | (0.129) | (0.0889) | (0.140) |
| Working-age population growth | | | | 1.158 *** | | | |
| | | | | (0.398) | | | |
| Secondary education | | | | | -0.036 ** | | |
| | | | | | (0.0162) | | |
| Employment industry | | | | | | -0.15 *** | |
| | | | | | | (0.0520) | |
| Employment services | | | | | | 0.0489 * | |
| | | | | | | (0.0281) | |
| Agriculture labor productivity | | | | | | | -2.567 * |
| | | | | | | | (1.373) |
| Constant | 7.258 *** | 4.47 *** | 6.432 *** | 5 *** | 8.767 *** | 4.623 * | 3.834 ** |
| | (1.192) | (0.619) | (1.351) | (1.470) | (1.809) | (2.802) | (1.530) |
| Observations | 183 | 202 | 172 | 172 | 138 | 169 | 101 |
| Number of country | 51 | 60 | 50 | 50 | 50 | 50 | 36 |

1/ Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 1. Philippines—Hours Worked



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FINANCIAL INCLUSION IN THE PHILIPPINES¹

1. Increasing access to affordable financial services for poor and remotely-located households through micro-finance, micro-entrepreneurs (MEs), and small- and medium-sized enterprises (SMEs) can reduce poverty and support inclusive growth. Various channels have been identified in the literature through which credit can improve poverty outcomes. These include increasing households' ability to invest in education, improving the scope for consumption smoothing in response to shocks, and encouraging investment and entrepreneurship by MEs and SMEs where returns to capital are often found to be considerably higher than in larger firms. Moreover, informal financial services that develop in the absence of more formal arrangements are often associated with extremely high intermediation costs, which tends to discourage saving and investment.
2. The Philippines is found to lag many other developing and emerging economies in terms of financial access by individuals/households and MEs/SMEs, according to the World Bank's Global Financial Inclusion database (Global Findex) and Enterprise Surveys (Tables 1 and 2):

Table 1. Financial Inclusion for Individuals and Households

(In percent)

| Country/Region | Account at a Formal Financial Institution | Saved at a Financial Institution in the Past Year | Saved in an Informal Savings Club in the Past Year | Loan from a Financial Institution in the Past Year |
|---|---|---|---|--|
| Philippines | 27 | 15 | 7 | 11 |
| Developing and emerging economies, regional average | | | | |
| East Asia 1/ | 55 | 28 | 4 | 9 |
| South Asia 2/ | 33 | 11 | 3 | 9 |
| Latin America & Caribbean 3/ | 39 | 10 | 4 | 8 |
| Europe and Central Asia 4/ | 45 | 7 | 1 | 8 |
| Middle East & North Africa 5/ | 18 | 5 | 4 | 5 |
| Sub-Saharan Africa 6/ | 24 | 14 | 19 | 5 |

Source: World Bank, *Global Financial Inclusion Database* (Global Findex), 2011.

1/ Cambodia, China, Hong Kong SAR, Indonesia, Korea, Lao PDR, Malaysia, Mongolia, Philippines, Singapore, Taiwan, Thailand, and Vietnam.

2/ South Asia developing and emerging economies refer to Sri Lanka, Bangladesh, India, Nepal, Pakistan and Afghanistan.

3/ Latin America & Caribbean developing and emerging economies refer to Brazil, Venezuela, Chile, Dominican Republic, Ecuador, Argentina, Colombia, Bolivia, Mexico, Guatemala, Haiti, Paraguay, Honduras, Peru, Nicaragua, and El Salvador.

4/ Europe & Central Asia developing and emerging economies refer to Latvia, Lithuania, Serbia, Belarus, Turkey, Bosnia and Herzegovina, Bulgaria, Russian Federation, Romania, Kazakhstan, Ukraine, Georgia, Albania, Uzbekistan, Armenia, and Azerbaijan.

5/ Middle East & North Africa developing and emerging economies refer to Israel, Kuwait, Iran, Islamic Rep., Oman, United Arab Emirates, Saudi Arabia, Morocco, Lebanon, Algeria, Tunisia, Jordan, Syrian Arab Republic, West Bank and Gaza, Iraq, Egypt, Arab Rep.,

6/ Sub-Saharan Africa developing and emerging economies refer to Mauritius, South Africa, Kenya, Mozambique, Zimbabwe, Angola, Nigeria, Ghana, Uganda, Gabon, Mauritania, Tanzania, Cameroon, Congo, Rep., Sudan, and Senegal.

¹ Prepared by Huaizhu Xie.

**Table 2. ASEAN-4: Financing Sources for Fixed Investments
According to Firm Size 1/**

(In percent) 2/

| | | Proportion of Investments | | | |
|-------------|--------|---------------------------|-------------------|-----------------------------|--|
| | | Financed Internally | Financed by Banks | Financed by Supplier Credit | Financed by Equity Issuance or Stock Sales |
| Firm Size | | | | | |
| Philippines | Small | 85.6 | 5.2 | 2.3 | 0.6 |
| | Medium | 66.1 | 13.7 | 11.0 | 4.8 |
| | Large | 66.8 | 18.1 | 6.2 | 5.9 |
| Indonesia | Small | 86.2 | 5.7 | 1.3 | 2.4 |
| | Medium | 85.0 | 6.5 | 0.1 | 4.9 |
| | Large | 81.9 | 8.5 | 1.5 | 6.0 |
| Malaysia | Small | 34.0 | 35.9 | 7.1 | 3.9 |
| | Medium | 43.7 | 36.3 | 5.4 | 3.3 |
| | Large | 53.0 | 28.6 | 4.8 | 3.0 |
| Thailand | Small | 27.5 | 49.9 | 2.3 | 12.3 |
| | Medium | 28.6 | 53.5 | 2.5 | 9.7 |
| | Large | 28.0 | 53.1 | 2.8 | 9.2 |

Source: World Bank, Enterprise Surveys.

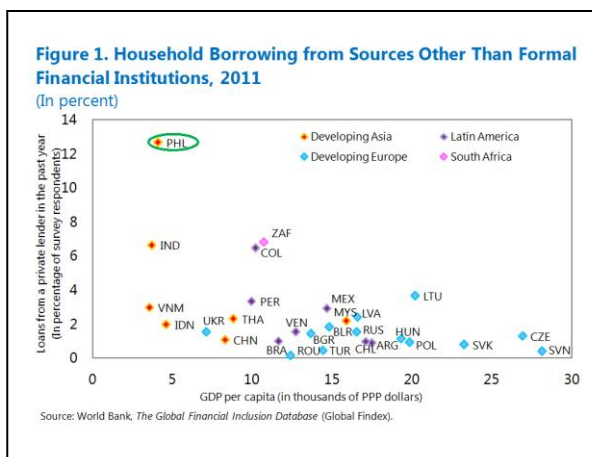
1/ The latest available survey data for the Philippines, Indonesia, Malaysia, and Thailand are from 2009, 2009, 2007, and 2006, respectively.

2/ Firm size by number of workers: Small (5–19); Medium (20–99); and Large (100+).

- Only 27 percent of the adult population has a bank account, which is below averages in other regions, with the exception of the Middle East and North Africa, and Sub-Saharan Africa.
- Saving in a formal financial institution (15 percent) is much lower than the average for East Asia (28 percent). On the other hand, 7 percent of the population saved in an informal savings club, which is higher than in most other regions. Relative to formal institutions, informal savings arrangements are considerably more popular in the Philippines than in most other regions.²

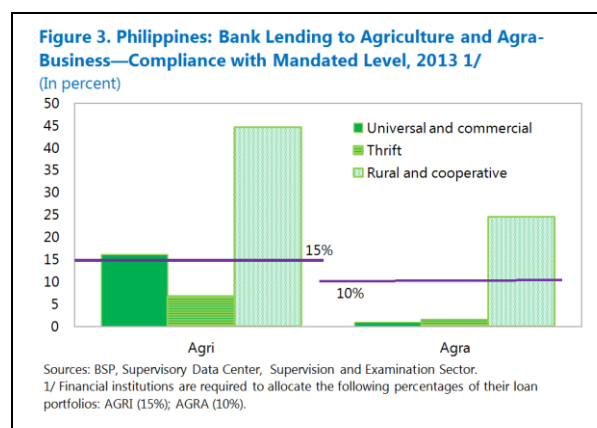
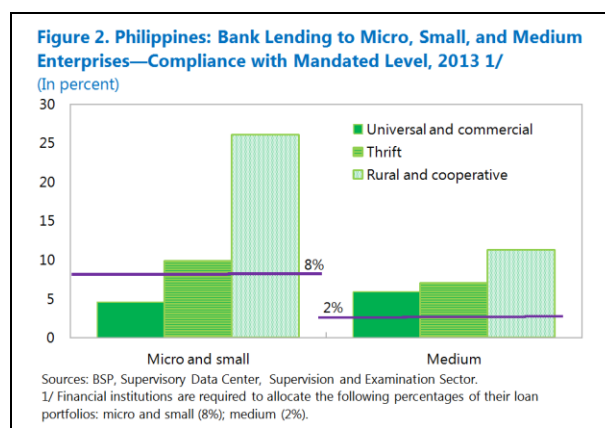
² According to a BSP survey, two-thirds of saving households have a bank account, while one quarter keep their savings at home, and 11 percent place their money in cooperatives, paluwagan (an informal saving scheme with rotating beneficiaries) and other credit/loan associations, as well as in government nonfinancial institutions, such as the social security system, the Home Development Mutual Fund and PhilHealth.

- Households tend to rely on informal lenders. Some 40 percent of the population borrowed from family or friends during the previous year, 12 percent from their employer, and 13 percent from a nonbank private lender, compared with 11 percent from a formal financial institution. The high dependence on related-party and informal lenders, even after controlling for per capita income, may reflect that many households receive remittances and lend them out to other households.



- MEs and SMEs rely more heavily on own internal funds to finance investment compared to Malaysia and Thailand (Table 2). This may reflect the higher funding cost and interest margins at banks that typically cater to these small firms.
- The Philippines faces some unique challenges in terms of increasing financial inclusion. The population is dispersed over 2,000 islands, and many of them have only very small communities. However, even for larger population centers, bank penetration is limited, and as of 2012, 37 percent of cities and municipalities—totaling 611—were unbanked. Moreover, 15 percent of households in rural areas receive remittances from another country (against 31 percent of households in urban areas and 23 percent nationally) according to Gallop World, and therefore need access to reliable savings vehicles.
 - The BSP has implemented several initiatives to address these challenges:
 - To tackle geographical dispersion and widen access to basic financial services, the BSP is encouraging the establishment of bank branches, micro-banking offices, and offsite ATMs. It is also encouraging alternative financial service providers, such as credit cooperatives, pawnshops, remittance agents, and e-money agents, into the market. The BSP has also promoted innovative delivery channels, such as correspondent banking by post offices, grocery stores, pharmacies, and gasoline stations, as well as mobile banking.
 - The BSP has encouraged more efficient systems for remittance repatriation, both domestically and from abroad. In this regard, the BSP has approved alternative ways of receiving remittances, such as Smart Padala, GCash, and stored-value cards. Competition among delivering channels is helping to lower transactions costs and reduce the delivery times.
 - In order to channel more funds to MEs and SMEs and into agribusiness, the BSP has established minimum lending requirements by banks, consistent with its “Magna Carta for Micro, Small and Medium Enterprises of 2008” and “The Agri-Agra Credit Reform Act of 2009.”

- Aside from the regulatory incentives that encourage financial institutions to lend to the SME sector, the BSP has also developed the Credit Surety Fund (CSF) Program, a credit enhancement scheme that aims to increase the credit worthiness of micro, small and medium enterprises that are experiencing difficulty in obtaining loans from banks due to lack of acceptable collaterals, credit knowledge and credit track records.
 - The Agrarian Production Credit Program (APCP), a five-year credit and capacity development program for agrarian reform beneficiaries is a joint micro finance program of the Department of Agriculture, the Department of Agrarian Reform and the state-run Land Bank of the Philippines. Since the program was implemented in 2012, ₱257.43 million in loans has been released benefitted 4,668 agrarian reform beneficiaries.
 - In 2013, the BSP refined existing regulations on “low-income households” for purposes of providing micro-insurance; improved procedures in the approval of housing microfinance loans and micro-agri loans; and enhanced the reporting of microfinance loans and microdeposits in order to capture the wide range of product offerings of banks with microfinance operations.
5. Rural, cooperative, and thrift banks are more likely to meet minimum sectoral lending benchmarks, consistent with their natural business focus and closer association with community-based banking. However, large banks as a group are below their lending benchmark for micro- and small enterprises and agra-business lending. Aside from lending to MSMEs, banks are also engaged in microfinance which had been growing rapidly³ and diversified to a wide range of products. Nonetheless, given the much larger size of the group of universal and commercial banks, these banks still account for the majority of bank lending to broad agriculture sector and smaller firms. Universal and commercial banks also tend to have lower funding costs and intermediation spreads than their smaller, more specialized counterparts.



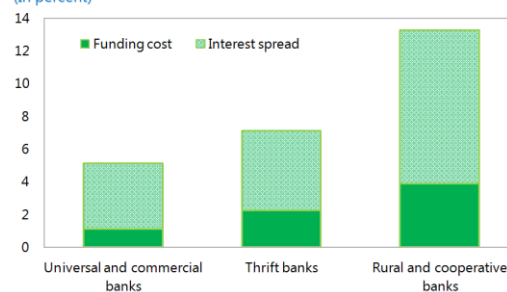
³ The number of microfinance borrowers grew from around 390,000 in 2000 to 1,017,351 in 2013:Q3. This corresponds to an increase in the number of banks with microfinance operations from 119 in 2002 to 183 in 2013:Q3.

Table 3. Philippines: Retail Microfinance Exposures

| | As of 30 September 2013 | | | |
|--|-------------------------|-------------------------------|---------------------|--|
| | Number of banks | Amount (In millions of pesos) | Number of borrowers | Savings component (In millions of pesos) |
| Microfinance oriented thrift banks | 3 | 287.272 | 18,373 | 94.943 |
| Microfinance oriented rural banks | 6 | 3,095.746 | 366,844 | 1,151.153 |
| Sub-total | 9 | 3,383.018 | 385,217 | 1,246.096 |
| Microfinance engaged rural banks | 131 | 2,769.614 | 390,194 | 7,082.107 |
| Microfinance engaged cooperative banks | 18 | 291.505 | 49,544 | 79.907 |
| Microfinance engaged thrift banks | 23 | 1,554.402 | 187,166 | 408.371 |
| Microfinance engaged universal bank | 1 | 1.034 | 36 | 0.015 |
| Microfinance engaged regular commercial bank | 1 | 82.522 | 5,194 | 29.646 |
| Sub-total | 174 | 4,699.078 | 632,134 | 7,600.045 |
| Grand total | 183 | 8,082.096 | 1,017,351 | 8,846.141 |

Source: Bangko Sentral ng Pilipinas.

6. Increasing lending by large banks to micro and small firms and to agriculture is likely to require reforms that allow banks to better manage risk. The use of land as collateral in rural areas has been hampered by the incomplete assignment of property rights by granting collective—rather than individual—land ownership titles to small land parcels as part of agrarian reforms. Strengthening creditor rights and streamlining resolution procedures, e.g., by: (i) refining the legal framework for movable collateral by allowing out-of-court-enforcements; (ii) allowing a generic description of collateral when it applies to revolving assets, such as inventories; and (iii) maintaining a central, comprehensive and unified collateral registry. Additionally, improving credit information systems by expanding the coverage of private credit bureaus and encouraging information sharing between banks can help to

Figure 4. Funding Cost and Interest Spread: Difference Across Types of Banks, December 2013 (In percent)

Sources: Bangko Sentral ng Pilipinas.

reduce information asymmetry which tends to raise borrowing costs or price potential clients out from the credit market. There is also scope to expand the range of available lending instruments in the Philippines, including factoring,⁴ leasing to MSMEs, and warehouse-receipt financing to agri-businesses and farmers. By leveraging information in existing distribution networks and repayment histories into loan decision making, such practices could, in turn, reduce intermediation costs and channel more funds to MSMEs.

⁴ Factoring is a financial transaction in which a firm sells its creditworthy accounts receivable to a third party, the factor, at a discount (typically equal to interest, plus service fees) and receives immediate cash.