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EMPLOYMENT AND GROSS DOMESTIC PRODUCT

***COMPARISONS OF TRENDS AND PATTERNS:* 2001-2006**

(Last of five-part series)

This LABSTAT is the last in a five-part series that focuses on data coherence between employment and gross domestic product (GDP). This final issue examines the connection between economic growth and quality of employment through the application of statistical software package on the two data series that covered the period 2001-2006.

Introduction

This LABSTAT issue focuses on the link between GDP growth and quality of employment as another way of validating the coherence between the Labor Force Survey (LFS) and National Income Accounts data series. Said coherence check is useful for gauging the effectiveness of policy and program interventions relating to the promotion of decent work for all, as espoused by the 2005-2010 Medium-Term Philippine Development Plan, and in ensuring that the gains of economic growth are translated into decent job growth.

There are currently three (3) indicators in the LFS that monitor changes in the quality of employment, namely: (1) class of worker; (2) hours of work; and (3) underemployment. Class of worker makes distinction between wage and non-wage employment (i.e., self-employment and unpaid family workers). On the other hand, hours of work differentiate between persons in full-time employment and persons in part-time employment. Finally, underemployment monitors persons who were employed but expressed their desire for additional hours of work or additional jobs. Among other things, quality of employment is often associated with the creation of more full-time employment along with the expansion of wage employment and lower incidence of underemployment.

Caution, however, should be observed in interpreting the results given the limited length of the data series which only include the six-year period 2001 to 2006. This is due to the “break” in the National Income Accounts data series. The break in the data series is a result of incorporated updates and revisions from data sources and refinements in methodology for some sectors beginning 2000.

Results of Statistical Analysis: GDP Growth and Quality of Employment

1. Class of Worker

Results of statistical tests revealed that two of the three categories of class of worker were sensitive to the movement of GDP. As shown in Table 8, the correlation coefficients of wage employment (0.772) and self-employment (0.787) were both highly significant at 1% confidence level. Both indicators have positive regression coefficients with wage employment (0.025) recording a higher coefficient than self-employment (0.012). On the other hand, the correlation coefficient of unpaid family workers failed to meet the desired level of significance.

TABLE 8 - Correlation and Beta Coefficients: GDP and Employment by Class of Worker

SECTOR	Pearson Correlation	Beta Coefficient	
		Value	t-value
Wage Employment	0.772*	0.025	5.693*
Own-Account	0.787*	0.012	5.977*
Unpaid Family Workers	0.275ns	0.003	1.343ns

**** Significant at 0.01 level.***
ns Not significant at 0.01 level.

The above result implies that growth in GDP creates not only additional wage employment but self-employment as well. However, the magnitude of employment creation could be larger in wage employment than self-employment as the beta coefficient of the former (0.025) is twice the value of the latter (0.012). On the other hand, the insignificant correlation coefficient of unpaid family workers somehow validates the observation that this group of worker constitutes nothing but mere “noise” in the employment data series since its variations overtime has little connection with the variation in GDP.

TABLE 9 - Correlation and Beta Coefficients: GDP and Employment by Selected Categories

SECTOR	Pearson Correlation	Beta Coefficient	
		Value	t-value
Wage Employment			
- Agriculture Sector	0.589ns	0.004	3.258ns
- Non-agriculture Sector	0.767*	0.022	5.343*
- Private Establishments	0.763*	0.024	5.530*
- Private Households	-0.118ns	-0.001	-0.558ns
- Government/Government Corporation	0.638*	0.002	3.889*
- Family-Operated Activities	-0.223ns	0.000	-0.074ns
Own-account Workers			
- Self-employed person	0.793*	0.013	6.096*
- Employer	0.232ns	-0.001	-1.118ns

**** Significant at 0.01 level.***
ns Not significant at 0.01 level.

Statistical tests were further conducted to probe the link of GDP growth with various forms of employment, the results of which are shown in Table 9. On the overall, GDP growth is highly correlated with three categories of workers, namely: (1) non-agricultural sector wage employment in private establishments; (2) employment in government/government corporations; and the (3) self-employed persons. Of the three categories, wage employment in private establishments obtained the highest regression coefficients (0.024) indicating that it is the most desirable form of employment as they are strongly linked with the nation's growth. Self-employment obtained a regression coefficient (0.013) that is half that of the former while the coefficient was almost negligible for employment in government/government corporations (0.002).

On the other hand, wage employment in agricultural sector, private households and family-operated activities and employer failed to establish significant correlation with GDP growth. This validates the observation that these forms of employment are generally less desirable in quality.

2. Full-time vs. Part-time Employment

Information on employment by hours of work provides yet another measure, albeit crude, of quality of employment. It allows the classification of employed persons according to the number of hours worked into full-time and part-time status. Full-time workers are persons who have spent 40 hours or more in all their present jobs during the reference week. Part-time workers are those whose working hours during the reference week fall below the 40 hours cut-off period.

The desired outcome is for economic growth to bring about a corresponding expansion in the labor market. An expansion that will match the growth in the labor force so that the economy can generate enough full-time employment – jobs that are stable and regular and gainful and remunerative at the same time.

TABLE 10 - Correlation and Beta Coefficients: GDP and Employment by Hours of Work

SECTOR	Pearson Correlation	Beta Coefficient	
		Value	t-value
Full-time employment	0.715*	0.029	4.794*
Part-time employment	0.450^{ns}	0.012	2.364^{ns}

**** Significant at 0.01 level.***
ns Not significant at 0.01 level.

The statistical test done on employment by hours of work tends to support the presence of a link between GDP and full-time employment. Their correlation coefficient (0.715), as shown in Table 10, is highly significant at 1% confidence level. Furthermore, the positive beta coefficient sign suggests that the two series generally move in the same direction.

On the other hand, the link of part-time employment with GDP growth cannot be established with certainty given the results of the statistical tests, which yielded insignificant correlation and regression coefficients.

3. Underemployment

Underemployment is the third and final measure of quality of work in the LFS. Said statistics measure quality of employment by way of "*the desire of an employed person for additional hours of work or job or an entirely new job with longer hours of work*". As cited earlier (LABSTAT Updates Volume 11 No. 7), underemployment has particular relevance in less developed regions where the agricultural sector has a substantial presence and a large proportion of the workforce is engaged in self-employment activities.

There are two measures of underemployment: (1) time-related (visible) underemployment, which reflects insufficiency in the volume of employment and; (2) invisible underemployment, which reflects inadequate employment situation characterized by low income, insufficient use of skills and experience and low productivity, among others. For operational reasons, the statistical measurement of underemployment may be limited to time-related or visible underemployment. This is because invisible underemployment is not a statistical concept directly measurable by the LFS but primarily an analytical concept that still has to be developed further (Surveys of Economically Active Population, Employment, Unemployment and Underemployment, 1990). For this reason, some countries such as Australia limit their measurement of underemployment to visible underemployment or time-related underemployment.

TABLE 11 - Correlation and Beta Coefficients: GDP and Underemployment by Hours Worked

SECTOR	Pearson Correlation	Beta Coefficient	
		Value	t-value
Visible Underemployment (worked less than 40 hours)	0.619*	0.012	3.695*
Invisible Underemployment (worked 40 hours or more)	0.539*	0.011	2.999*

**** Significant at 0.01 level.***

As shown in Table 11, both the correlation and regression coefficients for the two forms of underemployment were all significant at 1% confidence level. This could have been a good result except that the positive sign of the regression coefficients did not conform with the priori assumption of a negative sign, i.e., growth in GDP should bring down underemployment and not the other way around.

One possible explanation is that a higher GDP growth could create a higher expectation of more employment opportunities on some segments of the employed workforce. This perception serves as a motivation for them to desire additional work which translates to higher underemployment rate. This "subjective" element in the definition of underemployment diminishes its potential as an indicator of employment quality.

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