An Analysis of Relationship Between Human Capital and Economic Growth

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Abstract: Human capital in every sense is one of the fundamental factors of development. No country can achieve sustainable economic development without substantial investment in human capital. The relationship between economic growth and human capital has been long recognized. Many studies especially in Western economies have shown that human capital has a positive impact on economic growth. However, economic growth also has a strong effect on human capital outcomes, both through private expenditures and government programs. Thus, higher incomes facilitate the achievement of other crucial human development objectives; it also has an indirect effect on human development. In Malaysia, human capital investment is becoming an important aspect of the development agenda for which a large percentage of its expenditure is being allocated.

This study attempts to analyze the relationship between human capital and economic growth in Malaysia using an augmented aggregate production function growth model, we apply the bounds testing (ARDL) approach to cointegration which is more appropriate for estimation in small sample studies. Human capital is represented by life expectancy at birth and public expenditure on education, while economic growth is measured using real gross domestic product. The data used for the analysis are gathered from various government agencies and world reports and the coverage is from 1980 to 2009. The study reveals that the traditional inputs i.e capital and labour are statistically significant in both the long-run and the short-run, having positive effects on economic growth in Malaysia. Government expenditure on education is only significant at 12.6 per cent level, while life expectancy is significant at 16.1 per cent. In other words, economic growth in Malaysia is very much input-driven i.e. by adding more and more resources into the same production function. Such growth is hard work and by the law of diminishing returns, cannot be sustained indefinitely. A large budget allocated to education does not translate into improvement in the quality of workforce and production process, innovation and technological advancement. Empirical results in this paper suggest that Malaysian education system must produce more efficient workforce to increase the contribution of human capital to its economic growth. A large budget allocation to education sector must be utilized optimally through providing education that tailored to the nation's need. Further human capital investment in the labour market is also needed to produce skilled workers. This argument is further strengthened when we look at the objective for improving human capital which is not merely to achieve a high level of economic growth but also to fulfill social needs.

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1. Introduction

Human capital plays a key role in both neoclassical and endogenous growth models (Mankiw Romer and Weil 1992, Rebelo 1991, Sianesi and Van Reenen 2003). In the neoclassical growth model, output is determined by capital and labour. Model used in exogenous growth theory consists of a production function equation in which economic output was the result of the sum of two inputs: labor and capital (Mankiw, Phelps, & Romer, 1995). As capital and/or labor increased, then output increased by the same proportion as the inputs. Actual growth was exogenous to the model. Instead of looking at growth in the context of it being a part of the equation, theorists and economists excluded it, making it exogenous to the model. The neoclassical growth model of Solow (1956) focused on exogenous technological or population factors that determine output-input ratio. In this model the balanced path growth is achieved when the output and physical capital grow in tandem at the constant rate of labour force growth, i.e. growth in percapita output is always equal to the growth of the labour force, whereas technological progress is regarded as exogenously determined. This exogenous technology variable was meant to account for any discrepancies between what certain levels of capital and labor would indicate as the output and actual output, especially in cross-country comparisons. More importantly, it provided a vehicle for explaining the rate of growth over time. There is however a major weakness to Solow's model. By keeping technology outside of the equation, Solow's model could not explain "why" or "how", or from where/what technological progress came from (Cortright, 2001). The model therefore lacks quite a bit of explanatory power.

The empirical results of this model indicate that physical capital and labour inputs cannot explain completely the growth of output (Schultz 1961, Denison 1962). The findings show that the growth rate of output exceeds the relevant input measures suggesting that investment in human capital is probably the major explanation factor for the difference (Lucas 1988; Romer 1989). The extended neoclassical growth model adopts an endogenous growth concept by introducing effective labour as factor of production, where human capital is embodied in this measure. This model suggests that endogenously accumulated human capital has a direct impact on the productivity of labour, while the exogenous growth model regards human capital as given and it is not determined within the system.

Hence, a good way of generating economic growth is through educational development. The basic importance of education is to enable individuals with knowledge and the ability to apply that knowledge. Education is therefore commonly regarded as the most direct avenue to rescue a substantial number of people out of poverty since there is likely to be more employment opportunities and higher wages for skilled workers. Furthermore, education can enable children's attitudes and assists them to grow up with social values that are more beneficial to the nation and themselves.

The theoretical basis of education on economic growth is rooted in the endogenous growth theory. Endogenous growth economists believe that improvements in productivity can be linked to a faster pace of innovation and extra investment in human capital. There is also a central role for knowledge as a determinant of economic growth. Endogenous growth theory predicts positive externalities and spillover effects from development of a high valued-added knowledge economy which is able to develop and maintain a competitive advantage in growth industries in the global economy.

In Malaysia, government' commitment to upgrade level of human capital especially education among the population is shown from its large expenditure allocated to this sector. For example, in 1980 the education and training development expenditure was 15.5% of the total government expenditure and was the highest in the category of social services expenditure. This percentage had increased to 18.8 per cent in 1990, 23.7 per cent in 2000 and 22.6 per cent in 2008. Public education expenditure as a proportion of GDP ranged from 4.4 to 6.1% during the periods. This figure is larger than that of other countries; for example Singapore allocated around 3.3 to 3.6 per cent, Hong Kong 3.8 to 4.2 per cent and in Taiwan education allocation were about 4.1 to 4.9 per cent. Cambodia and Myanmar were among the countries where the ratio of education expenditure to GDP is less than 2 percent (ESCAP 2009).

The composition of education also changes towards higher percentage enrolment at higher level of education. For example, in 1975 enrolment at the tertiary level was 17,603 students increased to 96,247 in 1995, but in 2008, it increased to 419,334. Enrolment at the primary level increased to 97.8 per cent in 2002 but decreased 94.2 per cent in 2007, (Malaysia 1996, 1998, 2008). In addition, education is regarded as an instrument for achieving national unity and for producing a productive and highly disciplined society (Rahmah, 1997).

As a result of changes in the educational structure, employment by level of education has also changed towards higher percentage of those with higher educational achievement. For example, employment with tertiary qualification increased from 275, 900 in 1981 to 1.13 million in 1998 and 2.12 million in 2007. On the contrary, employment with no formal education and with primary level of education decreased (see Figure1). This change is consistent with industrial development that is moving towards a more-capital intensive and higher technological adoption, which require more skilled workforce. The objective of the economy to move ahead towards knowledge-based economy also resulted in greater demand for more educated workers.

Figure 1: Employment by Level of Education

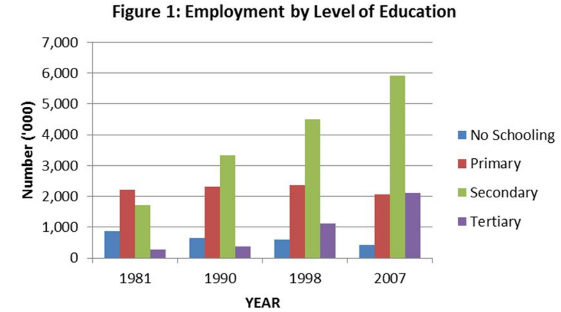


Table 1: Gross Domestic Product, Government Expenditure and University Enrolment

Year	Gross Domestic Product	Total Government Expenditure	Expenditure on Education			University Enrolment
	RM mill	RM mill	RM mill	% (Gov Exp)	% (GDP)	
1970	9 951	2 876	477	16.6	4.8	8 230
1975	22 332	7 013	1 370	19.5	6.1	17 603
1980	53 308	17 068	2 653	15.5	5.0	26 410
1985	77 470	26 822	3 437	12.8	4.4	43 258
1990	115 701	35 037	6 596	18.8	5.5	65 284
1995	218 703	49 093	10 459	21.3	4.8	96 247
2000	342 612	84 488	20 022	23.7	5.8	211 584
2008	738 677	196 346	44 420	22.6	6.0	419 334

Source: Ministry of Finance, Malaysia. (various issues), *Economic Report*. Kuala Lumpur: Government Publication.

Measuring the impact of human capital on output and economic growth is quite complex because both direct and indirect effects are involved. Measurement problems also arise from choosing the correct variables and defining them. Moreover, the goal of improving human capital is not only limited to achieving higher economic growth but it also contains objectives that are related to social and politics. Thus, failure to show its importance to increase output and economic growth does not mean that further investments in human capital should cease. Some countries emphasize social goals above that of the economic goals when investing in human capital. For example, investment in education is aimed to inculcate positive values among individuals which are crucial for long term development. In addition, human capital can be regarded as a basic need as it will improve the welfare of the society.

Human capital can be measured in several ways. Using education as a variable alone will require several possible measures such as years of schooling, number of enrolment, level of education of the labour force and public expenditure on education. A second type of human capital, health, in the form of life expectancy, has appeared significantly in many cross-country growth regressions (Bloom and Canning 2000, 2001). Life expectancy can effect economic growth in several ways. As people live longer, they can save more for old age (Lee et al. 1998). Life expectancy can also serve as proxy for the health status of the whole population, because declines in mortality rates are related to falls in morbidity.

From economist's view point, what is important is how far the rise in human capital can lead to an increase in output and thereby contribute to economic growth. To this question, human capital is introduced as a variable into the production function (Denison 1962, 1979; Hicks 1980; Otani and Villanueva 1990; Lau et al. 1993; Walter and Rubinson 1983).

1. The Theoretical Framework

The effect of human capital on economic growth is analyzed in the Cobb Douglas type production function and standard growth accounting framework. The standard aggregate production function (APF) model has been extensively used in econometric studies to estimate the impacts of human capital on growth in many countries. The APF assumes that, along with "conventional inputs" of labour and capital used in the neoclassical production function, "unconventional inputs" like human capital and trade may be included in the model to capture their contribution to economic growth. The general APF model to be estimated is
derived as:

$$Y_t = AK_t^{\alpha} L_t^{\beta} \qquad (1)$$

where Y_t denotes the aggregate production of the economy (real GDP per capita) at time *t* and A_t, K_t, and L_t are the total factor productivity (TFP), the capital stock and the stock of labour, respectively. The impact of human capital on economic growth possibly operates through TFP (A_t). Moreover, from the Bhagwati's hypothesis, any gains from human capital on TFP will surely be dependent on the volume of trade of a particular host country. Since we want to investigate the impacts of human capital on economic growth through changes in TFP, we assume therefore that TFP is a function a function of exogenous variables, such as level of human capital, government expenditure and foreign inputs. The argument is that an educated labour force performs a major role in the determination of productivity level instead of entering the production function as a factor. The expenditure on education is assumed to influence the level of human capital which is expected to cause improvements in total factor productivity. In addition, higher level of human capital speeds up the adoption of foreign technology that is expected to balance the knowledge gap between the developed and the developing countries (Nelson and Phelps, 1966; Lee; 1995; Benhabib and Spiegel, 1994; Loening, 2002). Thus:

$$A_t = C_t^{\lambda} H_t^{\delta} \quad (2)$$

Combining equations (2) with (1), we get:

$$Y_t = C_t^{\lambda} H_t^{\delta} K_t^{\alpha} L_t^{\beta}$$

From equation (3), an explicit estimable function is specified, after taking the natural logs both sides, as follows;

$$\ln Y_t = \beta_0 + \beta_1 \ln K_t + \beta_2 \ln L_t + \beta_3 \ln H_t + \beta_4 LIFE_t + \mu_t \quad (4)$$

Where,

Y = real gross domestic product (RM millions)

K = real physical capital stock (RM millions). The Malaysian data does not provide physical capital stock but data on capital formation (investment) is available. For the purpose of the analysis, capital stock is computed using the formula $K_t = \sum_{J=0} (I-d)^{t-j} (I_j / P_j)$ (Kydland and Prescott 1982).

L = quantity of labour ('000)

H = government expenditure on education (RM millions)

LIFE = life expectancy at birth

2.1 ARDL model specification

To empirically analyse the long-run relationships and dynamic interactions among the variables of interest, the model has been estimated by using the bounds testing (or autoregressive distributed lag (ARDL)) cointegration procedure, developed by Pesaran et al (2001). The bounds testing procedure is relatively more efficient in small or finite sample data sizes as is the case in this study (Narayan, 2004). The procedure will however crash in the presence of I(2) series.

To implement the bound test procedure, Equation (4) is modeled as a conditional ARDL-error correction model:

$$\begin{aligned}\Delta \ln Y_t = \alpha &+ \sum_{i=1}^{p} \theta_i \Delta \ln Y_{t-1} + \sum_{i=0}^{p} \beta_i \Delta \ln K_{t-1} + \sum_{i=0}^{p} \lambda_i \Delta \ln L_{t-1} \\ &+ \sum_{i=0}^{p} \sigma_i \Delta \ln H_{t-1} + \sum \delta_i \Delta LIFE_t + \mu_2 \ln K_{t-1} \\ &+ \mu_3 \ln L_{t-1} + \mu_4 \ln H_{t-1} + \mu_5 LIFE_{t-1} + \varepsilon_{1t}\end{aligned} \quad (5)$$

The orders of lags in the ARDL model are selected by either the Akaike information criteria (AIC) or Schwarz Bayesian criterion (SBC), before the selected model is estimated by OLS. For annual data, Pesaran and Shin (1997) recommended choosing a maximum of two lags. From this, the lag length that minimizes SBC is selected. In addition, we obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. This is specified as follows:

$$\begin{aligned}\Delta \ln Y_t = \alpha &+ \sum_{i=1}^{p} \theta_i \Delta \ln Y_{t-1} + \sum_{i=0}^{p} \beta_i \Delta \ln K_{t-1} \\ &+ \sum_{i=0}^{p} \lambda_i \Delta \ln L_{t-1} + \sum_{i=0}^{p} \sigma_i \Delta \ln H_{t-1} \\ &+ \psi ECT_{t-1} + \varepsilon_{2t}\end{aligned} \quad (6)$$

where ECT_{t-1} is the one period lagged error correction term, defined as

$$\begin{aligned}ECT_{t-1} = \ln Y_t - \alpha &- \sum_{i=1}^{p} \mu_1 \ln Y_{t-1} - \sum_{i=0}^{p} \mu_2 \ln K_{t-1} \\ &- \sum_{i=0}^{p} \mu_3 \ln L_{t-1} - \sum_{i=0}^{p} \mu_4 \ln H_{t-1} - \Sigma \mu_5 LIFE_{t-1}\end{aligned} \quad (7)$$

Here θ, β, λ, and σ are the short-run dynamic coefficients of the model's convergence to long-run equilibrium, and ψ is the speed of adjustment.

2.2 Bounds testing procedure

The first step in the ARDL bounds testing approach is to estimate equation (5) by ordinary least squares (OLS) in order to test for the existence of a long-run relationship among the variables by conducting an F-test for the joint significance of the coefficients of the lagged levels of the variables, i.e., H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = 0$ against the alternative H_1: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq 0$. We denote the test which normalize on *Y* by F_Y(Y/K,L,H,LIFE). Two asymptotic critical values bounds provide a test for cointegration when the independent variables are I(d) (where $0 \leq d \leq 1$): a lower value assuming the regressors are I(0) and an upper value assuming purely I(1) regressors. If the F-statistic is above the upper critical value, the null hypothesis of no long-run relationship can be rejected irrespective of the orders of integration for the time series. Conversely, if the test statistic falls below the lower critical value the null hypothesis cannot be rejected. Finally, if the statistic falls between the lower and upper critical values, the result is inconclusive. The approximate critical values for the F-test were obtained from Pesaran et el (2001). In the second step, once cointegration is established the conditional ARDL (p_1

,q_1 , q_2, q_3, q_4, q_5) long-run model for Y_t can be estimated as:

$$\ln Y_t = \alpha + \sum_{i=1}^{p} \delta_1 \ln Y_{t-i} + \sum_{i=0}^{q_1} \delta_2 \ln K_{t-i} + \sum_{i=0}^{q_2} \delta_3 \ln L_{t-i} + \sum_{i=0}^{q_3} \delta_4 \ln H_{t-i} + \sum_{i=0}^{q_4} \delta_5 LIFE_{t-i} + \varepsilon_t \quad (8)$$

This involves selecting the orders of the ARDL (p, q_1 , q_2 ,q_3 ,q_4,q_5) model in the six variables using Akaike information criteria (AIC). In the third and final step, we obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates.

3. Results and Discussion

3.1 Unit roots tests

Before we proceed with the ARDL bounds test, we test for the stationarity status of all variables to determine their order of integration. This is to ensure that the variables are not I(2) stationary so as to avoid spurious results. According to Ouattara (2004) in the presence of I(2) variables the computed F-statistics provided by Pesaran et al (2001) are not valid because the bounds test is based on the assumption that the variables are I(0) or I(1). Therefore, the implementation of unit root tests in the ARDL procedure might still be necessary in order to ensure that none of the variables is integrated of order 2 or beyond.

We applied the augmented Dickey – Fuller (ADF) and Phillips – Perron unit root test were conducted to examine whether each series of interest are stationary or not. The test regression included both a constant and trend for the levels and also for the first differences of the variables. The ADF and PP tests showed that all the series were non-stationary in level but stationary in the first difference (see Table 2a and 2b), that all variables are I(1).

Table 2a: τ ratios from ADF unit root tests

Variables	ADF tests including intercept and trend	
	Level*	First Difference**
GDP	-2.303645	-3.890704
K	-1.351059	-4.545250
L	-2.397156	-5.067466
H	2.545332	-3.944343
LIFE	-2.047078	-8.169328

Table 2b: Adj t-stat from Phillips-Perron unit root tests

Variables	PP tests including intercept and trend	
	Level*	First Difference**
GDP	-2.313427	-3.900965
K	-1.712561	-4.592819
L	-2.329836	-5.297553
H	9.082818	-3.946372
LIFE	-2.010571	-9.191768

3.2 Bounds tests for cointegration

In the first step of the ARDL analysis, we tested for the presence of long-run relationships in equation (4), using equation (5). We used a general-to-specific modelling approach guided by the short data span and AIC respectively to select a maximum lag order of 2 for the conditional ARDL-VECM. Following the procedure in Pesaran et al, we first estimated an OLS regression for the first differences part of equation (5) and then test for the joint significance of the parameters of the lagged level variables when added to the first regression.

Table 3 reports the results of the calculated F-statistics when each variable is considered as a dependent variable (normalized) in the ARDL-OLS regressions. The calculated F-statistics $F_{GDP}(GDP/K, L, H, LIFE)$ = 4.373 is higher than the upper bound critical value 4.01 at the 5% level. Also F_H(H/GDP, K, L, LIFE) = 4.791 is also higher than the upper-bound critical value 4.01 at the 5% level. Thus, the null hypotheses of no cointegration are rejected, implying long-run cointegration relationships amongst the variables when the regressions are normalized on both GDP_t and H_t variables. However, based on the growth theory, we used GDP_t as the dependent variable.

Once we established that a long-run cointegration relationship existed, equation (8) was estimated using the following ARDL (1, 2, 2, 2, 0) specification. The results obtained by normalizing on real GDP per capita, in the long run are reported in Table 4. The long run test statistics reveal that the capital and labour are the key determinants of the economic growth. It suggests that in the long run, an increase of one per cent in the capital is associated with an increase of 0.26 per cent in GDP. An increase of 1% in labour will increase GDP by 1.1%. The coefficient of expenditure on education is positive but quite low (i.e 0.08) and significant only at 12.6 per cent level, which implies that the impact from an increase in expenditure on education on GDP is very minimal and not quite significant.

Table 3: Results from bounds tests on Equation (5)

Dep Variable	F-stat	Prob	Outcome
GDP	4.373**	0.000012	Cointegrate
K	2.106	0.0001748	No Cointegrate
L	1.656	0.8361	No Cointegration
H	4.791**	0.6346	Cointegration
LIFE	2.598	0.1127	No Cointegration

Table 4: Estimated long run coefficients using the ARDL approach
Equation (8): ARDL(1,2,2,2,0) selected based on AIC

Dependent Variable: ln GDP_t

Regressor	Coefficient	t-stat	Prob
Constant	-1.8573	1.1279	-1.647[.119]
ln K	0.2625	0.0297	8.8518[.000]
ln L	1.0951	0.2453	4.4636[.000]
ln H	0.0804	0.0498	1.6157[.126]
LIFE	0.0133	0.0090	1.4696[.161]

Note: ***significant at 1% significance level
** significant at 5% significance level
*significant at 10% significance level

Diagnostic tests for serial correlation, normality, heteroscedasticity and functional form are considered, and results are presented in Table 5. These tests show that the long-run model passes all diagnostic tests in the first stage. The results indicate that the model passes the residual serial correlation test and the test for normality, proving that the error term is normally distributed. The functional form of the model is well specified and there is no existence of white heteroscedasticity in the model.

The results of the short-run dynamic coefficients associated with the long-run relationships obtained from ECM Equation (7) are given in Table 5. The changes in the relevant variables represent short-run elasticities, while the coefficient on the *ECT* term represents the speed of adjustment back to the long-run relationship among the variables. The results in Table 5 suggest that the immediate impact of changes on capital stock, labour and expenditure on education bear positive sign and are significant at the 1% level. On the contrary, life expectancy appears to have less significant impact on GDP in the short-run. Solow residuals or constant term has a negative sign and is statistically insignificant. The equilibrium correction coefficient, estimated -0.4256, is highly significant, has the correct sign, and implies a fairly moderate speed of adjustment to equilibrium after a shock. Approximately 43% of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current year. The Adj R^2 is 0.968, suggesting that such an error correction model fits the data reasonably well. More importantly, the error correction coefficient has the expected negative sign and is highly significant. This helps reinforce the finding of a long-run relationship among the variables in the model. Finally, the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMQ) plots from a recursive estimation of the model also indicate stability in the coefficients over the sample period (Figures 2,3).

4. Conclusion

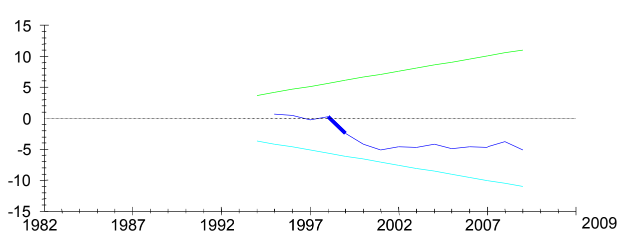
This study examines the long-run and the short-run relationships between human capital variable (specifically expenditure on education and life expectancy) and economic growth in Malaysia.Using an augmented aggregate production function growth model, we applied the bounds testing approach to cointegration, which is more appropriate for estimating in small sample studies. The data span for the study is from 1980 to 2009.

The results indicate that the traditional inputs i.e capital and labour are statistically significant in both the long-run and the short-run, having positive effects on economic growth in Malaysia. However, human capital variables appear to have an insignificant impact on growth in the long-run, but significant in the short run. This implies that an increase in expenditure on education did not lead to economic growth in the long run. Hence, we can conclude that Malaysia's economic growth basically is an input-driven i.e. by adding more and more resources into the same production function. Such growth is hard work and by the law of diminishing returns, cannot be sustained indefinitely. According to growth accounting method, there are three elements that contribute to the production of goods and services: labour, capital and technology (also known as total factor productivity (TFP)). Labour and capital, known collectively as the "factor of production", refer to the workforce and the capital goods (buildings, machines, vehicles, etc) that use in producing products or providing services. Technology or TFP refers to all the methods employed by labour and capital to produce goods or services more quickly and more efficiently. No one denies that all three elements must be present to some degree if an economy is to grow. But to sustain the economic growth, country must focused on the contribution of technology relative to that of factor of production.

Table 5: Error correction for the model
Dependent Variable: $\Delta \ln GDP_t$

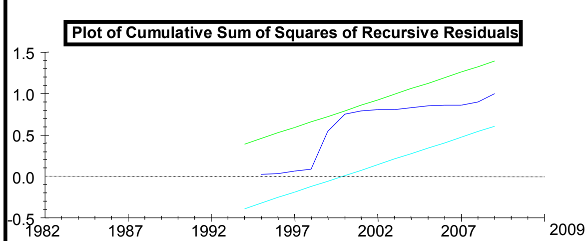
Regressor	Coefficient	Std Error	t-stat [Prob]
Constant	-0.7904	0.61661	-1.2819 [.215]
Δln K	0.2387	0.01617	14.7669 [.000]
Δln K(-1)	-0.0504	0.01678	-3.0059 [.007]
Δln L	0.4276	0.16895	2.5310 [.020]
Δln L(-1)	-0.3807	0.12641	-3.0119 [.007]
Δln H	0.0384	0.00965	3.9741 [.001]
Δln H(-1)	-0.0504	0.03003	-1.6770 [.110]
Δ LIFE	0.0057	0.00327	1.7289 [.100]
ECT(-1)	-0.4256	0.11883	-3.5817 [.002]
Diagnostics		Statistics	p-value
R^2		0.968	
S.E. of Regression		0.0095782	
Serial Correlation: $\chi^2(1)$		0.5756	0.448
Functional Form: $\chi^2(1)$		0.3894	0.533
Normality: $\chi^2(2)$		2.5437	0.280
Heteroscedasticity: $\chi^2(1)$		2.6048	0.107

Note: ***significant at 1% significance level
** significant at 5% significance level
*significant at 10% significance level



The straight lines represent critical bounds at 5% significance level

Figure 2. Plot of CUSUM of Recursive residuals



The straight lines represent critical bounds at 5% significance level

Figure 3. Plot of Cumulative Sum of Squares of Recursive Residuals

Empirical results in this paper suggest that some major review must take place on the Malaysian education system. Based on the empirical evidence, a large budget allocated to the education sector so far was unable to elevate worker to a higher level of knowledge. Education sector must produce more efficient workforce to increase the contribution of human capital to its economic growth. A large budget allocation to education sector must be utilized optimally through providing education that tailored to the nation's need. Further human capital investment in the labour market is also needed to produce skilled workers. Some studies in other countries also suggest that the level of effective human capital in the economy depends on total skills of the workforce and not just only based on formal education (Iyigun and Owen 1996). In this respect, the workforce must be trained to be skilled workers. The employers both in the public sector and the private organisations must be responsible equally in providing training facilities to their workers.

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