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Demikian surat keterangan ini dibuat agar dapat dipergunakan seperlunya.

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Sumber Dana	: Pribadi

Telah menyelesaikan penelitian yang berjudul *"The Determinants of Consumer Price Index in Malaysia"*. Di Semester Genap Tahun Akademik 2017-2018.

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Faizah Syihab, S.E., M.Sc., Fin.

Untuk melaksanakan penelitian dengan judul "The Determinants of Consumer Price Index in Malaysia" di Semester Genap Tahun Akademik 2017-2018.

Adapun ruang lingkup penugasan meliputi :

1. **Membuat proposal sesuai dengan topik tersebut di atas**
2. **Melaksanakan penelitian**
3. **Melaporkan secara tertulis hasil penelitian setelah kegiatan selesai.**

Kami berharap Bapak/Ibu dapat melaksanakan tugas ini dengan sebaik-baiknya sesuai dengan ketentuan yang berlaku di Universitas Trilogi. Atas perhatian dan kerjasamanya diucapkan terima kasih.

Jakarta, 2 Juli 2018

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LAPORAN AKHIR PENELITIAN

THE DETERMINANTS OF CONSUMER PRICE INDEX IN MALAYSIA

PENYUSUN:

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UNIVERSITAS TRILOGI

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Abstract

The objectives of macroeconomic policy are to ensure the stability of economic growth. The most well known and widely quoted economic indicator is the CPI (Consumer Price Index). Generally, it represents a measurement of our expenses on goods and services we use to meet our day-to-day needs. Severe problems to the overall economy can be caused if the prices of consumer goods and services are abruptly changed. The present study aims to analyze the variables that influence the Consumer Price Index. In order to achieve the objective, we used Co-integration and Vector Error Correction approached. We observe six variables, namely, Gross Domestic Product, Money Supply, Export, Import (in Goods and Services), Exchange Rate and Lending Rate. By utilizing quarterly data from 2000 to 2010, this study applies these methods to find the best model and factors which can explain Consumer Price Index in Malaysia. The result indicates that in the long run, consumer price index has found to be positively influenced by gross domestic product, money supply, import, exchange rate and lending rate, whereas export is negatively affecting consumer price index. Long run elasticity of Price Level with respect to gross domestic product, money supply, export, import, exchange rate and lending rate are 0.97; 0.22; -1.31; 0.82; 0.63; 0.0000209 respectively. This study also finds that in short run, exchange rate of last year (2009) are found negatively related to CPI. Improvement in gross domestic product and money supply should be in the optimal level so that price level should be stable.

Keyword: ***Consumer Price Index, Co-integration, Vector Error Correction Model***

3. INTRODUCTION

Inflation means continuous rise in general price level of the economy. Inflation is process in which the price index is rising. This paper represents an attempt to examine the factors that can influence Consumer Price Index (CPI). By studying CPI, we will know the importance of this variable to such country (Case Study: Malaysia). It can be seen on how this variable affects the country's welfare. The focus of this paper is to study several independent variables which are Gross Domestic Product (GDP), Money Supply (MS), Export (EX), Import (IM) in Goods and Services, Exchange Rate (ER) and Lending Rate (DR) that may have influential correlation to the CPI. Data and information that are used in this paper consists of secondary data. Moreover, the data used is quantitative that will

explain by statistical method namely, *Co-integration and Vector Error Correction approached.*

The paper organized as follows. Section 2 presents a theoretical framework and literature review. In Section 3 we describe for the data information, model specification, and methodology used in the analysis. Section 4 depicts the result and analysis. And Section 5 is the conclusion.

2. LITERATURE REVIEW[1]

Lim and Papi (1997) have shed light on the determinants of inflation in Turkey. In this study, they have adopted time series data from 1970 to 1995. The authors have applied Johansen Co integration technique to find out results. The analysis concludes that money, wages, prices of exports and prices of imports have positive influence on domestic price level where as exchange rate exerts inverse effect on the domestic price level in Turkey.

Kuijs (1998) has analyse the determinants of three variables; the price level, exchange rate and output. In this study, the author uses time series data. Moreover vector autoregressive model has been applies to investigate the relationships. The study suggests that first lag of prices, 3rd lag of prices, 1st lag of excess money supply and 1st lag of output gap are directly related to price level where as 2nd lag of prices, 4th lag of prices and output gap are indirectly linked with price level in Nigeria.

Liu and Adedeji (2000) have established a framework for 2nalyse22 the major determinants of inflation in the Islamic Republic of Iran. Time series data has been chosen from 1989 to 1999 for this study. The authors have applied Johansen co-integration test and vector error correction model to examine the results. The analysis has found that lag value of money supply, monetary growth, four years previous expected rate of inflation are positively contributed towards inflation

[1] Australian Journal of Business and Management Research Vol.1 No.5 [71-82] | August-2011

while two years previous value of exchange premium is negatively correlated with inflation.

Laryea and Sumaila (2001) have examined the major determinants of inflation in Tanzania. For this analysis, they have used the time series data from 1992 to 1998 on quarterly basis. Ordinary least square method has been applied to have estimates. The analysis demonstrates that money supply and exchange rate have positive impression on consumer price index while gross domestic product has negative impact on consumer price index of Tanzania.

Mosayed and Mohammad (2009) have traced out the major determinants of inflation in Iran. They have used the time series data from 1971 to 2006 in their analysis. The study uses Autoregressive and distributed lag model to discover the long run estimates. The study probes that money supply, exchange rate, gross domestic product, change in domestic prices and foreign prices are presenting the effect of Iran or Iraq war on Iran's economy and all are positively contributing to the domestic prices in Iran.

Abidemi and Malik (2010) have critically 3nalyse3 the dynamic and simultaneous inter relationship between inflation and its determinants in Nigeria. Johansen co-integration technique and error correction model are used to 3nalyse determinants of inflation for the time series data for the period from 1970 to 2007. The findings reveal that growth rate of GDP, money supply, Imports, 1st lag of inflation and interest rate give positive impression on inflation rate. While other explanatory variables such as fiscal deficit and exchange rate are indirectly associated to inflation.

Olatunji et al. (2010) have examined the recent factors which are affecting inflation in Nigeria. Time series data has been selected for this particular study. In this paper they have applied Johansen technique to formulate the results. The study reveals that the previous year total imports, previous year consumer price index for food, previous year government expenditure, and previous year

exchange rate have negative influence on inflation rate. On the other side, previous year exports, previous year agricultural output, previous year interest rate and crude oil exports have negative impact on the rate of inflation in Nigeria.

3. DATA AND METHODOLOGY

3.1 DATA

This study uses quarterly data from 1st quarter 2000 to 4th quarter 2010. The analysis considers the effect of Gross Domestic Product (GDP), Money Supply (MS), Export (EX), Import (IM) in Goods and Services, Lending Rate (DR) and Exchange Rate (ER) to the Consumer Price Index (CPI) in Malaysia. The data are retrieved from International Financial Statistics (IFS) on International Monetary Fund (IMF) CD ROM.

3.2 EMPIRICAL METHODOLOGY

The current study focuses on demand and supply side determinants of inflation in Malaysia and to see causal relationships of some macroeconomic variables with inflation. For that purpose, we have included both the factors (demand side and supply side) as given in following equation form:

$$\mathbf{LCPI = \alpha + \beta_1 LGDP + \beta_2 LMS + \beta_3 LEX + \beta_4 LIM + \beta_5 LER + \beta_6 DR + \mu_1}$$

Dependent Variable:

LCPI = Log of Consumer Price Index based on 2000 prices

Explanatory Variables:

LGDP = Log of Gross Domestic Product

LMS = Log of Money Supply

LEX = Log of Exports of Goods and Services

LIM = Log of Imports of Goods and Services

LDR = Log of Lending Rate

LER = Log of Exchange Rate

α = Intercept

β = Slope Coefficients

μ_1 = Error term

Trended time series can potentially create major problems in empirical econometrics due to spurious regressions. Most macroeconomic variables are trended and therefore the spurious regression problem is highly likely to be present in most macro econometric models.

One way of resolving this is to take difference of the series successively until stationarity is achieved and then use stationary series for regression analysis. However, this solution is not ideal. Applying first differences of the variables leads to the loss of long run properties, since the models in differences have no long run solution.[2]

Co-integration (Engle and Granger, 1987) is an econometric technique for testing the relationship between non-stationary time series variables. If two or more series each have a unit root, that is *I*(1), but a linear combination of them is stationary, *I*(0), then the series are said to be co-integrated and will be in a long-run equilibrium and deviations from this equilibrium will be stationary.

The procedure in implementing Co-integration and Vector Error Correction Approach:

1. Unit Root Test

   A test of stationarity (or nonstationarity) that has become widely popular over the past several years is the **unit root test**.[3]

   $\Delta Y_t = \delta Y_{t-1} + u_1$

   Hypothesis Test: $H_0 : \delta = 0$ (non-stasioner, there is unit root)

   $H_1 : \delta < 1$ (stasioner, there is not unit root)

   If we accept H_0, then $\rho=1$, that is we have a unit root, meaning the time series under consideration is nonstasionary and vice-versa.

   When this situation occurs, the standard t-statistic is not eligible to use. The value $H_0 : \rho=1$ will be equal to $(\dot{\rho} - 1) / SE (\dot{\rho})$. Unfortunately, this value may

[2] Australian Journal of Business and Management Research Vol.1 No.5 [71-82] | August-2011

[3] Gujarati, N. Damodar. (2003). z Basic Econometrics, 4th edition.

not have the standard distribution for a t statistic. This means the possible samples is much flatter than the distribution of a statistic which means the standard critical values in the "t" tables are too small.

To overcome this problem, applying the Dickey-Fuller test is more appropriate.

2. Lag Length Selection

One of the issues that may occur in unit root test is the lag length selection. If the lag length in the stasionarity test is too small, the error term will not be assumed as white noise, as result we cannot estimate the actual error. The lag length selection is often used as a guide in model selection.

The basic information criteria are given by:

Akaike Information Criterion (AIC) : $-2(1/T) + 2(k/T)$

Schwarz Information Criterion (SC) : $-2(1/T) + k \log (T) / T$

Hannan-Quinn Information Criterion (HQ) : $-2(1/T) + 2 k \log(\log (T))/ T$

3. Johansen Co-integration Test

Johansen (1988) and Johansen and Julius (1990) have given new co-integration test which is test to see whether between two or more non-stationarity variables have long-run relationship or not.

Co-integration test can be done through VAR model with ordo P, as following equation:

$$Y_t = A_t Y_{t-1} + ... + A_p Y_{t-p} + B\pi_t + \varepsilon_t$$

Where: Y_t = vector-k in non-stasioner variables

π_t = vector-d in deterministic variables

Afterward, we can rewrite the equation to:

$$\Delta Y_t = \Pi Y_{t-1} + \sum_{i=1}^{p-1} r \, \Delta Yt - 1 + B\pi_t + \varepsilon_t$$

$$\Pi = \sum_{i=1}^{p} A - I \; ; r = \sum_{i=1}^{p} A$$

Johansen (1988) and Johansen and Juselius (1990) have proposed few steps for reliable results discussed below:[4]

1. For the application of Johansen Co-integration approach, all time series variables should be integrated of order one { I(1) }
2. Secondly, lag length would be chosen using VAR model on the basis of minimum values of Final Predication Error (FPE), Akaike Information Criterion (AIC), and Hannan and Quinn information criterion (HQ).
3. Next, appropriate model regarding the deterministic components in the multivariate system are to be opted.
4. Johansen (1988) and Johansen and Juselin (1990) examine two methods for determining the number of co-integrating relations and both involve estimation of the matrix Π. Maximal eigenvalue and statistic are utilized in 4th step for no of co-integrating relationship and also for the values of coefficients and standard errors regarding econometric model.

3.3 MODEL SPECIFICATION

A vector error correction model is a restricted vector autoregressive (VAR) designed for use with non stationary series that are known to be co-integrated. It may be tested for co-integration using an estimated VAR object.

The VECM has co-integration relations built into the specification so that it restricts the long run behaviour of the endogenous variables to converge to their co-integrating relationships while allowing for short run adjustment dynamics. The co-integration term is known as the error correction term (speed of adjustment) since the deviation from long run equilibrium is corrected gradually through a series of partial short run adjustments. The Short run equation is given below; Δ LCPI =

$$\left[a_0 + \sum_{j=1}^{q} \left(a_1 \Delta\, LCPI_{t-j} \right) + \sum_{j=1}^{q} \left(a_2 \Delta\, LGDP_{t-j} \right) + \sum_{j=1}^{q} \left(a_3 \Delta\, LMS_{t-j} \right) + \sum_{j=1}^{q} \left(a_4 \Delta\, LIM_{t-j} \right) + \sum_{j=1}^{q} \left(a_5 \Delta\, \mathrm{LER}_{t-j} \right) + \sum_{j=1}^{q} \left(a_6 \Delta\, DR_{t-j} \right) \right]$$

[4] Australian Journal of Business and Management Research Vol.1 No.5 [71-82] | August-2011

Where, Δ is difference operator, q is chosen lag length, a's are parameters, Ψ is error correction term or speed of adjustment term (calculated from long run results) and ε is error term. [5]

5. Granger Causality Test

The granger causality test for the case of two variables Yt and Xt, involves following steps as the estimation of the following VAR model;

$$Y_t = \alpha_1 + \sum_{i=1}^{p} b_i X_{t-1} + \sum_{j=1}^{q} r_i Y_{t-j} + e_1$$

$$X_t = \alpha_2 + \sum_{i=1}^{p} c_i Y_{t-1} + \sum_{j=1}^{q} d_j X_{t-j} + e_2$$

Where, it is assumed that both e1 and e2 are uncorrelated white noise error terms. [6]

4. RESULT AND ANALYSIS

4.1 Examination of Unit Root Test

Johansen Co-Integration technique requires having all variables used in the study to be integrated of order one {I(1)}. As shown below, the variables in the study already the Co-Integration requirements.

Table 1: Unit Root Test (refer to APPENDIX B.1)

Variables	Tests for Unit Root in	Include in Test Equation	P-statistic		Result
			Prob.	α	
LCPI	Level	Intercept	0.9765	5%	non-stasioner
		Trend and Intercept	0.2800	5%	
	1st Difference	Intercept	0.0001	5%	I (1)
LGDP	Level	Intercept	0.9188	5%	non-stasioner
		Trend and Intercept	0.9188	5%	
	1st Difference	Intercept	0.0023	5%	I (1)
LMS	Level	Intercept	0.9674	5%	non-stasioner
		Trend and Intercept	0.5136	5%	

[5] Australian Journal of Business and Management Research. Vol.1 No.5 [71-82] August-2011

[6] Australian Journal of Business and Management Research. Vol.1 No.5 [71-82] August-2011

	1st Difference	Intercept	0.0003	5%	I (1)
LEX	Level	Intercept	0.7464	5%	non-stasioner
		Trend and Intercept	0.7464	5%	
	1st Difference	Intercept	0.0000	5%	I (1)
LIM	Level	Intercept	0.8845	5%	non-stasioner
		Trend and Intercept	0.4489	5%	
	1st Difference	Intercept	0.0000	5%	I (1)
LER	Level	Intercept	0.7464	5%	non-stasioner
		Trend and Intercept	0.5315	5%	
	1st Difference	Intercept	0.0000	5%	I (1)
DR	Level	Intercept	0.5508	5%	non-stasioner
		Trend and Intercept	0.3723	5%	
	1st Difference	Intercept	0.0192	5%	I (1)

4.2 Lag Length Selection Process

Second step of Johansen Co-Integration technique is to determine the optimum lag using proper information. According the result, we used AIC (Akaike Information Criterion) and favourable lag length that is used in the current study is 2.

Table 2: Lag Length Selection (refer to APPENDIX B.3)

Lag	FPE	AIC	SC	HQ
0	2.55e-26	-39.06745	-38.77489*	-38.96092*
1	2.86e-26	-38.9853	-36.64481	-38.13302
2	1.35e-26*	-39.95202*	-35.56361	-38.354

* indicates lag order selected by the criterion calculated using E-Views 7

FPE : Final Prediction Error; AIC : Akaike Information Criterion HQ : Hannan-Quinn Information Criterion

4.3 No of Co-Integrated Vectors

At third step, the study found number of co-integrating equation by using trace statistic and maximum eigenvalue statistics. As the result from Table 3 & 4, it can be concluded that null hypothesis is being rejected. It shows high association between explanatory and dependent variables used in the current study.

Note: H_0: There is no co-integrated vector

H_1: There is co-integrated vector

Table 3: Trace Statistic (Refer to APPENDIX B.4)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.829111	237.7048	150.5585	0.0000
At most 1 *	0.697611	165.2685	117.7082	0.0000
At most 2 *	0.617078	116.2308	88.80380	0.0001
At most 3 *	0.556525	76.87392	63.87610	0.0028
At most 4 *	0.417773	43.53627	42.91525	0.0433
At most 5	0.304127	21.35956	25.87211	0.1647
At most 6	0.146472	6.493441	12.51798	0.4003

Table 4: Maximum EigenValue Statistics (refer to APPENDIX B.4)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.829111	72.43633	50.59985	0.0001
At most 1 *	0.697611	49.03765	44.49720	0.0150
At most 2 *	0.617078	39.35689	38.33101	0.0380
At most 3 *	0.556525	33.33765	32.11832	0.0353
At most 4	0.417773	22.17671	25.82321	0.1410
At most 5	0.304127	14.86612	19.38704	0.2010
At most 6	0.146472	6.493441	12.51798	0.4003

Co-integration equation:

LCPI = 0.003879 +0.968325LGDP +0.225932LMS -1.313994LEX +0.816394LIM +0.633791LER+2.09E-05DR

4.4 Vector Error Correction Model (Short Run Result)

Table 5 discuss about the short run result using Vector Error Correction Model. The values without bracket shows short run coefficients, values in round brackets are showing standard errors and square bracket depicts t-statistics.

Short run results of Vector Error Correction model (VECM) reveal that ER of two years before (2008) are found negatively related to CPI of 2010. GDP of two years before (2008), ER of last year (2009), and ER of last year (2009) and two years before (2008) are negatively affecting GDP of current year (2010). ER of last year (2009) is exerting negative influence on IM of current year (2010) while IM of last

year (2009) is exerting positive influence. GDP and MS of last year (2009) and GDP of two year before (2008) have positive impact on ER (2010). On the other side, ER of last year (2009) and ER of two year before (2008) have negatively on ER (2010). Impact of GDP of last year (2009) and IM of two years before (2008) is significantly negative on DR (2010). While ER of last year (2009) and ER of two years before (2008) has negative parameter coefficient in the short run with DR of current year (2010).

Table 5: Vector Error Correction Model (refer to APPENDIX B.5)

Error Correction:	D(LCPI)	D(LGDP)	D(LMS)	D(LEX)	D(LIM)	D(LER)	D(DR)
CointEq1	0.011030	-0.882497	-0.039228	-2.234234	-1.973449	1.481634	-17.49434
	(0.17025)	(0.85876)	(0.61592)	(1.26822)	(1.46719)	(0.46275)	(5.69071)
	[0.06479]	[-1.02765]	[-0.06369]	[-1.76170]	[-1.34506]	[3.20182]	[-3.07419]
D(LCPI(-1))	0.110878	0.548494	-0.816940	1.188524	1.603928	-0.384491	16.60777
	(0.20215)	(1.01967)	(0.73133)	(1.50586)	(1.74211)	(0.54946)	(6.75702)
	[0.54850]	[0.53791]	[-1.11706]	[0.78926]	[0.92068]	[-0.69977]	[2.45785]
D(LCPI(-2))	0.105912	-0.545872	0.193655	-1.494033	-2.811611	0.463082	-2.275142
	(0.21359)	(1.07737)	(0.77272)	(1.59108)	(1.84070)	(0.58055)	(7.13942)
	[0.49588]	[-0.50667]	[0.25061]	[-0.93900]	[-1.52747]	[0.79766]	[-0.31867]
D(LGDP(-1))	-0.004515	-0.434505	0.061893	-0.437141	-0.641469	0.408091	-6.437324
	(0.06816)	(0.34381)	(0.24659)	(0.50774)	(0.58740)	(0.18526)	(2.27830)
	[-0.06624]	[-1.26381]	[0.25100]	[-0.86096]	[-1.09206]	[2.20277]	[-2.82549]
D(LGDP(-2))	0.084063	-0.687893	-0.009361	-0.723793	-1.187950	0.367993	-4.005577
	(0.05824)	(0.29377)	(0.21070)	(0.43384)	(0.50191)	(0.15830)	(1.94672)
	[1.44341]	[-2.34161]	[-0.04443]	[-1.66833]	[-2.36688]	[2.32466]	[-2.05760]
D(LMS(-1))	0.113557	-0.351551	0.224301	-0.408408	-0.659121	0.486144	-6.981275
	(0.06361)	(0.32084)	(0.23012)	(0.47382)	(0.54816)	(0.17289)	(2.12611)
	[1.78532]	[-1.09572]	[0.97473]	[-0.86194]	[-1.20243]	[2.81191]	[-3.28358]
D(LMS(-2))	-0.016515	0.131223	0.082314	0.443080	0.412102	0.311844	-0.492057
	(0.06279)	(0.31671)	(0.22715)	(0.46772)	(0.54110)	(0.17066)	(2.09874)
	[-0.26303]	[0.41433]	[0.36237]	[0.94731]	[0.76160]	[1.82726]	[-0.23445]
D(LEX(-1))	0.125057	0.754371	0.149605	1.008160	1.553463	-0.531807	8.207401
	(0.08380)	(0.42272)	(0.30318)	(0.62427)	(0.72221)	(0.22778)	(2.80121)
	[1.49229]	[1.78458]	[0.49345]	[1.61493]	[2.15098]	[-2.33470]	[2.92995]
D(LEX(-2))	-0.084372	0.169841	0.054724	0.077255	0.736474	-0.665356	8.728657
	(0.06409)	(0.32326)	(0.23185)	(0.47740)	(0.55229)	(0.17419)	(2.14215)
	[-1.31655]	[0.52540]	[0.23603]	[0.16183]	[1.33348]	[-3.81968]	[4.07471]
D(LIM(-1))	-0.082687	-0.323178	-0.004589	-0.576417	-1.039374	0.282308	-3.683266
	(0.05576)	(0.28126)	(0.20173)	(0.41537)	(0.48054)	(0.15156)	(1.86384)
	[-1.48292]	[-1.14903]	[-0.02275]	[-1.38771]	[-2.16294]	[1.86268]	[-1.97617]
D(LIM(-2))	-0.019308	-0.091595	-0.027468	-0.031012	-0.393023	0.294466	-4.474854

	(0.03921)	(0.19779)	(0.14186)	(0.29210)	(0.33792)	(0.10658)	(1.31069)
	[-0.49241]	[-0.46309]	[-0.19363]	[-0.10617]	[-1.16305]	[2.76285]	[-3.41411]
D(LER(-1))	-0.117128	-0.827376	-0.040112	-0.727984	-1.152040	0.156902	-3.336496
	(0.06776)	(0.34181)	(0.24516)	(0.50479)	(0.58399)	(0.18419)	(2.26508)
	[-1.72850]	[-2.42056]	[-0.16362]	[-1.44214]	[-1.97272]	[0.85186]	[-1.47301]
D(LER(-2))	-0.159604	-0.939775	0.259047	-1.040269	-1.190903	0.248298	-3.712712
	(0.06948)	(0.35048)	(0.25137)	(0.51759)	(0.59879)	(0.18886)	(2.32250)
	[-2.29708]	[-2.68142]	[1.03053]	[-2.00983]	[-1.98884]	[1.31474]	[-1.59858]
D(DR(-1))	-0.000626	0.001574	-0.001854	0.001778	-0.009079	0.019172	0.366946
	(0.00646)	(0.03257)	(0.02336)	(0.04810)	(0.05565)	(0.01755)	(0.21584)
	[-0.09692]	[0.04832]	[-0.07936]	[0.03697]	[-0.16316]	[1.09234]	[1.70007]
D(DR(-2))	-0.001531	-0.006220	0.016745	-0.017124	-0.012212	-0.023631	-0.025499
	(0.00492)	(0.02481)	(0.01780)	(0.03664)	(0.04239)	(0.01337)	(0.16442)
	[-0.31127]	[-0.25069]	[0.94094]	[-0.46733]	[-0.28808]	[-1.76742]	[-0.15508]
C	-0.000159	0.013667	0.009821	0.008327	0.015050	-0.014091	0.031872
	(0.00117)	(0.00590)	(0.00423)	(0.00872)	(0.01008)	(0.00318)	(0.03911)
	[-0.13581]	[2.31576]	[2.32012]	[0.95537]	[1.49263]	[-4.43076]	[0.81496]
R-squared	0.633158	0.736618	0.374905	0.713999	0.714181	0.590156	0.761000
Adj. R-squared	0.413052	0.578588	-0.000152	0.542399	0.542690	0.344250	0.617601
Sum sq. resids	0.000183	0.004659	0.002397	0.010161	0.013599	0.001353	0.204588
S.E. equation	0.002706	0.013651	0.009791	0.020160	0.023323	0.007356	0.090463
F-statistic	2.876613	4.661272	0.999595	4.160821	4.164539	2.399921	5.306844

4.5 The Granger Causality Results

Based on table 6, the CPI is significantly affected by GDP and MS. Bi-directional relationship is found between GDP and CPI; CPI and MS; CPI and DR; MS and GDP; EX and MS.

Table 6: Granger Causality Results (refer to APPENDIX B.6)

Null Hypothesis:	Obs	F-Statistic	Prob.
LGDP does not Granger Cause LCPI	42	4.68751	0.0153
LCPI does not Granger Cause LGDP		0.77249	0.4692
LMS does not Granger Cause LCPI	42	6.78920	0.0031
LCPI does not Granger Cause LMS		0.49209	0.6153
LER does not Granger Cause LCPI	42	3.81226	0.0312
LCPI does not Granger Cause LER		1.95633	0.1557
DR does not Granger Cause LCPI	42	0.15164	0.8598
LCPI does not Granger Cause DR		7.83238	0.0015
LMS does not Granger Cause LGDP	42	7.57543	0.0017
LGDP does not Granger Cause LMS		4.71826	0.0150
LEX does not Granger Cause LGDP	42	1.10150	0.3430

LGDP does not Granger Cause LEX		1.36820	0.2671
LIM does not Granger Cause LGDP	42	1.17848	0.3190
LGDP does not Granger Cause LIM		1.77456	0.1837
LER does not Granger Cause LGDP	42	1.74231	0.1892
LGDP does not Granger Cause LER		1.72477	0.1922
DR does not Granger Cause LGDP	42	1.17992	0.3186
LGDP does not Granger Cause DR		3.42738	0.0431
LEX does not Granger Cause LMS	42	5.29356	0.0095
LMS does not Granger Cause LEX		4.97614	0.0122
LIM does not Granger Cause LMS	42	4.01614	0.0264
LMS does not Granger Cause LIM		4.33033	0.0204
LER does not Granger Cause LMS	42	0.90909	0.4117
LMS does not Granger Cause LER		3.07481	0.0582
DR does not Granger Cause LMS	42	1.04224	0.3628
LMS does not Granger Cause DR		1.37100	0.2664
LIM does not Granger Cause LEX	42	0.33528	0.7173
LEX does not Granger Cause LIM		2.03134	0.1455
LER does not Granger Cause LEX	42	1.39170	0.2614
LEX does not Granger Cause LER		1.15154	0.3272
DR does not Granger Cause LEX	42	2.00686	0.1488
LEX does not Granger Cause DR		3.91109	0.0288
LER does not Granger Cause LIM	42	1.04478	0.3619
LIM does not Granger Cause LER		1.26342	0.2946
DR does not Granger Cause LIM	42	2.62753	0.0857
LIM does not Granger Cause DR		4.01368	0.0264
DR does not Granger Cause LER	42	1.43227	0.2517
LER does not Granger Cause DR		2.17610	0.1278

5. CONCLUSION

The study carries out long run as well as short run estimates of some factors influencing consumer price index (inflation) in Malaysia. The results of the analysis reveal that in the long run gross domestic product, money supply, import, exchange rate and lending rate are contributed in raising consumer price index while consumer price index is bound to be decrease due to higher export.

In short run, the coefficient of error correction term is -0.01 suggesting 1 percent annual adjustment towards long run equilibrium. Long run elasticity of Price Level with respect to gross domestic product, money supply, export, import, exchange rate and lending rate are 0.97; 0.22; -1.31; 0.82; 0.63; 0.0000209 respectively.

Causality inferences show bi-directional relationship among few variables. But, gross domestic products and money supply are playing role to have significant effects on consumer price index. At the end, it is suggested that gross domestic products and money supply should not be higher than consumer price index as it will rise the price level in the economy.

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