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CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH IN ASEAN-5: LONG-RUN TENDENCIES AND SHORT-TERM ADJUSTMENT

EHSAN RAJABI

RESEARCH SCHOLAR

DEPARTMENT OF ECONOMICS

FACULTY OF ECONOMICS & MANAGEMENT

UNIVERSITI PUTRA MALAYSIA

MALAYSIA

JUNAINA MUHAMMAD

SR. LECTURER

DEPARTMENT OF ACCOUNTING & FINANCE

FACULTY OF ECONOMICS & MANAGEMENT

UNIVERSITY PUTRA MALAYSIA

MALAYSIA

ABSTRACT

A question of whether the government should intervene to correct for short-run fluctuations in economic activity has always been an interesting topic for economists. This paper investigates the impact of government expenditure on the economic growth in ASEAN-5 countries during 1980-2006 by using Pooled Mean Group. To examining both short run and long run effects, findings demonstrate that a large government expenditure influences the economic growth of countries negatively. This negative impact may be a sign of the lower productivity of the capital input in ASEAN-5 economies with a large government expenditure.

KEYWORDS
Pooled Mean Group (PMG), government expenditure, economic growth, ASEAN-5

JEL CLASSIFICATION
H59, O11, O53, C23

1. INTRODUCTION

There has been much debate on the role and the expenditure of government interference in the macroeconomic outlook throughout countries. As a result, governments attempt to stimulate economic growth through different instruments. Public expenditure has traditionally been a component of fiscal policy which is an instrument of the state to influence economic growth. Several models of government investment and growth have been designed to investigate the relation between government expenditure and economic growth.

Some empirical studies had evaluated impact of government expenditure on economic growth as like as Feder (1983), Landau (1983), Ram (1986), Grier and Tullock (1989), Romer (1990), Barro (1990, 1991), Levine and Renelt (1992), Devarajan *et al.* (1996), and Sala -i- Martin (1997). Most of the above studies used cross-section analysis to link measures of government spending with economic growth and produced varied evidence; the most common results show that government expenditure positively effect on economic growth (Abu-Bader & Abu-Qarn, 2003).

According to traditional Keynesian model, the expansion of government size may resist a recession. However, some works have an ongoing debate on the effects of government size on economic growth. Landau (1983), Engen and Skinner (1992), Folster and Henrekson (2001), and Dar and AmirKhalkhali (2002) find a negative relationship between government expenditure and economic growth. They believe that expanding government expenditure decreases return of government expenditure and over-expanding government expenditure will cause a crowded effect to private investment. In addition, government expenditure often goes to inefficient expenditure, which will cause a distorted allocation to the resource. When government expenditure raise, a government needs more taxes to support the expenditure, but expanding taxes will harm the economy (Chen & Lee, 2005). For the inconsistency of the above result, Vedder & Gallaway (1998) and Sheehey (1993) point out that the reason is that government expenditure and economic growth exist under a non-linear relationship.

On the contrary, when evaluating government expenditure patterns among Asian developing countries no clear trend can be recognized. This can be partially explained by the diverse assumptions of market forces implemented in these countries. In addition, a variety of government regimes are recognized which reflect the different roles of the State in different Asian developing countries (Sobhan, 1993). The main distinction is that the objective of government expenditure in developing countries is solely focused on economic expansion instead of maintaining the current level of economic wealth.

In addition, some researchers conclude that a significant positive relationship between government expenditure and economic growth is found only for developing nations but not for under-developed or developed nations (Gandhi, 1991; Ganti and Kolhuri, 1979; Murthy, 1993; Bairam, 1995).

This paper builds on the existing literature studying the long-term determinants of government expenditure and makes a step forward in two respects. First, there is an attempt to better disentangle cyclical from structural factors affecting the relation between government expenditure and GDP. Second, the panel dimension of the data set is exploited in such a way:

(i) To improve the power of statistical tests for the analysis of the dynamic properties of macroeconomic series through panel unit root and cointegration tests;

(ii) To obtain country-specific information on adjustment dynamics by means of pooled mean group estimation.

The aim of this paper is to examine the growth–government expenditure relationship in ASEAN-5 the twenty seven year period (1980 – 2006). The objective is to explore the determinants of the economic growth in ASEAN-5 and specifically to further investigate the impact of government expenditure on economic growth in ASEAN-5 during the period from 1980 through 2006 by using Pooled Mean Group (PMG) and Mean Group(MG) estimator s introduced by Pesaran, Smith, and Im (1999).

The paper is organized as follows. The next section provides theoretical framework. Section 3 describes the econometric methodology and data used for empirical analysis and section 4 proceeds to the empirical results. Finally, section 5 provides a summary of the empirical findings along with concluding remarks.

2. THEORETICAL FRAMEWORK

Government spending is particular interest in this work among the factors that determine the growth of an economy. While the Keynesian approach suggests fiscal policies to boost economic activity in times of recessions, the Classical economists oppose the government intervention. Classical economists believe that market forces quickly bring the economy to long-run equilibrium through adjustment in the market while Keynesians argue that the self-regulating mechanisms

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in the economy fail to lead the economy back to equilibrium mainly due to inflexibility in the market. Thus, Keynesians suggest expansionary fiscal policies as a solution for long recessions. Classical and Neoclassical believe fiscal policies ineffective on the grounds of the well-known crowding-out phenomenon, i.e., as public spending increases, public goods are substituted for private goods, thus causing lower private spending on education, health, transportation, and other goods and services. In addition, in a case that governments use heavily borrowing to fund spending, pressures in the credit market result in higher interest rates, which slow down private investment. The subject that government spending enhances economic growth has supported by the introduction of new growth theories. Dissimilar with the neoclassical growth model don't suggest the channels through which fiscal policy may have positively effect on long-run economic growth. The new growth theorists such as Romer (1986) and Lucas (1988) suggest that there is both a temporary effect from government expending and a possible long-run influence from fiscal policy on growth.

Many empirical works of growth has used the Solow growth accounting approach as foundation model (Solow, 1956). The Solow model includes two important subjects about long run growth. First, "exogenous technological change" effects on output, and secondly, nations will converge in terms of income per capita. Accordingly, because all growth sources are exogenous, government policy cannot change long run growth rates. Unlikely, The endogenous growth models provided by Romer (1986) and Barro (1990) indicate that long-run growth is endogenous in the sense of some endogenous variables. Therefore, long-run growth rates can differ across countries, and there is no convergence in income per capita necessarily.

This paper uses a generalization model of the commonly used growth-accounting model based on the concept of an aggregate production function. It is developed along the works suggested in Dar & AmirKhalkhali (2002). Accordingly, the standard growth accounting model can be written as:

$$lnY_{it} = \alpha_2 \, lnK_{it} + \alpha_3 \, lnL_{it} + A_{it} \tag{1}$$

Where Y stands for GDP, K for capital accumulation, L for the labor, and A measures total factor productivity growth. Note that α_2 and α_3 are the partial elasticity of output with respect to capital and labor, respectively. The subscript i indexes the countries and the subscript t indexes the time in the sample. It has assumed that export and government expenditure enhance total factor productivity growth and, by implication, economic growth. Accordingly, equation (2) has written as:

$$A_{it} = \alpha_1 + \alpha_4 lnX_{it} + \alpha_5 GS_{it} + u_{it} \tag{2}$$

Where X stands for export, GS gives the ratio of government expenditure over GDP, and u is the disturbance term. Finally, substituting (2) in (1) yields:

$$lnY_{it} = \alpha_1 + \alpha_2 \, lnK_{it} + \alpha_3 \, lnL_{it} + \alpha_4 lnX_{it} + \alpha_5 GS_{it} + u_{it} \tag{3}$$

3. RESEARCH METHODOLOGY AND DATA

The data set consist of observation for five countries in ASEAN in the period of 1980-2006. The lists of countries are as follow: Indonesia, Malaysia, the Philippine, Singapore, and Thailand. The annual data in term of natural logs for all variables are used. Real GDP per capita has selected as proxy with economic growth. The explanatory variables are namely K (capital, which is measured as the gross capital formation), L (labor, which is measured by Labor force participation rate, percentage of total population ages 15-64), X (export is measured by exports of goods and services, percentage of GDP), and GS (government expenditure is measured by ratio general government final consumption expenditure over GDP). All of data have obtained from World Development Indicator (WDI, World Bank CD-ROM 2008).

For using pooled data methods, we can consider to number of alternative methods that differ on the point to which method allows for constraining of heterogeneity across individuals. Fully heterogeneity and fully homogeneity are in two extremes of the methods. The simple pooled estimator is at one extreme that models are the fully homogeneous-coefficient and all slope and intercept coefficients be equal across countries. There are some other estimators between the two extremes such as Dynamic Fixed Effects (DFE) estimator contains all slope coefficients to be equal across individuals but different intercepts. The Mean Group (MG) estimator introduced by Pesaran *et al.*(1995) is at other extreme that models are fully heterogeneous coefficient. Moreover, Pesaran *et al* .(1999) introduce Pooled Mean Group (PMG) estimator. In PMG model, the long-run slope coefficients are identical across individuals but the short-run coefficients and the regression intercept are varied.

Following Pesaran *et al*. (1999), paper bases the panel analysis on the unrestricted error correction ARDL (*p, q*) representation:

$$\Delta Y_{it} = \phi_i Y_{i,t-1} + \beta_1 K_{i,t-1} + \beta_2 L_{i,t-1} + \beta_3 X_{i,t-1} + \beta_4 GS_{i,t-1} + \sum_{j=1}^{p-1} \theta_{ij} \Delta Y_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij} \Delta K_{i,t-j} + \sum_{j=0}^{r-1} \gamma_{ij} \Delta L_{i,t-j} + \sum_{j=0}^{s-1} \varphi_{ij} \Delta X_{i,t-j} + \sum_{j=0}^{v} \sigma_{ij} \Delta GS_{i,t-j} + \mu_i + u_{it} \tag{4}$$

Where μ_i represents the fixed effects, ϕ_i is a coefficient on the lagged dependent variable, β_1, β_2, β_3, and β_4 are coefficients on lagged explanatory variables, θ_{ij} is coefficient on lagged first-differences of dependent variable, and δ_{ij}, γ_{ij}, φ_{ij}, and σ_{ij} are coefficients on first-difference of explanatory variables and their lagged values. The model assumes that the disturbances u_{it} in the ARDL model has independently distributed across i and across t with zero mean and variance is positive ($\sigma^2_i > 0$). Further assuming that coefficients on first-difference of explanatory variables are less than zero therefore, there exists a long-run relationship between dependent and explanatory variables defined by:

$$Y_{it} = \omega_1 K_{it} + \omega_2 L_{it} + \omega_3 X_{,t} + \omega_4 GS_{it} + \eta_{it} \tag{5}$$

Where ω_1, ω_2, ω_3, and ω_4 as long-run coefficients, and η_{it} are stationary with possibly non-zero means (including fixed effects). Since equation (4) can be rewritten as:

$$\Delta Y_{it} = \phi_i \eta_{i,t-1} + \sum_{j=1}^{p-1} \theta_{ij} \Delta Y_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij} \Delta K_{i,t-j} + \sum_{j=0}^{r-1} \gamma_{ij} \Delta L_{i,t-j} + \sum_{j=0}^{s-1} \varphi_{ij} \Delta X_{i,t-j} + \sum_{j=0}^{v-1} \sigma_{ij} \Delta GS_{i,t-j} + \mu_i + u_{it} \tag{6}$$

Where η_{t-1} is the error correction term given by equation (5), hence coefficients on first-difference of explanatory variables are the error correction coefficients for measuring the speed of adjustment towards the long-run equilibrium. As explained above, the PMG estimator allows the intercepts, short-run coefficients and short-run adjustment to be dependent on country/individual characteristics with meaning differ across groups, but the long-run coefficients are homogeneous across countries/individuals. However, the MG allows for heterogeneity of all the coefficients and gives the estimation of short-run and long run coefficients. The MG approach comprises of estimating regressions for all countries/individuals separately and computing averages of the countries/individual-specific coefficients. The comparison of PMG and MG is like a trade-off between consistency and efficiency. If the long-run coefficients are identical across individual/countries the PMG estimator will be consistent and efficient and the MG estimator will only be consistent. If the long-run coefficients are not identical across individual/countries the PMG estimator will be inconsistent and the MG estimator will provide a consistent estimation of the mean of long-run coefficients across individual/countries. The long-run homogeneity restrictions or presence of heterogeneity in the means of the coefficients can be examined using Hausman test (Hausman, 1978) applied to the difference between the PMG and MG estimators of the long-run coefficients (Demetriades & Law, 2006).

This study uses above framework to examine the relationship of government expenditure and economic growth in ASEAN countries. Table 1 reports summary statistics of the variables used in the analysis and table 2 reports the correlation results.

TABLE 1: DESCRIPTIVE STATISTICS

Variable / Index	LG	LK	LL	LGS	LX
Mean	2.93	3.31	4.20	2.36	3.79
Median	3.00	3.33	4.20	2.37	3.87
Maximum	3.31	3.88	4.27	2.88	5.28
Minimum	0.00	2.43	4.12	1.74	2.22
Std. Dev.	0.37	0.29	0.03	0.21	0.84
Skewness	- 4.81	- 0.27	- 0.33	- 0.16	- 0.26
Kurtosis	33.74	2.77	3.05	3.09	1.80

All variables are included as log (variable)

TABLE 2: CORRELATION AMONG VARIABLES

Variable	LG	LK	LL	LGS	LX
LG		0.39	- 0.09	0.22	- 0.02
LK	0.39		- 0.34	0.11	- 0.23
LL	- 0.09	- 0.34		- 0.51	0.53
LGS	0.22	0.11	- 0.51		- 0.21
LX	- 0.02	- 0.23	0.53	- 0.21	

4. EMPRICAL RESULTS & DISCUSSION

Tables 3 show results of pooled OLS estimation with and without dummy variable for financial crisis that had happened in Asia. Breusch and Pagan Lagrangian Multiplier (LM) test will help us to choose between pooled OLS model and Random Effect Model (REM). LM is distributed as chi-squared with one degree of freedom under the null hypothesis. The calculated value (LM= 1.207) does not exceed the tabulated chi-squared value (124.34) therefore it lead us to conclude that OLS (pooled model) is more appropriate than the random effect or fixed effect models. The result of pooled OLS estimation suggests that model with government expenditure; physical capital and export variables promote economic growth.

Table 4 includes three alternative panel data estimators: MG, which imposes no restrictions; PMG, which imposes common long-run effects and static fixed effect models and Static Fixed Effect. The result in tables 4 is based on lagged one for the independent variables (The lag structure in tables 4 is (1,0,0,0,0,0) and the order of variables is as follows: dependent variable, K, L, GS and X), but the lag structure in Tables 6 is based on AIC and SBC respectively.[1]

TABLE 3: POOLED OLS ESTIMATION WITH (OUT) USING DUMMY VARIABLE FOR YEAR 1998

Variable	Estimation without Dummy Variable		Estimation with Dummy Variable	
	Coefficient	Prob.	Coefficient	Prob.
Constant	-7.60	0.16	-3.14	0.42
GS	0.46	0.01	0.34	0.01
K	0.54	0.00	0.43	0.00
L	1.80	0.14	0.87	0.33
X	0.02	0.57	0.06	0.03
Dummy variable	-	-	-1.23	0.00

TABLE 4: GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH IN ASEAN-5 BY POOLED OLS, MG AND SFE [Lag structure (1, 0, 0, 0, 0, 0)]
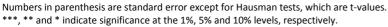
Variables	Pooled Mean Group	Mean group	Static Fixed Effect
K	-4.35(-2.11)**	-3.55(-0.96)	-1.36(-4.43)***
L	9.22(1.77)*	5.48(2.11)**	0.36(1.83)*
X	13.47(0.95)	12.54(1.31)	0.18(0.07)
GS	-5.20(-2.21)**	-5.20(-1.30)	-1.26(-2.78)***

Numbers in parenthesis are standard error except for Hausman tests, which are t-values.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

TABLE 5: THE SHORT-RUN EFFECT OF GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN ASEAN COUNTRY BY COUNTRY

Country	Variables	Pooled Mean Group	Group-Specific Estimates
Indonesia	K	-0.04(-1.73)*	0.15(1.36)
	L	0.08(2.20)**	0.08(1.87)*
	X	0.12(0.79)	0.74(0.71)
	GS	-0.05(-1.39)	-0.36(-1.87)
	Phi	-0.00(-1.36)	-0.02(-0.41)
Malaysia	K	-0.15(-2.54)**	-0.14 (-1.92)**
	L	0.32(4.89)***	0.29(4.15)***
	X	0.46(0.84)	4.13(1.86)*
	GS	-0.18(-1.74)*	-0.60(-3.12)***
	Phi	-0.03(-1.18)	-018(-2.53)**
Philippine	K	-0.04(-0.99)	-0.17(-1.14)
	L	0.08(1.03)	-0.08(0.79)
	X	0.12(0.67)	1.39(0.54)
	GS	-0.04(-0.93)	0.60(1.84)*
	Phi	-0.00(-0.91)	-6.42(-0.58)
Singapore	K	-0.18(-3.42)***	-0.36(-3.91)***
	L	0.38(6.55)***	0.42(5.88)***
	X	0.56(0.84)	1.14(-1.25)
	GS	-0.21(-2.20)**	-0.05(-3.36)***
	Phi	-0.04(-1.90)*	-0.06(-1.88)*
Thailand	K	-0.06(-2.00)**	-0.17(-1.36)
	L	0.13(2.69)***	0.16(2.78)***
	X	0.19(0.91)	0.25(0.18)
	GS	-0.07(-1.66)*	-0.57(-2.19)**
	Phi	-0.01(-1.74)*	-0.01(-0.17)

Numbers in parenthesis are standard error except for Hausman tests, which are t-values.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

The comparison between MG and PMG is based on the Hausman test. Because of the time span of the panel data is only 27 years (1980 - 2006), the MG estimator suffers from too few degrees of freedom. The Hausman test statistic fails to reject the null hypothesis which indicates the data do not reject the restriction of common long-run coefficients. Hence, the MG estimator is not useful like the PMG estimator. Therefore we focus on the PMG results.

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[1]. These estimations have done by using the GAUSS program written by Shin, Y (Department of Economics, University of Edinburgh)

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These results reveal that the signs of the long-run coefficients do not remain similar to those obtained by OLS and do not consistent with Keynesian theory mutually. The OLS result consists with Keynesian theory but the result are different from PMG estimation. In long run, the coefficients of physical capital and government expenditure are negative sing and statistically significant. The negative sign of coefficient of government expenditure consists with some studies such as Dar and Amirkhalkhali (2002) that find a negative relationship between government expenditure and economic growth. The static fixed effect estimator also demonstrates same result. However, in short-run, the coefficient of government expenditure in level is positive and significant, but that coefficient in first difference is negative and insignificant.

TABLE 6: THE EFFECT OF GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN ASEAN-5 COUNTRIES (Long-run coefficients)

Dep. variable: Y	AIC for lag structure				SBC for lag structure			
	Mean group	Pooled mean group	Hausman test	Static Fixed Effect	Mean group	Pooled mean group	Hausman test	Static Fixed Effect
Long-run coefficients								
K	-377.36 (-1.01)	-1.29 (-2.31)**	1.02 (0.31)	-1.36 (-4.43)***	-377.38 (-1.01)	17.89 (0.34)	1.14 (0.28)	-1.36 (-4.43)***
L	672.95 (1.00)	3.40 (4.01)***	0.99 (0.32)	0.36 (1.89)*	672.63 (1.00)	-43.78 (-0.38)	1.17 (0.28)	0.36 (1.89)*
X	-4099 (-1.00)	32.49 (4.59)***	1.02 (0.31)	0.18 (2.50)**	-4093 (-1.00)	20.50 (0.39)	1.12 (0.29)	0.18 (2.50)**
GS	383.04 (0.99)	-1.99 (-2.20)**	1.00 (0.30)	-1.26 (-2.78)***	383.20 (0.99)	-26.43 (-0.44)	1.16 (0.28)	-1.26 (-2.78)***
No. of countries	5	5		5	5	5		5

Numbers in parenthesis are standard error except for Hausman tests, which are p-values.
***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

TABLE 7: THE EFFECT OF GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN ASEAN COUNTRIES (Error correction coefficients and Short-run coefficients)

Convergence coefficient	0.04 (2.04)**	0.07 (-0.78)
Long-run coefficients		
K	-0.07 (-2.04)**	0.03 (0.17)
L	0.17 (2.04)**	0.10 (0.86)
X	-0.80 (-2.04)**	3.92 (1.80)*
GS	0.10 (2.04)**	0.25 (0.98)
Short-run coefficients		
△GDP(-1)	0.00	0.00
△K	-0.04 (-1.00)	-0.14 (-1.00)
△K(-1)	-0.02 (-1.00)	-0.04 (1.00)
△L	0.02 (1.00)	0.05 (1.00)
△L(-1)	0.02 (1.00)	0.04 (1.00)
△X	-0.12 (-0.10)	-2.96 (1.68)*
△X(-1)	-1.65 (-1.60)	-3.27 (-1.63)
△GS	-0.22 (-1.38)	-0.29 (-1.19)
△GS(-1)	-0.23 (-1.48)	-0.22 (-1.48)

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

5. SUMMERY AND CONCLUSION

Interest in economic growth has always been at the center of the literature in development economics and it is one of the most fascinating topics in macroeconomics. Among the factors that determine the growth of an economy, government spending is of particular interest in this work. A subject of intense debate for economists has been whether the government should intervene to correct for short-run fluctuations in economic activity. While the Classical economists oppose intervention, the Keynesian school of thought advocates the use of fiscal policies to boost economic activity in times of recessions.

This paper investigates the impact of government expenditure on economic growth in ASEAN countries during 1980 -2006. Working with a panel of cross-country observations, the paper estimates a model of short and long-run effects using the Pooled Mean Group estimator developed by Pesaran, Shin, and Smith (1999). However, the result of pooled OLS estimation suggests that the variables including government expenditure, physical capital, and export promote economic growth, but the signs of government expenditure and capital in PMG estimation do not remain similar to those obtained by OLS and as a result, do not consistent with Keynesian theory mutually.

Consequently, our findings suggest that a larger government expenditure on ASEAN countries influences economic growth negatively. This negative impact may be a sign of the lower productivity of the capital input in ASEAN countries with a large government expenditure. The disadvantage of a large government sector, in general, likely reflects the presence of crowding-out effects that causes weak incentives to create more productive capital, which need new technologies. Accordingly, the governments should set the expenditure of government expenditure in term of providing the governance infrastructure critical for growth.

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