Empirical Analysis on Household Savings in Malaysia

Nur Liyana Mohamed Yousop, Wan Mohd Farid Wan Zakaria, Zuraidah Ahmad, Ahmad A'thif Abdul Manan,

Faculty of Business and Management, Universiti Teknologi MARA, Segamat, Johor, Malaysia

Corresponding author e-mail: nurliyana@uitm.edu.my

Abstract **- The Malaysian household saving growth has shown weakened patterns from year to year. Low-income level, overspending and black swan economic events result in nosedived household savings. To explain this issue, this study empirically examined factors affecting household savings in Malaysia. The analysis was based on time-series data gathered from World Bank Data, CEIC Data and Department of Statistic of Malaysia from 1970 until 2018. The ordinary least square (OLS) regression analysis was used to examine the significant relationship among dependent variable (household savings, proxy gross domestic savings) and independent variables which consist of interest rate, inflation rate, age dependency ratio, consumption expenditure and income. The findings from this study reveal that the interest rate and household consumption expenditure have significant negative relationships with the household savings, while age dependency ratio, inflation rate and income have insignificant relationships with the household savings.**

Keywords **–** *Household Savings, Macroeconomic Variables, Ordinary Least Square*

ARTICLE INFO

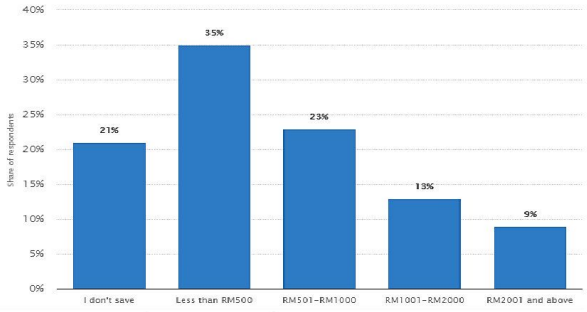
Received 28 March 2020
Received in revised form 10 May 2020
Accepted 1 Jun 2020
Published 30 Jun 2020

I. Introduction

Household savings can be defined as the difference between a household's disposable income (salaries, income from business and incomes either from investment or net capital gain) and its expenses on goods and services. Household savings are important because they act as an emergency cushion for any unexpected events for example; sudden loss of income due to accident or disability, retrenchment and unforeseen medical bills. Besides that, it is also vital for long term future planning such as retirement and child's education.

Savings will provide a positive effect on economic growth, health, and development, both at the household and domestic levels. However, Malaysian have fallen out of the saving habits (see Figure 1). A survey conducted by Statista Research Department (2019) shows that on average about 35 per cent of respondents saved less than RM500 monthly and only nine per cent saved more than RM2,000 monthly. There are two main factors affecting saving behaviour in Malaysia; (1) higher household debt and (2) rising in income inequality especially from the B40 income group (Surendran, 2018). A decline in household saving growth will significantly cause an increase in household debts. Even though an accumulating household debt may encourage economic growth and social welfare, when an economy faces unpredictable negative shocks, the household may be unable to pay its debt owing to a decrease in its income or wealth. The higher cost of urban living expenses, lack of saving awareness, and a luxurious lifestyle are the other factors that lead to poor saving

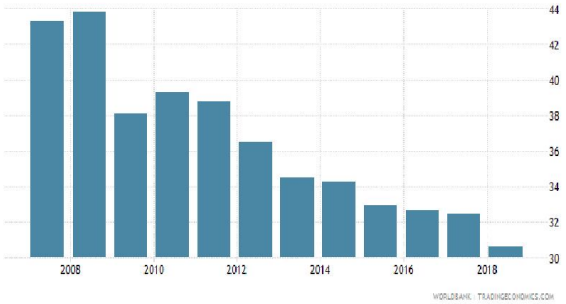
behaviour among Malaysians.



Source: Statista Research Department, Dec 4, 2019

Figure 1 Average saving per month among respondents in Malaysia as of October 2019

Lower savings by households also find reflection in their shrinking share of gross domestic savings. As a proxy of household savings, the deteriorated growth in the domestic savings (per cent of gross domestic product) from 2010 and onwards (see figure 2) has motivated this study to determine factors affecting household savings in Malaysia. Previously, many variables have been used as factors influencing household savings, both from primary and secondary data. However, the results are inconsistent and varied. Since an inadequate amount of savings will slow down the economic growth, therefore, this study tries to shed light on the other five factors related to the economy as independent variables which are the interest rate, inflation rate, age dependency ratio, consumption expenditure, and income.



Source: Trading Economic Website

Figure 2 Malaysia Gross Domestic Savings (% of Gross Domestic Product)

The sequence of this study will proceed according to the following section. The next section will highlight the review of past works of literature. The third section includes the methodology practices and the final section of this paper explains the results of the overall findings.

II. Literature Review

Saving is significant in enhancing the level of growth in the development of the economy (Hashmi & Sedai, 2016). It is also related to the investment since economists have been emphasizing it as a precondition for the growth and development of countries (Adelakun, 2015). Gross Domestic Savings (GDS) can be referred to as Gross Domestic Products (GDP) minus final consumption expenditure. GDS consists of household, private and public savings and can be expressed as a percentage of GDP. According to Khan, Teng, Khan, Jadoon and Rehan (2017), gross domestic saving helps the economic to spur and boost through its effect on the capital formation and investment. It also acts as a medium to attract foreign investors to invest in a country and indirectly encourages the level of Foreign Direct Investment. The importance of savings can be seen in both microeconomics and macroeconomics. A study conducted by Zhuk (2015) revealed that in the microeconomics level, household savings secure a stable level of consumption for households during financial difficulties. It is clear when a person loses their job due to any accidents that cause permanent disability and retirement, savings play the role to protect household in case of uncertain and ambiguous future situations. At macroeconomic level, aggregate household savings can be used as an alternative solution or source for future investment and

insurances that will assist a country to develop their economy by channelling the money from surplus units to deficit units.

Aggregate consumption and saving behaviours have a powerful influence on an economy's long-term productive capacity (Bonsu & Muzindutsi, 2017). Household final consumption expenditure (i.e household spending) is the market value of all goods and services (acquired from the local or international households), including durable products purchased by households. The expenditure includes many types of imputed expenditures, in which the imputed rent for services of owner-occupied housing is generally the most important one. The household sector does not only cover those who are living in a traditional household, but it also covers those who are living in communal and public establishments. A previous study found a significant effect between savings and spending. A study done by Verter and Osakwe (2014) suggested that there is an inverse relationship between household saving rate and household spending. An increase in savings could cause consumption expenditures to fall and this makes demand of goods and services to become more deficient and scarcer.

Most of the past studies predicted that household saving is positively related to the interest rate (Muhammad Hariz & Sahibzada, 2017; Moussavou, 2017; Khan, Bashir & Abbas 2014). Attractive interest rates may lead to higher saving rather than spending. Furthermore, the interest rate also provides an implication for saving behaviour. Interest rate itself does not only become the price of money for the borrower but reward for the lender. It also can be interpreted as "reward" of savings for delaying consumptions. Hence, interest rate plays important roles in economics of scale to stimulate and rouse consumption and investment, and at the same time will be able to attract consumers to make savings (Aizenman, Cheung, & Ito, 2017). Normally, the low-interest rate offered causes decrease in household savings but there are some shreds of evidence against this statement. A study done by Romero (2020) revealed that a decrease in one (1) per cent in interest rates will lead to an increase in saving rates by 0.2 per cent. This proves that the interest rate is not the only factor that influences saving rates, but other factors also contribute to them. This is supported by Palenzuela and Force (2016) who claimed that even in a low-interest-rate environment, household savings also increase due to changes in fiscal policy. An increase in public debt would make households put more funds in the savings as they are afraid that the government will increase the tax rate in the future. This is in line with the insight provided by the Ricardian equivalence theory. In addition to this, Yanjun, Hao and Shunjin (n.d) found that interest rate and saving are insignificant because of substitution effect (with lower interest rates, consumers substitute saving for spending) and controlled interest rate. Therefore, the market fails to give full play to its role in the regulation of the supply and demand of funds.

Age-dependency ratios (ADR) are a measure of the age structure of the population (OECD, 2007). Children age dependency ratio is defined as the number of children aged 0 to 14 years old. Old-age dependency ratio is defined as the number of individuals aged 65 and over per 100 while people of working age are defined as those aged between 20 and 64 (OECD, 2017). The projections for old-age dependency ratios used are based on the most recent "medium-variant" population projections. Previously, studies proved that the age dependency ratio has a significant relationship with saving behaviour and economic growth. The underpinnings theory of this belief is based on the life-cycle hypothesis where the age structure of the population will have a significant negative impact on the saving rate. This is supported by Salman and Zaib (2012) who proved that the saving and dependency rate have a negative relationship. A study by Yanjun et. al. (n.d) found that the elderly dependency ratio and children population dependency ratio have a significant negative and positive relationship on China's saving rate respectively. Meanwhile, Girma (2017) found a negative impact between gross domestic saving and age-dependency ratio in a long run but insignificant in the short run.

Next is inflation, where it refers to a situation of tough economic climate where people start to lose their purchasing power due to the constant increase in the general price level of goods and services, which is making dollars lose its value. In such a case, people need more money to purchase the same items i.e. a bottle of mineral water costs a dollar but now is doubled as compared to the previous time. Prior studies revealed that the relationship between household saving and inflation is mixed. According to Girma (2017); Khan and Rehan (2017); Khan, Bashir and Abbas (2014), inflations (i.e consumer price index) and household savings are negatively related. It occurs when most people try to maintain their level of consumption and this results in higher spending and contributes to a lower level of household savings. Furthermore, inflation pressures also lead to a decrease in household savings as there are doubt, uncertainty and insecurity about financial returns and earnings. On the other hand, a study conducted by Nuraisya Maisara and Juliana (2019), found the positive relationship between savings and inflation rate implies that the consumers are rational and make a decision based on their perceptions when it comes to allocating the lifetime resources over the period of their lives. Their result is consistent with the report from the Bank Negara Malaysia (2019) which revealed that higher inflation expectations could lead to a decline in current real household spending thereby preferring to save for precautionary reasons.

In the Keynesian model, saving depends on disposable income. A study conducted by Alvarez-Cuadrado & El-Attar Vilalta (2012) found several testable implications on saving choices of one generation namely (1) income inequality leads to inequality in saving rate and (2) as an individual gets older, saving rates will gradually increase. Previous studies by Ismail and Tendot Abu Bakar (2012) also found that saving and spending are highly related to household income levels.

Based on the above literature, the dependent variable of this study was gross domestic saving (a proxy of household savings) while NPISHs final consumption expenditure (a proxy of consumption expenditure), interest rate, age dependency ratio, consumer price index (a proxy of inflation) and adjusted net capital income per capita (a proxy of income) were used as independent variables. Thus, the following research hypotheses were established for empirical analysis:

H_1: There is a significant relationship between consumption expenditure and household savings.
H_2: There is a significant relationship between interest rates and household savings.
H_3: There is a significant relationship between the age dependency ratio and household savings.
H_4: There is a significant relationship between inflation rates and household savings.
H_5: There is a significant relationship between adjusted net national income per capita and household savings

III. Methodology

Data from this study were obtained from the World Bank Data, CEIC Data and Department of Statistic of Malaysia (DOSM) website. The sample was drawn on a yearly basis from 1970 until 2018 in Malaysia. Table 1 shows the selection of the dependent variable and independent variables along with its proxies, units and symbols.

Table 1 Dependent and Independent Variables

Variables	Proxies	Units	Symbols
Household savings	Gross domestic savings	Percentage	Y
Consumption expenditure	NPISHs final consumption expenditure	Percentage	X_1
Interest rate	Real interest rate	Percentage	X_2
Age dependency ratio	Working-age population	Percentage	X_3
Inflation rate	Consumer price index	Percentage	X_4
Income	Adjusted net national income per capita	Percentage	X_5

The analyses of this study were conducted step-by-step as in Figure 2.

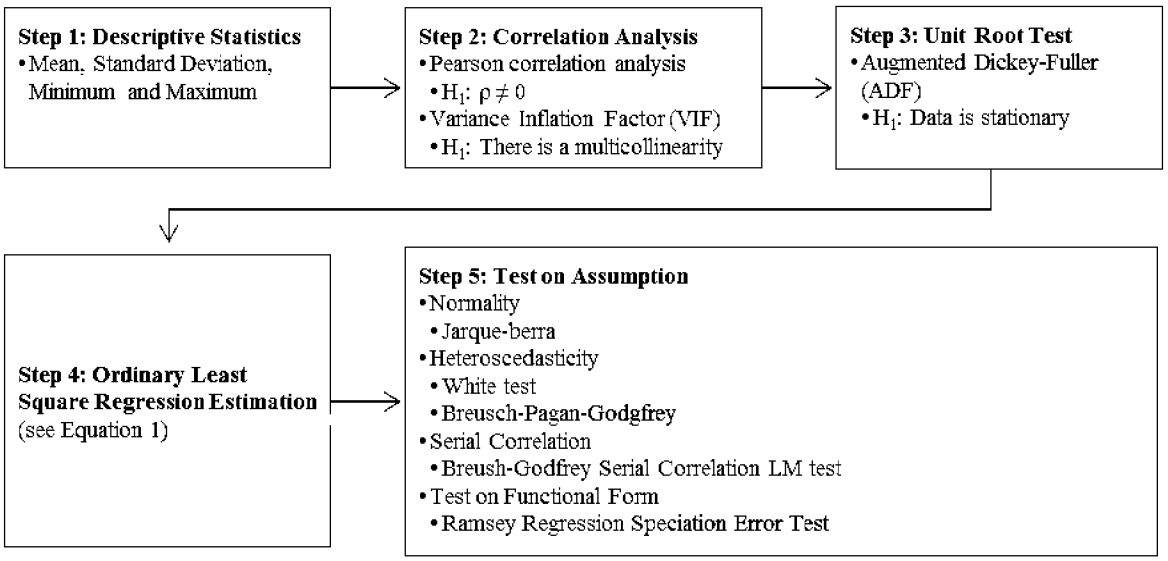


Figure 2 Data Analysis Procedures

The analysis of this study was started by establishing basic descriptive statistics of data set based on measures of variability and measures of central of tendency. Then, the correlation analysis was conducted to quantify the association between variables (e.g. relationship between an independent variable with the dependent variable or relationship between the dependent variable with another dependent variable). A high magnitude of the correlation coefficient means that the variables have a strong association with each other. If the correlation between one independent variable with the other independent variable is highly associated, therefore, the variance inflation factor (VIF) was performed to detect the presence of multicollinearity. Next, to examine stationarity, the unit root test was tested by using the Augmented Dickey-Fuller (ADF).

The ordinary least square (OLS) regression analysis was employed to examine the relationship between dependent and independent variables. The analysis was determined through time-series approaches and inference was drawn based on the regression analysis. The estimated regression equation for this study can be explained as follows:

$$\hat{Y}: \hat{\beta}_0 + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3 + \hat{\beta}_4 X_4 + \hat{\beta}_5 X_5 \quad (1)$$

where Y is a household savings, β_0 is a value of Y if other variables are zero (intercept), β_i (where i = 1, 2, 3, 4, 5) is the coefficient measuring the change in household savings with respective independent variables, X_1 is a consumption expenditure, X_2 is an interest rate, X_3 is an age dependency ratio, X_4 is an inflation rate and X_5 is an adjusted net national income per capita.

There are four basic assumptions associated with the ordinary least square linear regression. Linear model should produce error terms that have randomly distributed (normality), have a constant variance (homoscedasticity) and not correlated with themselves or other independents variables (linearity and serial correlation). Assumption (1): Observations of the error term should have normally distributed. Normality on the error term can be measured by using the Jarque-Bera statistic. If the p-value of the Jarque-Bera is more than a five per cent level of significance therefore the null hypothesis is failed to be rejected; the error term is normally distributed. Assumption (2): Observations of the error terms should have equal variance or homoscedasticity. If the variance is unequal or heteroscedasticity, therefore the null hypothesis is failed to be rejected. The regression model will be biased because the average value of the error term is not equal to zero and depend on the independent variables. Assumption (3): Observations of the error term should not be correlated with each other (i.e autocorrelation or serial correlation). Ordinary least square cannot differentiate one variable from the other when they are perfectly correlated. Serial correlation reduces the precision of the ordinary least square estimation. Assumption (4): Observations of the error terms should be linear and stable. The existence of nonlinear relationships in a linear regression model can be tested by using Ramsey's Regression Speciation Error Test (RESET). If this assumption is violated, therefore the effects of those regressors will be estimated as constant.

IV. Findings and Discussion

4.1 Descriptive Analysis

In this study, descriptive statistics were analysed to measure basic behaviour of the data. Table 2 indicates that on average, the household savings in Malaysia is ($\bar{x}$ = 35.1027) with standard deviation of (s = 7.7053). Age dependency ratio ($\bar{x}$ = 64.8032, s = 13.6842) has the highest value of the average value among the set of independent variables, followed by consumption expenditure ($\bar{x}$ = 25.7606, s = 0.8491), interest rate ($\bar{x}$ = 4.4390, s = 5.3086), adjusted net national income per capita ($\bar{x}$ = 4.1274, s = 5.6781) and inflation ($\bar{x}$ = 3.4842, s = 2.8851).

Table 2 Descriptive Statistics

Analysis	Y	X_1	X_2	X_3	X_4	X_5
Mean	35.1027	25.7606	4.4390	64.8032	3.4842	4.1274
Standard Deviation	7.7053	0.8491	5.3086	13.6842	2.8851	5.6781
Minimum	16.6397	24.3227	-6.7989	44.3000	0.2900	-11.8971
Maximum	48.6704	27.2487	22.9569	90.6900	17.3290	16.6790

Note: All variables measured by raw data; Number of samples for each variable is 48 observations.

4.2 Correlation Analysis

Results from correlation analysis between variables are reported in the Table 3. The results indicate that household savings have a significant positive relationship with consumption expenditure ($\rho_{Y, X1}$ = 0.6027, p < 0.05), significant negative relationships with interest rate ($\rho_{Y, X2}$ = -0.2973, p < 0.05),

age dependency ratio ($\rho_{Y, X3}$ = -0.6339, p < 0.05) and inflation ($\rho_{Y, X4}$ = -0.2645, p < 0.10). However, there is no significant relationship between household savings and adjusted net national income per capita ($\rho_{Y, X5}$ = 0.0927, p > 0.10).

Table 3 Correlation Analysis

Variables	Y	X_1	X_2	X_3	X_4	X_5
Y	1.0000	0.6027**	-0.2973**	-0.6339**	-0.2645*	0.0927

Note: All variables measured by raw data; Number of samples for each variable is 48 observations; **p-value<0.05; *p-value<0.10

A variance inflation factor (VIF) detects the relationship among independent variables in regression analysis (multicollinearity). According to results shows in Table 4, all centered VIF values are less than ten (VIF <10), therefore there are no multicollinearity issues. All variables are in good shape and multiple linear regression models can be conducted.

Table 4 Variance Inflation Factor (VIF)

Variables	Centered VIF
C	NA
X_1	6.1792
X_2	2.2135
X_3	6.7412
X_4	1.4529
X_5	1.8354

4.3 Unit Root Test

Results from the unit root test using the Augmented Dickey-Fuller test reveals that all variables are significant at the first order difference I(1) except for the age dependency ratio. Therefore, all data were transformed into the first order difference I(1).

4.4 Ordinary Least Square Regression Analysis

Based on the unit root results, Equation 1 was modified as follows:

$$D\hat{Y}: \hat{\beta}_0 + \hat{\beta}_1 DX_1 + \hat{\beta}_2 DX_2 + \hat{\beta}_3 DX_3 + \hat{\beta}_4 DX_4 + \hat{\beta}_5 DX_5 \quad \text{(Equation 2)}$$

where DY is the first order difference of household savings, β_0 is a value of Y if other variables are zero (intercept), β_i is a coefficient of each variable, β_i (where i = 1, 2, 3, 4, 5) is the coefficient measuring the change in household savings with the respective independent variables. DX_1 is the first order difference of consumption expenditure, DX_2 is the first order of interest rate, DX_3 is the first order of age dependency ratio, DX_4 is the first order of inflation rate and DX_5 is the first order of income (adjusted net national income per capita). Table 5 shows the summarized results of the ordinary least square regression analysis:

Table 5 Results on the Ordinary Least Square Regression

Variable	Coefficient	p-value
C	-0.1784	0.8144
DX_1	-0.1124*	0.0885
DX_2	-0.3279***	0.0000
DX_3	-0.4200	0.5625
DX_4	0.1538	0.1843
DX_5	-0.0373	0.5122
R-squared	0.6196	
Adjusted R-squared	0.5743	
F-statistic	13.6799***	
Durbin-Watson statistic	1.7951	

Note: All variables are measured by differencing the raw data to the first order difference (D); Number of samples for each variable is 48 observations; X_1=Consumption expenditure, X_2=Interest rate, X_3=Age dependency ratio, X_4=Inflation rate, X_5=Income (Adjusted net income per capita), ***p-value<0.01, **p-value<0.05, *p-value<0.10

The regression results are ($\hat{\beta}$ = -0.1124, p < 0.10) on the consumption expenditure and ($\hat{\beta}$ = -0.3279, p < 0.01) on interest rates where they have a negative significant relationship with the household savings. This indicates that in every one per cent increase in consumption expenditure, the household savings will decrease by 11.24 per cent and in every one per cent increase in interest rates, the household savings will drop by 32.79 per cent. The other variables are assumed to be constant.

The regression results are ($\hat{\beta}$ = -0.4200, p > 0.10) on the age dependency ratio, ($\hat{\beta}$ = 0.1538, p > 0.10) on inflation and ($\hat{\beta}$ = -0.0373, p > 0.10) on adjusted net national income per capita. The results are above ten per cent level of significant. Therefore, this indicates that the variables have insignificant relationships with the household savings. Table 6 and 7 show the summarized results of the above findings on the alternate hypothesis and the most influential variables towards household savings:

Table 6 Results on the Alternate Hypothesis

Research Objective	Hypothesis	Decision on Alternate Hypothesis	Statistical Analysis
To examine factors affecting household savings in Malaysia	H_1:There is a significant relationship between consumption expenditure and household savings.	Supported	Ordinary Least Square
	H_2:There is a significant relationship between interest rates and household savings.	Supported	
	H_3:There is a significant relationship between the age dependency ratio and household savings.	Failed to be supported	
	H_4:There is a significant relationship between inflation rates and household savings.	Failed to be supported	
	H_5:There is a significant relationship between adjusted net national income per capita and household savings.	Failed to be supported	

The results from Table 7 show that interest rates give the highest effect on the household savings in Malaysia due to the smallest value of probability value among the chosen independent variables (p = 0.0000). Next, consumption expenditure with a probability of 0.0885 (p = 0.0885) chosen as the second-highest variable gives an effect on the household consumption in Malaysia.

Table 7 Influential Variables

Research Objective	Ranking	Statistical Analysis
To identify which independent variable (s) have a significant effect against household savings	1. Interest rate 2. Consumption expenditure	Ordinary Least Square

The overall results in the regression model are fit since the F-test is significant at five per cent level of significance. This concludes that at least one independent variable is able to give an effect on the household savings. R-squared measures the proportion of total variation of the dependent variable as explained by the independent variables. The value of R-squared in this study is 0.6196. This indicates that 61.96 per cent changes in the household savings are explained by the independent variables and the balance of 38.04 per cent are explained by other factors. Based on the above findings, the proposed regression model was stated as follows:

$$\widehat{DY} = -0.1784 - 0.1124DX_1 - 0.3279DX_2 \quad \text{(Equation 3)}$$

where $\widehat{Y}$ is the predicted value of the household savings, DX_1 is the value of consumption expenditure and DX_2 is the value of interest rate.

4.5 Test on Assumptions

There are four principal assumptions which need to be fulfilled for unbiased results of the regression analysis as follows:

4.5.1 Normality of the error term distributions

The error terms of the regression model are normally distributed since the probability of the Jarque-Bera normality test is not significant at five per cent level of significant (Jarque-Bera = 2.421, p=0.8860). Hence, the null hypothesis of this test (i.e. the residuals are normally distributed) is failed to be rejected.

4.5.2 Homoscedasticity of the error term

The consistency of the variance of the regression residuals model can be explained by using the White and Breush-Pagan-Godfrey test of heteroscedasticity. The result from the test can be explained as follows:

Table 8 Test on Heteroscedasticity

Heteroscedasticity Test: White Test			
Observed R-squared	26.8094	Prob. Chi-square(5)	0.1407
Heteroscedasticity Test: Breusch-Pagan-Godgfrey			
Observed R-squared	8.0490	Prob. Chi-square(5)	0.1536

Results reported in Table 8 confirm that the variance of the regression error terms model is consistent (i.e. homoscedasticity), since the probability value of Chi-Square (5) of for the test statistic is not significant at five per cent level of significant. Hence, the null hypothesis of this test (i.e. the residuals are heteroscedasticity) is failed to be rejected.

4.5.3 Serial Correlation (Autocorrelation)

Breush-Godfrey Serial Correlation LM was performed to test the existence of serial correlation in the regression model.

Table 9 Test on Serial Correlation

Breush-Godfrey Serial Correlation LM Test			
Observed R-squared	0.6350	Prob. Chi-square (2)	0.7280

Based on Table 9, since the p-value of the probability chi-square is more than five per cent, therefore the null hypothesis of the serial correlation assumption is failed to be rejected. This result was supported by the analysis of the Durbin-Watson test (DW=1.7951) where a value near to 2.0 means that there is no serial correlation (autocorrelation) detected in the error term for the estimated regression model.

4.5.4 Linearity and Stability

Finally, the discussion of misspecification of the functional form of the regression model was also performed by using Ramsey (RESET) Test. The analysis reported in Table 10 shows that there is no misspecification of the functional form in the regression model, since all the probability values (i.e. t-statistic = 0.0479, p = 0.9620; F-statistic = 0.0002, p = 0.9620; Likelihood ratio = 0.0027, p = 0.9586) are not significant at five per cent level of significant. Hence, the null hypothesis (i.e. No misspecification on the residuals) is failed to be rejected.

Table 10 Test on Misspecification

	Value	**df**	**Probability**
T-statistic	0.0479	41	0.9620
F-statistic	0.0002	(1, 41)	0.9620
Likelihood Ratio	0.0027	1	0.9586

In conclusion, the estimated regression model has met the important requirement of the validity of the regression model. Therefore, the estimated regression model in this study produces valid and unbias results.

V. Conclusion

This research aims to investigate the relationship between household savings in Malaysia with consumption expenditure, interest rate, age dependency ratio, inflation and adjusted net national income per capita. The second objective of this study is to identify which independent variable (s) have a significant effect against household savings. The empirical analysis of this study concludes that two out of five independent variables are negatively significant with the household savings, which is consumption expenditure and interest rate. Theoretically, the higher the interest rate, the higher the household savings (Muhammad Hariz & Sahibzada, 2017; Moussavou, 2017; Khan, Bashir & Abbas 2014). The negative result in this study contradicts the existing knowledge and theory. However, this result is supported by Romero (2020) and Palenzuela and Force (2016). According to Bofinger and Ries (2017), this scenario is possible to occur when it is associated with weak global growth rate. Conradiction between both real analysis and monetary analysis towards interest rate and saving also contribute to this finding.

Next, the relationship between household savings and consumption expenditure also shows a significant negative relationship (Verter & Osakwe, 2014). In today's situation, people will expand more compared to savings. Even though the public have an intention and awareness to make a saving for the future, the environment such as the cost of today's household keeps increasing and this is not parallel with the increasing rate of the salary itself. The public today, do not have a choice where some of them need to make multiple jobs for a good living. In Malaysia, an increment of salary is not parallel with the increasing cost of household consumption. It means that inflation will be created due to increased cost. When inflation occurs, it will affect all the consumption cost, and everything becomes expensive. At the same time, another example such as cost of buying a house in Malaysia, shows that the price keeps increasing drastically and getting more expensive especially for young generation aged 30 years old and above who intend to buy a house in the urban areas. This environment will pressure them in deciding whether to buy a house or make savings as a priority. It is also observed that the housing price in Malaysia keeps increasing and gets more expensive every year.

References

Adelakun, O. J. (2015). An Investigation of the Determinants of Savings and Investment in Nigeria. *Issues inEconomics and Business*, *1*(2), 1. https://doi.org/10.5296/ieb.v1i2.8688

Aizenman, J., Cheung, Y. W., & Ito, H. (2016). The Interest Rate Effect on Private Saving: Alternative Perspectives. In *Journal of International Commerce, Economics and Policy* (Vol. 10). https://doi.org/10.1142/S1793993319500029

Alvarez-Cuadrado, F., & El-Attar Vilalta, M. (2012). Income Inequality and Saving. In *Oxford Bulletin of Economics and Statistics* (No. 7083). https://doi.org/10.1111/obes.12236

Bank Negara Malaysia. (2019). *Outlook and Policy in 2019*.

Bofinger, P., & Ries, M. (2018). Excess saving and low interest rates: Assessing theory and evidence from the Global Crisis. Retrieved from https://voxeu.org/article/excess-saving-and-low-interest-rates-theory-and-evidence

Bonsu, C. O., & Muzindutsi, P. (2017). Macroeconomic Determinants of Household Consumption Expenditure in Ghana: A Multivariate Cointegration Approach. *International Journal of Economics and Financial Issues*, *7*(4), 737–745.

Girma, G. (2017). Trends and Determinants of Gross Domestic Saving in Ethiopia. *Journal of Economics and Sustainable Development*, *8*(5), 72–81.

Ismail, R., & Tendot Abu Bakar, N. (2012). The relationship between income, expenditure and household savings in Peninsular Malaysia. *Malaysian Journal of Consumer and Family Economics*, *15*(1), 168–189.

Keynes, J.M (1936). *The General Theory of Employment Interest and Money*. London: Macmillan..

Muhammad Hariz, N. H., & Sahibzada, M. H. (2017). The Impact of Interest Rate on Economic Development: a Study on Asian Countries. *International Journal of Accounting & Business Management*, *5*(1), 180–188. https://doi.org/24924/ijabm/2017.04/v5.iss1/180.188

Hashmi, N. I., & Sedai, A. K. (2016). *Domestic Savings And Economic*. *14*(3), 2119–2127.

Khan, I. H., Bashir, A. K., & Abbas, G. (2014). Relationship Between Interest Rate and Household 's Savings in Pakistan. *International Journal of Innovation and Scientific Research*, *12*(1), 295–308.

Khan, M. I., Teng, J.-Z., Khan, M. K., Jadoon, A. U., & Rehan, M. (2017). Factors Affecting the Rate of Gross Domestic Saving in Different Countries. *European Academic Research*, *V*(8), 4261–4291.

Nuraisya Maisara, M. N. A., & Juliana, M. A. K. (2019). Determinants of Savings in Malaysia. *Insight Journal*, *4*, 12–20.

Moussavou, F. (2017). Determinants of Domestic Savings in Congo - Brazzaville. *Journal of Economics and Development Studies*, *5*(4), 79–92. https://doi.org/10.15640/jeds.v5n2a7

OECD. (2007). *Age Dependency Ratio*. Retrieved from https://stats.oecd.org/glossary/detail.asp?ID=7325

OECD. (2017). Old-Age Dependency Ratio. *OECD Publishing, Paris*, 122–124. https://doi.org/https://doi.org/10.1787/pension_glance-2017-22-en

Palenzuela, D. R., & Force, S. D. (2016). *Savings and Investment Behaviour in Euro Area.* Frankfurt am Main: European Central Bank. doi:10.2866/879078

Romero, P. P. (2020). *Getting High on Low interest Rates: How Falling Interest Rates Have Driven Savings Higher*. Munich: Euler Hermes Allianz Economic Research. Retrieved from https://www.eulerhermes.com/en_global/economic-research/insights/household-savings-and-interest-rate-dynamics.html

Salman, A., & Zaib, R. (2012). Effect of Age Dependency on Saving Rates. *International Journal of Organizational Innovation*, *5*(1), 163.

Surendran, S. (2018). Is it a concern that Malaysians are saving less now? *The Edge Market*. Retrieved from https://www.theedgemarkets.com/article/it-concern-malaysians-are-saving-less-now

Statista Research Department. (2019)

Yanjun, L., Hao, X., & Shujin, Z. (n.d.). *Population Aging ,Saving Rate and Long-term Economic Growth in China : Based on Dynamic CGE Model*. Retrieved from https://www.gtap.agecon.purdue.edu/resources/download/6468.pdf

Verter, N., & Osakwe, C. N. (2014). A Time Series Analysis of Macroeconomic Determinants of Household Spending in the Era of Cross-cultural Dynamics: Czech Republic as a Case Study. *Procedia Economics and Finance*, *12*(March), 733–742. https://doi.org/10.1016/s2212-5671(14)00400-6

Zhuk, M. (2015). Macroeconomic determinants of household savings in Ukraine. *Economics and Sociology*, *8*(3), 41–54. https://doi.org/10.14254/2071-789X.2015/8-3/3