MEASURING SUCCESSFUL LEADERSHIP OF PROCTER & GAMBLE IN INTERNATIONAL BUSINESS ENVIRONMENT THE US VIA A SEVEN FACTOR MODEL ON NET PROFIT

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ABSTRACT

One of The keys to bring P&G from a small business to a multinational corporation today is the spirit of innovation, continuous learning and change. Movement of net profit in Procter & Gamble in the US will reflect the business health of consumer system and the whole economy. Good business management requires us to consider the impacts of multi macro factors on net profit, and it contributes to promoting business plan and economic policies for economic growth and stabilizing macroeconomic factors. By data collection method through statistics, analysis, synthesis, comparison, quantitative analysis to generate qualitative comments and discussion; using econometric method to perform regression equation and evaluate quantitative results, the article analyzed and evaluated the impacts of SEVEN (7) micro and macroeconomic factors such as: stock price, cost, net sale, lending rate, inflation, GPD growth, S&P500, etc. on net profit of a big global leading company, Procter & Gamble (P&G) in the US in the period of 2014-2019, both positive and negative sides. The results of quantitative research, in a seven factor model, show that the increase in inflation, GDP (increasing too much) and decrease in lending rate ahas a significant effect on reducing P&G net profit with the highest impact coefficient, the second is decreasing SP500. This research finding and recommended policy also can be used as reference in policy for consumer good system management.

KEYWORDS: P&G Net Profit; GDP Growth; Inflationary; Risk Free Rate; Market Interest Rate

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INTRODUCTION

Procter & Gamble in the US maintained a higher growth rate than the industry average on all indicators of scale, quality, efficiency, and labor productivity.

P& G will provide branded products and services with superior quality and value to improve the lives of consumers in the world, present and for the next generations. Since then, consumers will help the company to be at the forefront of sales, profits and create value, allowing employees, shareholders and the community where it lives and works to prosper.

P&G's 20 leadership brands including Always, Ariel, Dawn, Fairy, Febreze, Head & Shoulders, Pantene, Pampers, and Tide will enable and inspire responsible consumption through packaging that is 100% recyclable or

reusable, launching more sustainable innovations, and building trust through transparency and sharing our safety science.

P&G focuses on creating practices of open innovation by: making the most of the skills and interests of people throughout the company as well as finding external partners.

Consumer good system in the US so far plays a key role in helping the whole economy. In the context that GDP growth in US has been stable during 2014-2019 and affected from China-Trump commerce war, it is necessary to evaluate impacts of seven (7) internal and external macro economic factors on firm performance, esp. P&G net profit. From these analytical results, we could suggest bank and government policies to encourage and stabilize the growth of consumer good system and stock market.

Looking at the below chart, we find out that P&G net profit moves in the same trend with GDP growth, although it fluctuates in a smaller range.

Figure 1

This study will calculate and figure out the impacts of seven (7) macro economic factors such as inflation, GDP growth, market interest rate, risk free rate, VNIndex, S&P500 and exchange rate on P&G net profit.

The paper is organized as follows: after the introduction it is the research issues, literature review and methodology. Next, section 3 will cover methodology and data and section 4 presents main research findings/results. Section 5 gives us some discussion and conclusion and policy suggestion will be in the section 6.

BODY OF MANUSCRIPT

Research Issues

The scope of this study will cover:

- Issue 1: What are the correlation and relationship among many economic factors: P&G net profit, interest rate, net sale, inflation, cost, S&P 500 and GDP growth?
- Issue 2: What are the impacts of above 7 macro economic factors on P&G net profit?
- Issue 3: Based on above discussion, we recommend some solutions regarding to consumer system management in incoming period.

This paper also tests two (2) below hypotheses:

- Hypothesis 1: An increase in lending rate will make P&G net profit declines.
- Hypothesis 2: An increase in inflation can increase pressure in P&G net profit.

Literature Review

Lina (2012) indicated that both the change of inflation rate and the growth rate of money supply (M2) are positive but insignificant to the banking industry stock return, the exchange rate is positive and significant to banking industry stock return and interest rate is negative and significant to banking industry stock return. Next, Sadia and Noreen (2012) found out exchange rate, and Short term Interest Rate have significant impact on Banking index. Macroeconomic variables like Money Supply, Exchange Rate, Industrial Production, and Short Term Interest Rate affects the banking index negatively where as Oil prices has a positive impact on Banking index.

Manisha and Shikha (2014) stated that Exchange rate, Inflation, GDP growth rate affect banking index positively whereas Gold prices have negative impact on BSE Bankex but none of them have significant impact on Bankex. Then, Winhua and Meiling (2014) confirmed that macroeconomic do have a substantial influence to the earning power of commercial banks.

Krishna (2015) investigated the nature of the causal relationships between stock prices and the key macro economic variables in BRIC countries. The empirical evidence shows that long-run and short-run relationship exists between macro economic variables and stock prices, but this relationship was not consistent for all of the BRIC countries. And Kulathunga (2015) suggested that all macroeconomic factors influence the stock market development. More precisely, volatile inflation rate and exchange rate together with higher deposit rate have curtailed the stock market development in Sri Lanka. Moreover, positive optimism created by the economic growth and the stock market performance during the previous periods tend to enhance stock market performance. Moreover, Duy (2015) mentioned through the evolution of interest rates and the VNI could see that the relationship between these two variables in the period 2005-2014 is the opposite. This relationship is shown in specific periods of the year the stock market proved quite sensitive to interest rates. When interest rates are low or high but the bearish stock market rally, and vice versa when the high interest rates the stock market decline.

Last but not least, Quy and Loi (2016) found that 3 economic factors (inflation rate, GDP growth rate, and exchange rate) impact significantly on real estate stock prices; but the relationship between 10-year Government bond yield and trading volume, and real estate stock prices was not found. Ahmad and Ramzan (2016) stated the macroeconomic factors have important concerns with stocks traded in the stock market and these factors make investors to choose the stock because investors are interested to know about the factors affecting the working of stock to manage their portfolios. Abrupt variations and unusual movements of macroeconomic variables cause the stock returns to fluctuate due to uncertainty of future gains.

Until now, many researchers have been done in this field, however, they just stop at analyzing internal macroeconomic factors on stock price or net profit.

Within the scope of this paper, we measure impacts of both internal and external macro factors on P&G net profit and suggest policies for bank system, US government, Ministry of Finance, Bank and relevant government bodies. We also analyze data throughout time series from 2014-2019.

METHODOLOGY AND DATA

This research paper establishes correlation among macro economic factors by using an econometric model to analyze impacts of seven (7) macro economic factors in the US such as: GDP growth, inflation, interest rate, exchange rate,... on P&G net profit.

In this research, analytical method is used with data from the economy such as inflation in USA and market interest rate, GDP growth rate, exchange rate (USD/VND). Data are included from 2014 -2019 with semi-annual data (10 observations in total). Data is estimated based on exchange rate and lending interest rates of commercial banks (average calculation). S&P 500 index data is from USA Stock exchange, data source (inflation, GDP) is from Bureau of Statistics. Beside, econometric method is used with the software Eview. It will give us results to suggest policies for businesses and authorities.

We build a regression model with Eview software to measure impacts of factors. P&G net profit is a function with 5 variables as follows:

$$Y (\text{P\&G net profit}) = f(x_1, x_2, x_3, x_4, x_5, x_6, x_7) = ax_1 + bx_2 + cx_3 + dx_4 + ex_5 + fx_6 + gx_7 + k$$

With: x_1 : GDP growth rate (g), x_2 : inflation, x_3 : cost, x_4 : lending rate, x_5 : net sale, x_6 : stock price; x_7 : S&P500

Beside, this paper also uses analytical and general data analysis method to measure and generate comments on the results, then suggest policies based on these analyses.

MAIN RESULTS

General Data Analysis

First of all, The below chart 1 shows us that Y has a positive correlation with cost:

Chart 1: Net Profit (Y) vs. Cost (C).

Next we find out that, based on the below scatter chart, Y (P&G net profit) has slightly negative correlation with inflation (CPI).

Chart 2: P&G Net Profit (Y) vs. Inflation (CPI).

Looking at the below chart 3, we also recognize that P&G net profit (Y) and GDP growth have negative correlation ship.

Chart 3: Y vs. GDP Growth.

Chart 4: Y vs. Sale.

We see that, net profit (Y) and net sale have positive correlation:

On the other hand, we could see statistical results with E view in the below table with 7 variables:

Table 1: Statistics for Macro and Micro Economic Factors

Unit: %

	Net profit	Net sales	Cost	P&G stock price	Lending rate US	GDP growth - US	Inflation US (CPI)	S&P500
Mean	72.72	9.35	36.66	84.24	0.04	2.24	1.76	2354.99
Median	72	10	37	82.745	0.0325	2.23	1.825	2331.12
Maximum	82	11	41	124.9	0.0525	2.92	2.96	2752.06
Minimum	65	3.9	32.6	63.13	0.0325	1.55	0.73	2043.94
Standard dev.	6.905	2.088	2.888	17.855	0.008	0.485	0.680	294.931

Looking at the above table, we recognize that standard deviation of SP500 and stock price are the highest values. Whereas standard deviation of GDP growth and lending rate are the lowest values.

If we want to see correlation matrix of these 8 macro variables, E view generate the below result in table 2:

Table 2: Correlation Matrix for 8 Micro and Macro-Economic Variables (GDP Growth, Inflation in US, Market Interest Rate, Cost, Net Sale and Stock Price)

Correlation Matrix								
	Y	NETSALE	STOCKPRICE	SP500	R	G	CPI	COST
Y	1.000000	0.372835	-0.721506	-0.642694	-0.668322	-0.215341	-0.081762	0.253150
NETSALE	0.372835	1.000000	-0.656042	-0.841495	-0.640265	-0.253027	-0.019091	0.926257
STOCKPRICE	-0.721506	-0.656042	1.000000	0.946058	0.818413	0.104278	0.082089	-0.514696
SP500	-0.642694	-0.841495	0.946058	1.000000	0.832833	0.173181	0.093920	-0.721665
R	-0.668322	-0.640265	0.818413	0.832833	1.000000	0.251969	0.358286	-0.589895
G	-0.215341	-0.253027	0.104278	0.173181	0.251969	1.000000	-0.612037	-0.037198
CPI	-0.081762	-0.019091	0.082089	0.093920	0.358286	-0.612037	1.000000	-0.262072
COST	0.253150	0.926257	-0.514696	-0.721665	-0.589895	-0.037198	-0.262072	1.000000

The above table 2 shows us that correlation among 8 micro and macro variables. An increase in cost and net sale might lead to an increase in P&G net profit. It also indicates that correlation between net profit (Y) and net sale and GDP growth in the US (0.37 and -0.2) is higher than that between Y and lending rate (-0.55) or between Y and SP500 (-0.6).

The below table 3 shows us that covariance matrix among 8 micro and macro economic variables. P&G net profit (Y) has a negative correlation with stock price and lending rate but has a positive correlation with cost and net sale.

Hence, an increase in inflation may have slight negative impact on in net profit.

Table 3: Covariance Matrix for 8 Micro and Macro Economic Variables

Covariance Matrix								
	Y	NETSALE	STOCKPRICE	SP500	R	G	CPI	COST
Y	3.924500	4.838000	-24.21070	-765.5567	-0.009512	-0.196400	-0.104450	1.374000
NETSALE	4.838000	42.90560	-72.78864	-3314.284	-0.030131	-0.763040	-0.080640	16.62280
STOCKPRICE	-24.21070	-72.78864	286.9129	9635.493	0.099596	0.813186	0.896656	-23.88592
SP500	-765.5567	-3314.284	9635.493	361545.2	3.597767	47.94057	36.41678	-1188.866
R	-0.009512	-0.030131	0.099596	3.597767	5.16E-05	0.000833	0.001660	-0.011611
G	-0.196400	-0.763040	0.813186	47.94057	0.000833	0.211956	-0.181704	-0.046920
CPI	-0.104450	-0.080640	0.896656	36.41678	0.001660	-0.181704	0.415841	-0.463020
COST	1.374000	16.62280	-23.88592	-1188.866	-0.011611	-0.046920	-0.463020	7.506400

Regression Model and Main Findings

In this section, we will find out the relationship between eight macro economic factors and net profit.

Scenario 1: Regression model with single variable: analyzing impact of cost (c.o) on P&G Net profit (Y)

Note: C: constant

Using E view gives us the below results:

Dependent Variable: Y
Method: Least Squares
Date: 02/26/20 Time: 11:22
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COST	0.183044	0.247314	0.740126	0.4804
C	2.639614	9.091832	0.290328	0.7789
R-squared	0.064085	Mean dependent var		9.350000
Adjusted R-squared	-0.052904	S.D. dependent var		2.088194
S.E. of regression	2.142720	Akaike info criterion		4.538885
Sum squared resid	36.72998	Schwarz criterion		4.599402
Log likelihood	-20.69443	F-statistic		0.547786
Durbin-Watson stat	1.543835	Prob(F-statistic)		0.480378

Hence, $Y = 0.18 * \text{cost} + 2.6$, $R^2 = 0.06$ SER = 2.1

Within the range of 10 observations (2014-2019) as described in the above scatter chart 1, coefficient 0.18, when cost increases, P&G net profit will increase.

Scenario 2: Regression model with 2 variables: analyzing impact of Inflation (CPI) on Net profit (Y):

Running E view gives us below results:

Dependent Variable: Y
 Method: Least Squares
 Date: 02/26/20 Time: 11:22
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COST	0.179907	0.273928	0.656765	0.5323
CPI	-0.050860	1.163829	-0.043701	0.9664
C	2.843985	10.78496	0.263699	0.7996
R-squared	0.064340	Mean dependent var	9.350000	
Adjusted R-squared	-0.202991	S.D. dependent var	2.088194	
S.E. of regression	2.290351	Akaike info criterion	4.738612	
Sum squared resid	36.71996	Schwarz criterion	4.829388	
Log likelihood	-20.69306	F-statistic	0.240677	
Durbin-Watson stat	1.554866	Prob(F-statistic)	0.792342	

Therefore, $Y = 0.17 \cdot \text{Cost} - 0.05 \cdot \text{CPI} + 2.8 R^2 = 0.06$, $\text{SER} = 2.29$

Hence, this equation shows us P & G net profit has a positive correlation with cost and negative relationship with inflation in USA. Esp., it is highly positively affected by cost.

Scenario 3: Regression model with 3 -6 variables: Adding factors into the above model

Table 4

	Co-Efficient			
	3 Variables	4 Variables	5 Variables	6 Variables
CPI	-0.81	-1.5	-0.6	-0.7
G	-1.5	-0.8	-1.4	-1.4
Cost	0.12	-0.8	-0.02	-0.02
Net sale		0.4	-0.06	-0.01
SP500				0.001
Stock price			-0.09	-0.1
C	9.8	14.6	28	24.3

Scenario 4: Regression model with 7 macro variables: adding lending rate (r) onto the above model.

Running E views gives us results:

Dependent Variable: Y
 Method: Least Squares
 Date: 02/26/20 Time: 11:25
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COST	0.040571	1.406381	0.028848	0.9796
CPI	-1.438117	4.751730	-0.302651	0.7907
G	-2.401390	6.407242	-0.374793	0.7438
NETSALE	-0.035211	0.741321	-0.047498	0.9664
STOCKPRICE	-0.171455	0.357907	-0.479049	0.6792
SP500	0.001747	0.011045	0.158156	0.8889
R	98.37911	622.2542	0.158101	0.8889
C	25.53222	33.86668	0.753904	0.5296
R-squared	0.607761	Mean dependent var	9.350000	
Adjusted R-squared	-0.765078	S.D. dependent var	2.088194	
S.E. of regression	2.774296	Akaike info criterion	4.869233	
Sum squared resid	15.39344	Schwarz criterion	5.111301	
Log likelihood	-16.34617	F-statistic	0.442704	
Durbin-Watson stat	2.373183	Prob(F-statistic)	0.824990	

$$Y = -2.4 * G - 1.4 * CPI + 98.3 * R + 0.001 * SP500 - 0.03 * NETSALE + 0.04 * COST - 0.17 * STOCKPRICE + 25.5,$$

$$R^2 = 0.6, SER = 2.7$$

Therefore, we see impacts of 7 micro and macro factors, with the new variable: lending rate, the above equation shows that P&G net profit (Y) has negative correlation with GDP growth, inflation, and net sale, whereas it has positive correlation with lending rate, SP500 and cost. We also recognize that GDP growth and lending rate, then CPI have the highest impact on P&G net profit, while SP500 just has a slightly impact on net profit.

DISCUSSION AND FURTHER RESEARCHES

Through the regression equation with above 7 micro and macroeconomic variables, this research paper used updated data from 2014-2019 to analyze the regression equation via E view in order to show that a slight increase in lending rate has a significant impact on increasing P&G net profit (Y) with the highest coefficient of impact, followed by an increase in CPI and increase in cost, then an increase in S&P500.

Data are from observations in the past 10 years, it is partly based on the market economic rules, and the research results are also affected by socio-economic characteristics in USA such as: efficiency of public investment, waste of public investment, enterprise bankruptcy, and investment in areas that increase GDP such as production, electricity, etc. or investing in healthcare, environment and education sectors. We have not yet considered the impact of these factors.

Besides, we can analyze impact of another macro factor, for example, deposit rate when we add this variable into our regression model of net profit. Furthermore, we can add unemployment rate or public debt increase into our econometric model to measure the impact of these extra factors on P&G net profit.

CONCLUSION AND POLICY SUGGESTION

Based on the above data analysis from our regression model, although low inflation during 2015-2016 is a good signal for P&G net profit, we would suggest the government, Ministry of Finance and FED consider to control inflation more rationally, i.e not increasing much and suitable with each economic development stage. Governmental bodies and bank system also need to apply macro policies to stimulate economic growth, however not decreasing lending rate too much, together with credit, operational and market risk management, corporate governance and controlling bad debt.

Generally speaking, managing P&G net profit depends on many factors, so the government need to use fiscal policy combined with monetary policies and socio-economic policies to reduce unemployment and stimulate economic growth, toward a good business management.

Finally, this research paper also helps to direct further future researches, for instance, we could add deposit rate and unemployment rate into our above econometric model to measure impacts of them on P&G net profit.

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