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SUSTAINABLE GROWTH MODEL: A CASE STUDY ON WALMART INC.

ABSTRACT: Purpose – The axle of this study is to estimate a company's sustainable growth by using an extension of DuPont System of financial analysis with the help of a case example of Walmart Inc.

Design/methodology/approach –The DuPont System is premised on return on equity of a firm, which is further decomposed into three components: net profit margin, total asset turnover and the equity multiplier. The extended DuPont System of financial analysis multiplies return on equity by the earnings retention rate to calculate sustainable growth, which is denoted by g_1 and g_2 .

Findings – Results indicate that the Walmart is expected to grow

at a rate of 13 percent. Sustainable growth is the highest level of growth in sales that a company can achieve using internally generated funds only. The retention rate and sustainable growth rate are stable from 2009 to 2018.

Originality/value – The study has attempted to measure the sustainable growth for Walmart by using sustainable growth model, which is primarily an extension of DuPont System. The study is very significant in the current situation when the economies worldwide are trembling. The study has used widely accepted sustainable growth model to assess the performance of Walmart Inc.

Key words: *Sustainable growth, DuPont system, Financial planning, Walmart*

JEL Codes: *G1, G2, L6, O4*

INTRODUCTION

A business that grows too quickly may find it difficult to fund the growth. A business that grows too slowly or not at all may stagnate. Finding the

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optimum growth rate is the goal for longevity of a business. Graham et al. (2002) say that when we refer to sustainable growth from financial analysis perspective, then the growth in sales revenue a company can achieve without raising any additional share capital is considered as sustainable growth. Which means the assets required to achieve growth in sales are funded by the retained earnings or by the debt only but not by any additional equity capital. Thus, the sustainable growth model talks about the growth, a company can sustain in long run because it is primarily funded by the retained earnings. In simple terms and with reference to a business, sustainable growth is the realistically attainable growth that a company could maintain without running into problems.

John C. Gardner et al (2011) discussed in their paper that “Sustainable growth is the maximum rate at which a company can increase sales while maintaining the target or optimal leverage ratio without any additional external equity financing. The sustainable growth model assumes that total owners’ equity for a company can only increase when retained earnings increase. The impact of this limitation on sales growth can be derived from the fundamental equation of accounting which states that assets must be equal to liabilities plus owners’ equity”. They further discussed that “an increase in total revenue must be accompanied by a proportionate increase in total assets. Ross, Stephen A et al. (2008) concluded that since any increase in total revenue is limited by the increase in total assets, growth in total revenue is limited by the increase in retained earnings”.

The basis for sustainable growth model is the extended DuPont system of financial analysis, where the return on equity, ROE, is decomposed into three components: net profit margins, total assets turnover and equity multiplier. Figure 2 exhibits a detailed analysis of DuPont system and interconnection of all the variables used for calculation of sustainable growth. If we carefully examine this figure, we can learn that any firm can prepare its proforma financial statements based on this extended DuPont¹ chart and also can calculate its sustainable growth with the help of these variables. The net profit ratio on the one hand helps financial analysts to forecast income statement and both vital components i.e. revenue and expenses and on the other hand can total asset turnover helps forecast the asset part of the balance sheet and the equity multiplier helps to forecast

¹ See Brigham, Eugene F. and Michael C. Ehrhardt. *Financial Management, Theory and Practice*, Twelfth Edition and see Thomson/Southwestern, Mason, OH, 2008 and/or Ross, Stephen A., Randolph W. Westerfield, and Bradford D. Jordan. *Fundamentals of Corporate Finance*, Eighth Edition, McGraw-Hill Irwin, New York, 2008 for a detailed discussion of the DuPont system of financial analysis.

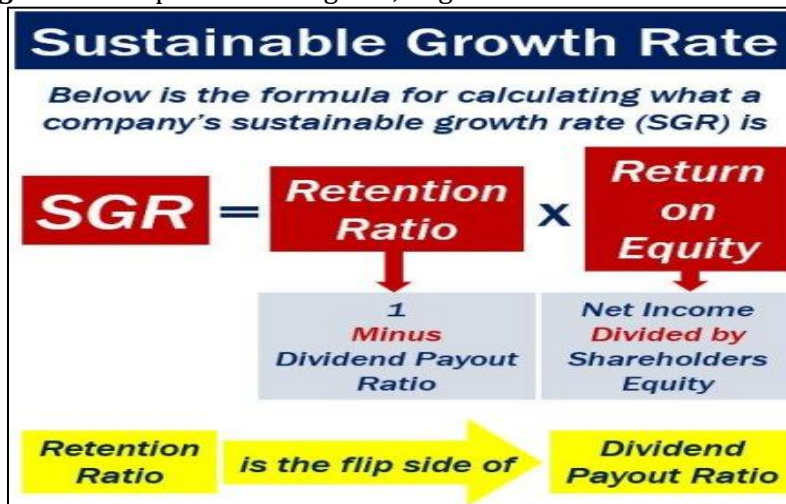
the liabilities and equity side of the balance sheet. We must mention that in proforma financial statements, the ROE is the beginning point where a firm need to decide its target returns on equity, based on which rest of the variables are forecasted.

Sustainable growth is the maximum growth rate that the firm can achieve without additional external financing beyond what is justified by the growth in retained earnings. The sustainable growth model assumes that the firm will maintain the target capital structure. The target capital structure will be the capital structure that minimizes the weighted average cost of capital for firm that maximizes the value of the firm, thus the total owners' equity for a firm can only increase when retained earnings increase.

COMPUTING SUSTAINABLE GROWTH

It is imperative for all businesses to pay serious attention to its growth which can be sustained in future as well. Since the long term growth is more important than only a short term bonanza. Calculation of Sustainable growth is shown in the figure 1 below.

Figure 1: Adopted from Brigham, Eugene F. and Michael C. Ehrhardt



Source: Financial Management, Theory and Practice, Twelfth Edition

Sustainable Growth (G) can be calculated with the help of 2 formulas shown below:

1. $G = ROE * (RR)$

$$\left[\frac{\text{Net Income}}{\text{Owners' Equity}} \right] * \left[1 - \frac{\text{Dividends}}{\text{Net Income}} \right]$$

OR

$$2. G = ROE (\text{Net Profit Margin} * \text{Total Asset turnover} * \text{Equity Multiplier}) * RR$$

Where, ROE= NPM * TAT * EM and RR (Retention Rate) calculation will be same as shown above

$$ROE = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average Total Assets}} \times \frac{\text{Average Total Assets}}{\text{Average Owners Equity}}$$

VARIABLES OF SUSTAINABLE GROWTH MODEL

Net Profit Margin (NPM): Is equal to net income or profits divided by total revenue, and represents how much profit each dollar of sales generates. The net profit margin illustrates how much of each dollar collected by a company as revenue translates into profit.

Total Asset Turnover (TAT): Is a ratio, which measures how well a company utilizes all of its current and fixed assets to generate revenue for the company. An accountant or analyst calculates the ratio starting with net sales and dividing by total assets.

Equity Multiplier (EM): Is total assets divided by stockholder's equity. Equity multiplier is a financial leverage ratio that evaluates a company's use of debt to purchase assets.

Assumptions of the Model

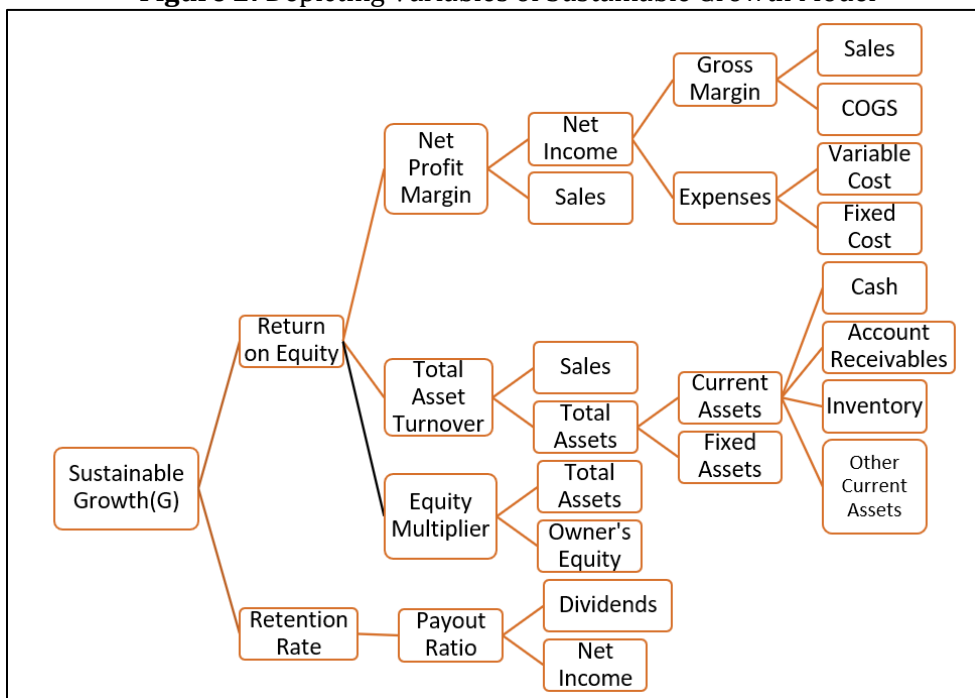
1. Total owners' equity for a company can only increase when retained earnings increase.
2. Any change in equity can only result from a change in retained earnings.

ABOUT WALMART INC.

Walmart Inc. (formerly Wal-Mart Stores, Inc.) is an American multinational retail corporation that operates a chain of hypermarkets, discount department stores, and grocery stores. Headquartered in Bentonville, Arkansas, the company was founded by Sam Walton in 1962 and incorporated on October 31, 1969. It also owns and operates Sam's Club retail warehouses. As of October 31, 2018, Walmart has 11,277 stores and clubs in 27 countries, operating under 55 different names. The company operates under the name Walmart in the United States and Canada, as Walmart de México in Mexico and Central America, as Asda in the United Kingdom, as the Seiyu Group in Japan, and as Best Price in India. It has wholly owned operations in Argentina, Chile, Canada, and South Africa. Since August 2018, Walmart only holds a minority stake in Walmart Brazil,

with 20% of the company's shares, and private equity firm Advent International holding 80% ownership of the company.

Figure 2: Depicting Variables of Sustainable Growth Model



Walmart is the world's largest company by revenue—over US\$500 billion, according to Fortune Global 500 list in 2018—as well as the largest private employer in the world with 2.3 million employees. It is a publicly traded family-owned business, as the company is controlled by the Walton family. Sam Walton's heirs own over 50 percent of Walmart through their holding company, Walton Enterprises, and through their individual holdings. Walmart was the largest U.S. grocery retailer in 2016, and 62.3 percent of Walmart's US\$478.614 billion sales came from U.S. operations.

ANALYSIS OF ROE AND SUSTAINABLE GROWTH FOR WALMART

The following table contains the data and ratios for the DuPont system financial analysis of return on equity and the analysis of sustainable growth for Walmart based on the annual data for the years from 2009 to 2018. The first five lines from total revenue to dividends contain the raw data needed to compute the ratios used in the DuPont system of financial analysis and for the sustainable growth rate. Over the period from 2009 to 2018, total revenue for Walmart increased from \$405,607million to \$500,343 million. Net income rose from \$13,400million to \$10,523 million but did not increase every year, i.e. net income declined. Total assets rose

from \$163,429million to \$204,522 million. Total owners' equity rose from \$72648million in 2009 to \$80,822 million in 2018. Dividends rose from \$3,746 in 2009 to \$6,124million in 2018. Dividends rose every year.

Table 1: Calculation of Sustainable Growth for Walmart Inc

Apple	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average
Total Revenue	405607	408085	421849	446590	468651	476294	485651	482,130	485,873	500,343	458107.3
Net Income	13400	14883	16993	16387	16999	16022	16363	15080	14293	10523	15094.3
Total Assests	163429	170407	180663	193406	203105	204,751	203,706	199,581	198,825	204,522	192239.5
Total OE	72648	71247	71247	75761	81738	81339	85937	83611	80535	80822	78488.5
Dividends	3746	4217	4437	5048	5361	6139	6185	6,294	6,216	6,124	5376.7
NPM	0.033037	0.03647	0.040282	0.036694	0.036272	0.033639	0.033693	0.031278	0.029417	0.021032	0.033181
TAT	2.481855	2.394767	2.335005	2.30908	2.307432	2.326211	2.384078	2.415711	2.443722	2.446402	2.384426
EM	2.249601	2.391778	2.535728	2.552844	2.48483	2.517255	2.370411	2.387018	2.468802	2.530524	2.448879
RR	0.720448	0.716657	0.738892	0.691951	0.684629	0.616839	0.622013	0.582626	0.565102	0.418037	0.635719
ROE	0.184451	0.208893	0.238508	0.216299	0.207969	0.196978	0.190407	0.180359	0.177476	0.1302	0.193154
ROE	0.184451	0.208893	0.238508	0.216299	0.207969	0.196978	0.190407	0.180359	0.177476	0.1302	0.193154
G	0.132887	0.149705	0.176232	0.149668	0.142382	0.121504	0.118436	0.105082	0.100292	0.054428	0.125062

The next four lines in the table contain net profit margin (NPM), total asset turnover (TAT), the equity multiplier (EM), and the earnings retention rate (RR), which are the ratios needed to compute return on equity (ROE) and sustainable growth (G). ROE is computed by two methods. The first line of ROE is computed by dividing net income by total owners' equity. The second line of ROE is computed by multiplying NPM by TAT by EM. If the two computations for ROE are the same, then the analysis is correct and is verified. The last line in Table 1 is the value of sustainable growth, G, and is calculated by multiplying sustainable growth by the dividend retention rate.

The net profit margin rises from 0.03304% in 2009 to 0.03318% in 2018. The highest NPM is 0.0428% 2011 and the lowest NPM is in 2018. The average NPM is 0.03318%. The total asset turnover is 2.48 in 2009 and falls to 2.44 in 2018. The average TAT is 2.38. TAT is the most volatile of the three variables affecting ROE. The equity multiplier is 2.24 in 2009 and rises to 2.53 in 2018. The average EM is 2.44. ROE is as low as 0.18445 in 2009 and 0.1302 in 2018and averages 0.19315 for the entire analysis period.

The Figure 3 depicts ratio values for Net Profit Margin, Total Asset Turnover, Equity Multiplier and Return on Equity for 10 years for Walmart Inc. Return on Equity is almost constant whereas the Net Profit margin is almost constant over the period of study.

Figure 3: Depiction of ROE for Walmart

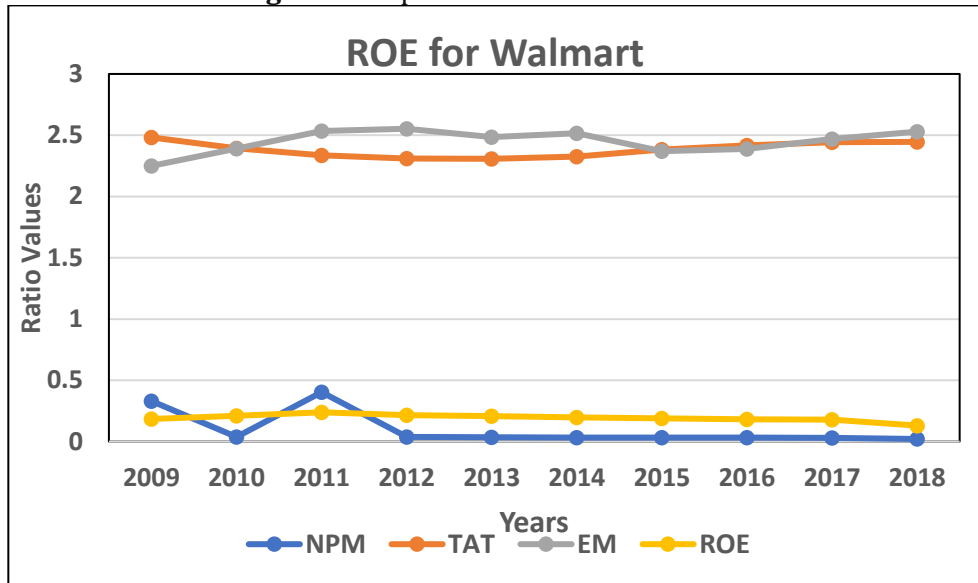
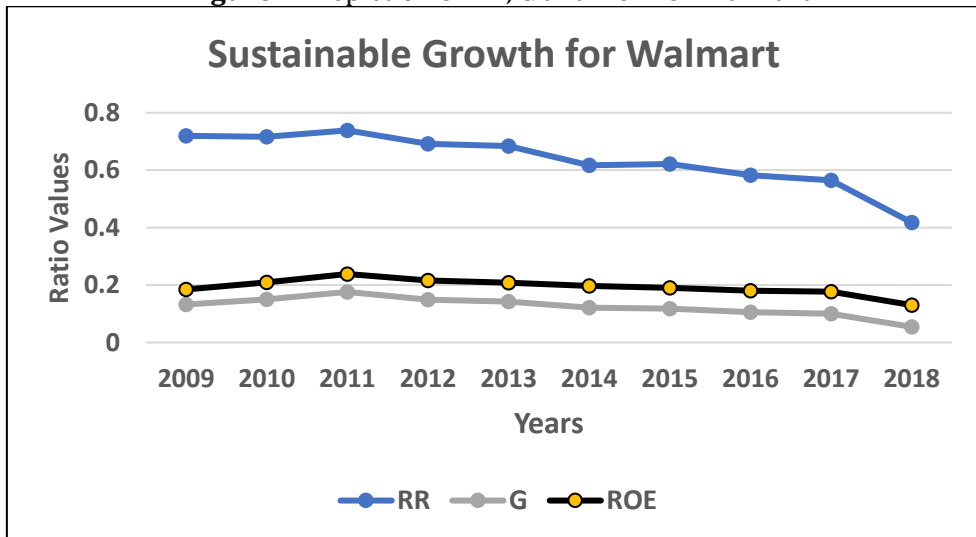


Figure 4: Depiction of RR, G and ROE for Walmart



The Figure 4 shows sustainable growth for Walmart and ROE and RR which are used to compute G. The retention rate is relatively stable from 2013 to 2018. Sustainable growth rate remains volatile over the analysis period.

CONCLUSION

Sustainable growth is the change in sale with respect to consistent financial policy. It is calculated using extended DuPont system which considers both return on equity and retention rate. Assets can only

increase by the amount of retained earnings in the firm plus the additional debt that can be supported by the additional equity. In this study, we demonstrate how to compute sustainable growth for Walmart for the period from 2009 to 2018 and discuss the impact of the different variables on sustainable growth for Walmart. This paper uses actual financial data for Walmart Corporation to conduct the financial analysis and predict sustainable growth.

This model allow analysts to dissect a company to determine the efficiency of the company, to know where the company is weak or strong and to quickly recognise what areas of the business to look at. These factors analyse both the financing policy and the performance of the company. However, the measure is still broad and is not a substitute for detailed analysis.

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