

THE DETERMINING OF WAL-MART EFFICIENCY USING “DU PONT” FORMULA

Iuliana Militaru, Elena Lucia Croitoru, Zoltan-Fabian Mehes¹

Abstract

The purpose of this paper is to study the efficiency of a company using “Du Pont” and implicitly the most common and important ratios (such as ROE and ROA) taking into consideration the cash flow and dividend payout. The impact that this figures have on the average company growth and how it could be improved lowering the dividend payout or improving the ROE and/or ROA.

Due to the importance of “Du Pont” formula this study aims to show how different indicators depend on one another when you are trying to run a financial analysis on a company. How different indicator or ratios can mean one thing in a certain situation that doesn't apply in general, especially when the analysis scope is to find a sustainable growth.

Key Words: Du Pont formula, sustainable growth, ROE, ROA.

JEL Classification: G30, G32, G35, M20, O40

1. Introduction

In financial management a common form of analyzing the financial statement is through ratios that clearly illustrates the situation of the company. The positive outcome of this analysis is that you can find out if it's a good opportunity for investment or not. In this study we will use: Net Profit Margin (NPM), Asset Turnover (Asset T/O), Financial Leverage (FL), Return on Equity (ROE), Capital Ratio (CR), Dividend Payout Ratio (DPR) and Return on Assets (ROA).

¹ Author Militaru Iuliana is Associate Professor at the Romanian American-University, Bucharest, e-mail: predescu.iuliana@profesor.rau.ro

Author Croitoru Elena Lucia is Assistant Professor at the Romanian American-University, Bucharest, e-mail: lucia.croitoru@profesor.rau.ro

Author Zoltan-Fabian Meheş is student at the Romanian American-University, Bucharest, e-mail: mehes.z.zoltanfabian2@student.rau.ro

The financial performance could be assessed through ratio analysis so we can further obtain a description of the future and past financial development of the company. In this study it will be measured the profit growth using "Du Pont" formula because it's an important tool to illustrate the performance of the management and the strategic decisions they have made in the past for the company's future.

The following study has the objective to study if the NPM is high or low, if it's high than there is a sustainable growth. To see if the Asset T/O is high so the assets generate enough revenue to be efficient and if the financial leverage could allow the company to borrow more capital to invest more in their assets. Based on ROE and CR we can find out what is the required ROA in order for the company to have a sustainable or satisfactory growth. Based on ROE and DPR we can find out which is the possible growth per year and how can we improve the growth per year reducing DPR and increasing ROE.

2. Analysis of the financial situation of Wal-Mart

Wal-Mart is an American company that started its activity with a small grocery store in the state of Arkansas U.S.A. in 1962 that became the most successful retailer in the world with sales of over 485 billion dollars worldwide. It is the biggest private employer in the world with almost 1.8 million employees in over 11 000 chain stores from 27 countries².

The study contains the financial data for the past 5 years regarding the ratios and financial indicators that have led them to be the most successful retailers in the world. The interpretation of the study will be based on secondary data from different text books and articles in order for it to be up to date with the latest information and see what should be or not be improved.

Table 1 – Wal-Mart financial indicators³

Date	1/31/15	1/31/14	1/31/13	1/31/12	1/31/11	1/31/10
Gross profit margin	24.29%	24.31%	24.38%	24.50%	24.74%	24.78%
Operating profit margin	5.63%	5.68%	5.96%	5.98%	6.10%	5.91%
Net profit margin	3.39%	3.39%	3.65%	3.54%	3.91%	3.54%
Assets T/O	2.38	2.33	2.31	2.31	2.33	2.39
Sales (millions)	\$485,651	\$476,294	\$468,651	\$446,950	\$421,849	\$408,085
Financial leverage	2.37	2.52	2.48	2.55	2.64	2.34
Return on Equity (ROE)	20.10%	21.01%	22.27%	22.01%	23.91%	20.26%
Capital Ratio	42.19%	39.73%	40.24%	39.17%	37.91%	42.72%

² Gereffi G., Ong R. (2007), Wal-Mart in China, *Harvard Asia Pacific Review*, vol 9, no.1, pp. 46-49

³ <http://stock.walmart.com/investors/financial-information/annual-reports-and-proxies/default.aspx>

Date	1/31/15	1/31/14	1/31/13	1/31/12	1/31/11	1/31/10
Dividend Payout Ratio	37.80%	38.31%	31.54%	32.15%	27.07%	29.42%
Return on Assets	8.03%	7.83%	8.37%	8.12%	9.07%	8.40%
Assets (millions)	\$203,706	\$204,751	\$203,105	\$193,406	\$180,782	\$170,706
Equity (millions)	\$85,937	\$81,339	\$81,738	\$75,761	\$68,542	\$72,929

Source: Own calculation based on Wal-Mart Balance Sheets

“Du Pont” Formula:

$ROE = \text{Net Profit/Sales} * \text{Sales/Assets} * \text{Assets/Equity}$

$ROE = \text{Net Profit Margin} * \text{Asset Turnover} * \text{Financial Leverage}$

The indicators were calculated using the following formulas⁴:

$NPM = \text{Net Profit} / \text{Sales} * 100$

$\text{Asset T/O} = \text{Sales} / \text{Assets}$

$FL = \text{Assets} / \text{Equity}$

$ROE = NPM * \text{Asset T/O} * FL$

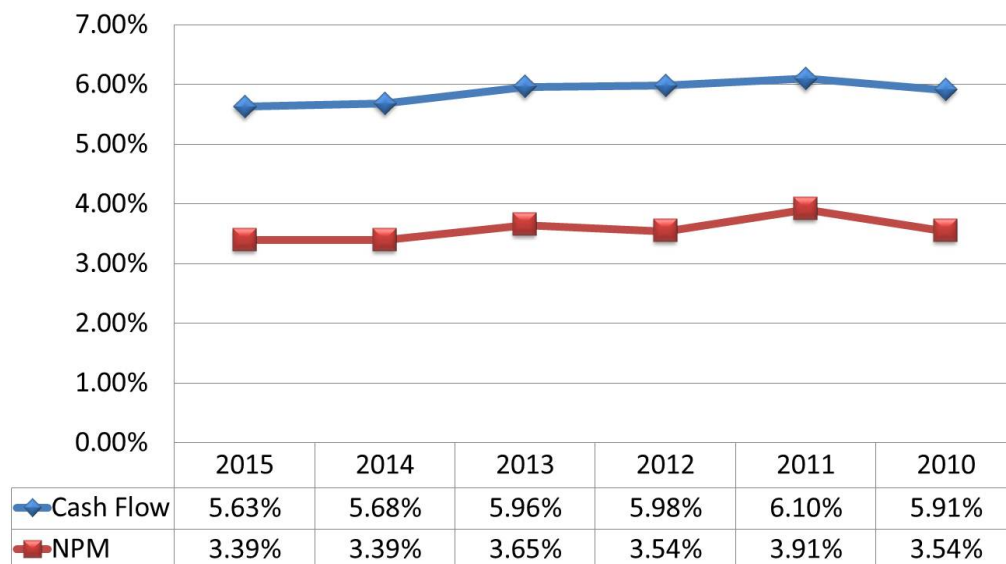
Others:

$CR = \text{Total Equity} / \text{Total Assets} * 100$

$DPR = \text{Dividends} / \text{Net income} * 100$

$ROA = \text{Net income} / \text{Total Assets} * 100$

Graphic 1 – Cash Flow Evolution

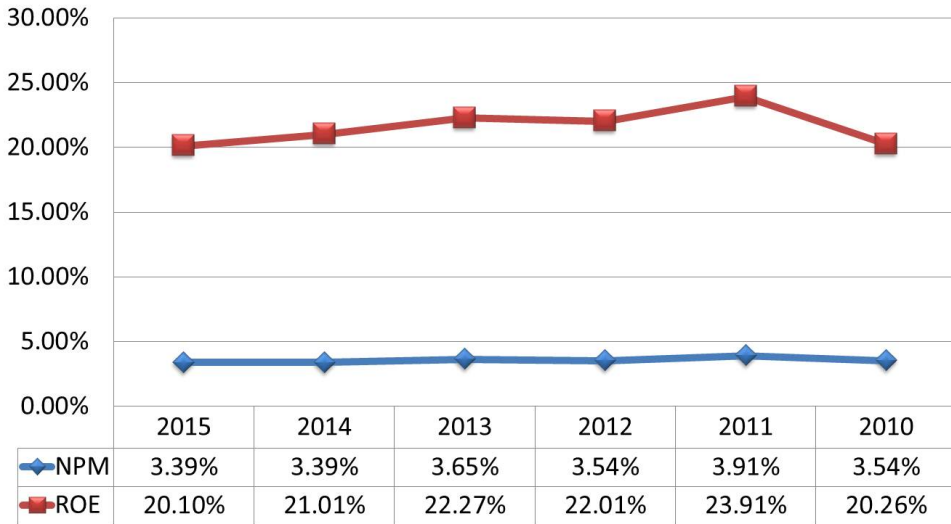


As we can see in the ratios and figures there is a significant difference between cash flows (operating profit margin) and net profit margin which shows that they are making further investments to expand and have short term and medium term debts. By short term debts we mean suppliers costs and

⁴ Emery D., Finnerty J., Stowe J. (2006), Corporate Financial Management 3rd Edition, Prentice Hall publisher

shareholders that may loan the company cash to help it run its operations. This might be the case of Wal-Mart.

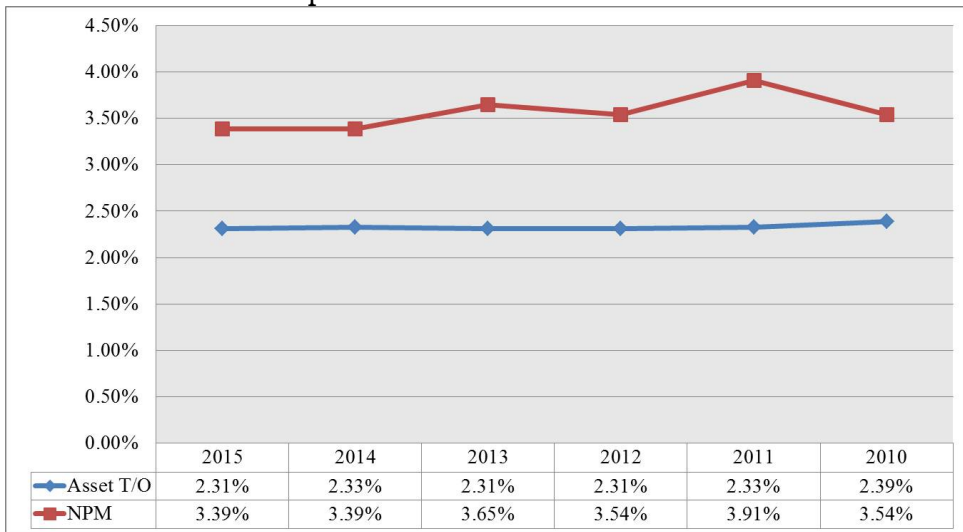
Graphic 2 – NPM Evolution



The net profit margin is fairly good and consistent for the past five years oscillating from 3.3% to 3.9% in 2011, due to the massive revenue that the company is generating. Let's take for instance 2014 the company had a net profit of \$16.5 billion from which they paid in dividends \$6.2 billion to its shareholders. They have successfully integrated the economy of scale in their company reaching the profitability that other competitor dream of. The American company is the first, Carrefour coming second with about \$123 billion in revenue. The small NPM could be related to the big cash flows that create interest rates that have to be paid to its stakeholders, but is good because the ROE is generating enough revenue to be efficient with the correlation with ROA. The secret of having an excellent NPM in this case is to make the assets work efficient to generate higher income. This company has a sustainable growth correlated to its size. But if this was the case to a smaller company it would have needed to increase the NPM taking into consideration its size.⁵

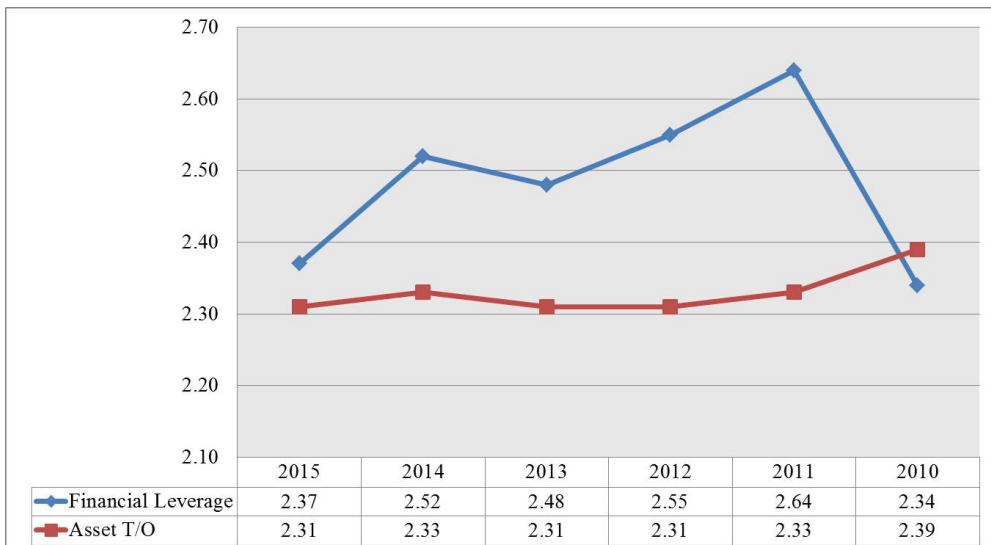
⁵ Heikal M., Khaddafi M., Ummah A.(2014). Influence Analysis of Return on Assets, Return on Equity, Net Profit Margin (NPM), Debt to Equity Ratio (DER) and current ratio (CR), against Growth in Automotive in Indonesia Stock Exchange. *International Journal of Academic Research in Business and Social Sciences*, Vol. 4, No 22, 101-114

Graphic 3 – Asset T/O Evolution



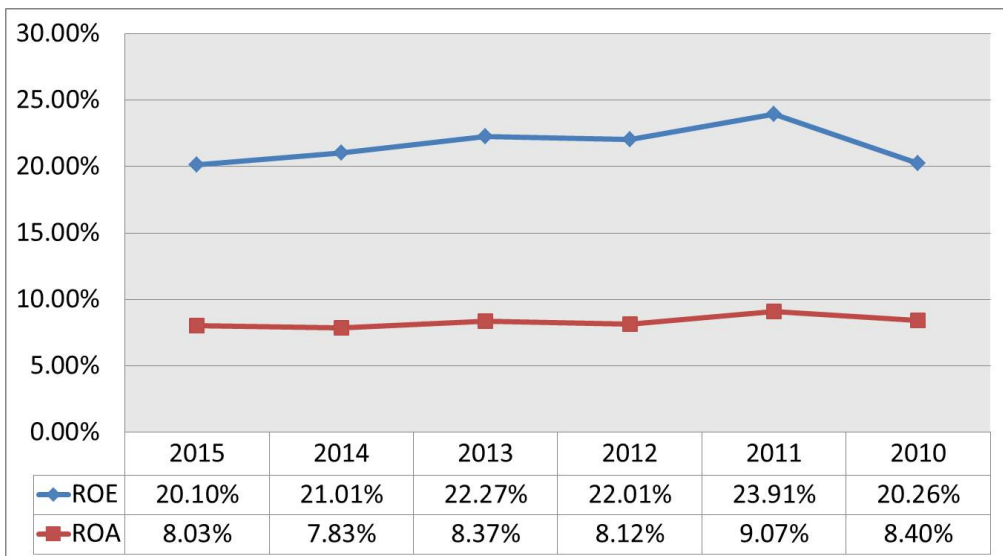
The assets T/O is stable for the past five years at 2.3-2.4; this shows the sales that the assets create yearly. They are you using their assets efficiently maximizing their sales, this with the NPM show how solid their growth strategy is and should continue by lowering the DPR with 5% - 10% to have a boost in capital, available for future investments.

Graphic 4 – Financial Leverage Evolution



The financial leverage is good at 2.37 and allows them to get loans for future expansion strategies if they won't like to increase the NPM or decrease the DPR. Getting external loans could stress the entire balance sheet although the interest rate would be very low for them, depends on the value of the loan, they could easily try to get the necessary capital from other sources. The financial leverage is recommended to be as low as possible at 1 or even lower, taking into consideration all the factors that are presented by this specific company it is understandable but not ok. It would be recommended to increase their equity in order to get to a more effective and stable financial situation.

Graphic 5 – ROE & ROA evolution



The return on equity (ROE) gives the investors an idea of the growth rate the company could have for a period of time. Investors consider that a company that has a ROE between 5% and 10% will have a medium growth over the next 3 to 5 years.⁶ Taking into consideration that, investors need to take a close look over the balance sheet, so they can understand what is really happening in that organization, within the market. As we can see Wal-Mart has a ROE of 20-22% which is very high compared with CR and ROA linked together. The reason why there is such a huge gap is that they have a large cash flow that allows them to pay out dividends to the shareholders. That is why ROA and ROE are so far apart.

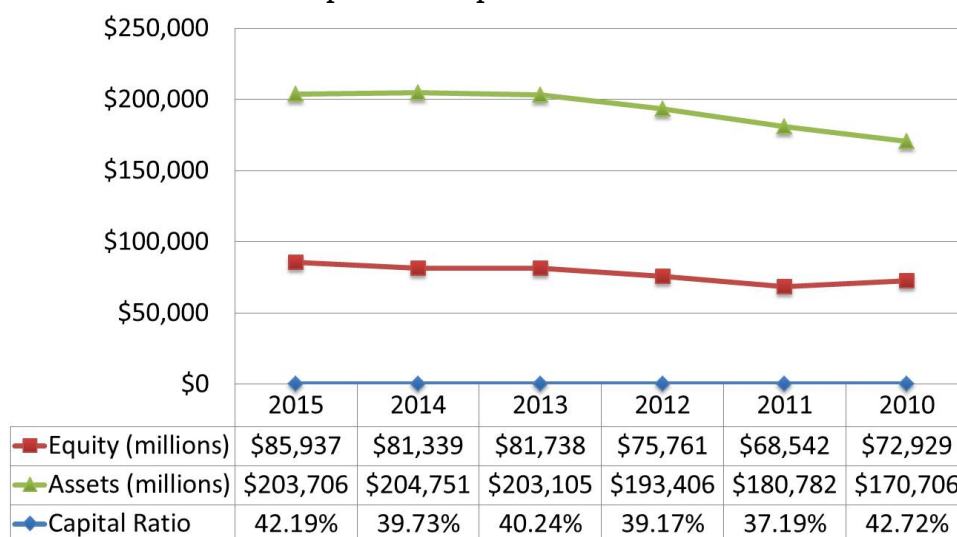
⁶ Haque M. (2005). Impact of leverage on Return on Equity, *Proceedings of the Academy of Accounting and Financial Studies*, vol. 10, no. 1.

To understand better the importance of the “Du Pont” formula, we will simulate a situation where we have two companies but have to invest in one. Both have the same ROE of 12%. Which is better to invest in?

Company	A	B
Net profit margin	15%	15%
Asset T/O	1.5	2
Financial Leverage	2	1.5

As you can see both have the same net profit margin and ROE, but Company A has Asset T/O of 1.5 and company B has 2. That means that company B is more efficient in generating more revenue with their assets than company A. Company B has FL of 1.5 which is better than company A, otherwise it would've had a higher NPM. Company B could take more loans to invest in the company and make it generate more profits and get a higher Asset T/O. The conclusion here is that the investment should be made in company B, not in company A.

Graphic 6 – Capital Ratio evolution



The capital ratio shows that the company has increased its equity and sold some of its assets. The company has taken on additional debt for future investments or sold some additional stock and has sold some of its assets. But is stable due to the high ROA (due to volume) and a high cash flow, otherwise the company in hand could be heading straight to bankruptcy. The best scenario would be a decreasing capital ratio that would mean that the company would have bought back some stock or finished paying up some loans.

Based on the DPR the company has distributed to its shareholders to get 37.8% of the profit, taking into consideration the ROE⁷ of 20% should allow them normally to have a growth of around 10% for the next year, but taking into consideration the high cash flow that goes through Wal-Mart it will be limited at 4-6%, which is still good for a retailer this size. The company growth is higher when the DPR is low and the ROE is high. The following table will show you how DPR and ROE influences the growth per year indicator.

Table 2 – Possible company growth per year ratios

DPR	ROE		
	10%	12%	16%
20%	8%	9.6%	12.8%
30%	7%	8.4%	11.2%
50%	5%	6%	8%

The return on assets is fairly stable at around 8% over the past 5 years with a few oscillations, but none to take note of. The ROA is low compared to ROE; this could mean that the managers are having some problems, not making the best decisions. It is easy to invest a huge capital and make money out of it, but it is very hard to make a lot of money out of a small capital. This shows that the management isn't that good at what it is doing although we have a big cash flow through the company and a huge ROE and a big DPR. ROA should still be at 12-13%. Wal-Mart is not generating that much revenue with their assets. they are concentrating their resources on making money out of ROE. This is interesting, because of the size of the company, there assets are huge, but taking into consideration the size of the assets and the size of the equity they should be close. So if you just have ROA and ROE you would consider that the company has management problems, but looking over the assets and equity and taking into consideration the cash flows it all makes sense.⁸

3. Conclusion

This study has shown us how to conduct a financial analysis over a company in order to find the possible growth it will have in the future. As you

⁷ Kolbe L., Vilbert M., Villadsen B. (2005). Measuring Return on Equity Correctly. *Public Utilities Fortnightly*, 143, no.8, p. 23-27

⁸ Jewell J, Mankind J (2010). What is ROA? An investigation of the Many Formulas for calculating ROA, *Proceedings of the Academy of Education Leadership*, Vol.15, no.2, 62-64

can see just the “Du Pont” formula could give you enough to get started. The “Du Pont” formula contains the NPM formula, Asset T/O formula and the Financial Leverage formula; all of them have been included in ROE so you may conduct your own analysis. As a bonus to go deeper into the company analysis you may use the capital ratio to see the recent activity if they have gone further into debt or have paid up loans so you know what you are investing in. The dividend payout ratio helps us understand how much of the net income is given to its stakeholders or what could be the growth per year in correlation with ROE. ROA could give the gist of how their managers are taking decisions if they are good the ROA would be high, if the ROA is low, some counter-measures should be taken into consideration, for example changing the managing team.⁹

Wal-Mart has shown us how a big company works from a financial point of view, how things that in a small company are considered bad, in a big company they are the best choice for a high performance. The high DPR with the high cash flows are enormous, but come to think of it it's just a small portion of their revenues. The high Asset T/O shows us how much they generate with 1 dollar worth of assets. Their assets are working marvelous in generating revenue this feeds their need in capital to have a calibrated capital ratio although they should either increase the equity to have a boost they need in the next 5%. As we can see from their capital ratio, that's what they are doing now, slow and steady. It is not recommended to do it otherwise at this size. The ROA is a bit low, but it is still good taking into consideration their line of activity, retailing.

As we demonstrated before, Wal-Mart might afford some additional loans, but is not recommended, they could try to increase the NPM so it would generate more revenue for an aggressive expansion, or they could try lowering the DPR. Other than that I would recommend them getting more assets by getting more capital through the methods just explained. Otherwise, Wal-Mart is a company looking up for, good for investments with a solid financial situation, a steady growth plan and a slow but steady expansion strategy inland and abroad in emerging markets that have a lot of opportunities for the future.

*** The article has been supported by scientific research within the project entitled *“PRACTICAL SCHOOL: Innovation in Higher Education and Success on the Labour Market”*, project identified as POSDRU/156/1.2/G/132920. The project is co-financed by the European Social Fund through the Sectorial

⁹ Altman, E.I. (1968). Financial Ratios Discriminant Analysis and the Prediction of Corporate Bankruptcy. *Journal of Finance*, 23 (4), 589-609

Operational Programme for Human Resources Development 2007-2013. Investing in people!

References

1. Altman, E.I. (1968). Financial Ratios Discriminant Analysis and the Prediction of Corporate Bankruptcy. *Journal of Finance*, 23 (4), 589-609
2. Jewell J, Mankind J (2010). What is ROA? An investigation of the Many Formulas for calculating ROA, *Proceedings of the Academy of Education Leadership*, Vol. 15, no. 2, 62-64
3. Heikal M., Khaddafi M., Ummah A.(2014). Influence Analysis of Return on Assets, Return on Equity, Net Profit Margin (NPM), Debt to Equity Ratio (DER) and current ratio (CR), against Growth in Automotive in Indonesia Stock Exchange. *International Journal of Academic Research in Business and Social Sciences*, Vol. 4, No 22, 101-114
4. Kolbe L., Vilbert M., Villadsen B. (2005). Measuring Return on Equity Correctly. *Public Utilities Fortnightly*, 143, no.8, p. 23-27
5. Haque M. (2005). Impact of leverage on Return on Equity, *Proceedings of the Academy of Accounting and Financial Studies*, vol. 10, no.1
6. Emery D., Finnerty J., Stowe J. (2006), *Corporate Financial Management* 3rd Edition, *Prentice Hall publisher*
7. Gereffi G., Ong R. (2007), *Wal-Mart in China*, *Harvard Asia Pacific Review*, vol 9, no.1, pp. 46-49
8. *Annual reports between 2010 and 2015* - <http://stock.walmart.com/investors/financial-information/annual-reports-and-proxies/default.aspx>