



Analyzing Performance of Acquiring Firms across Different Sectors in Colombo Stock Exchange using data mining

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Dissertation submitted to the Faculty of Information Technology, University of Moratuwa, Sri Lanka for the partial fulfillment of the requirements of the Honours Degree of Bachelor of Science in Information Technology.

July 2021

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Declaration

I certify that this dissertation does not incorporate any material previously submitted for a degree or diploma in any university without acknowledgement, and to the best of my knowledge and belief that, it does not contain any material previously published or written by another person or myself except where due reference is made in the text.

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Acknowledgement

It is great honour and privilege for me to present this independent study to the Department of Information Technology in part fulfillment of the requirement of the degree of Master of Information Technology (MSC) of the Faculty of Information Technology of the University of Moratuwa.

I would like to take this occasion to express my thanks to everyone who contributed directly and indirectly, in their own small and big ways, for the successful completion of this dissertation. I am sincerely grateful to them for sharing illuminating opinions in making this dissertation a success.

I would like to express my gratitude to my academic supervisor Saminda Premaratne, for being the invisible strength behind this success. His aspiring supervision, overwhelming contribution, valued suggestions and advices throughout this period always motivated me to complete my dissertation successfully.

My deepest gratitude goes to my family and my colleagues for the inspiration and moral support. Finally, I am deeply indebted to all who supported me in numerous ways in making this dissertation a success.

Abstract

This study is conducted to observe the post-acquisition performance of merge and acquiring deals in Sri Lanka in the long run in terms of accounting based measure and market based measure, using mean comparison and event study methods respectively, for the merger and acquisition deals announced in between 2002 and 2014. The results indicate that mergers and acquisitions negatively affect the post-acquisition performance of the acquiring companies in Sri Lanka. The results further reveal that the overreaction in response to the merger and acquisition announcement made by the market is not corrected itself within a short period of time and corrects itself in the long-run.

Keywords: Mergers and Acquisitions, Post-Acquisition Performance, Mean Comparison, Event Study, Industry Sectors

Chapter 1

Introduction

1.1. Background of the Study

Data mining is mainly used to extracting and discovering patterns for large data set by using different tools and techniques. Researcher can use data mining process to analysis relationship, fact and trends in intelligent view by using large amount of data and support to transform information into effective structural view for future usage. Most of the historical data can be used to data mining process to convert as useful data for development of the organization or countries. Hence, most developed countries use data mining process for their future decision making by using historical data. Actually, they should develop process to data collection, store and analysis large amount of data to help effective decision making in future. Another important factor is that data mining can be used to every industries such as finance, human resources, marketing and information technology industry for take effective decision using reliable data sets.

1.2. Overview to the Project

Due to current situation of the global market, organization should develop their competitive advantage through innovative ideas and effective decision making. The competition of every industry has been increased due to innovative ideas of the people and firm developed their production or services targeting fulfill customer needs and expectation using effective skills and capacity of resource management. Thus, this propels the firms to look for opportunities for strategic expansion with the expectation of improved performance.

Mergers and acquisitions is effective mechanism to consolidation of companies or other assets with another firm. Most of the companies merge with other companies to

control cost and resource wastage, access to new resources and expand business into international market to increase their revenues.

Firm can focus to M&A concept when they have low resources to achieve goals and objectives or if they need to access new resources consider customer need and expectation. They acquired operation unit or information technology department with other effective entity to manage available resources and reduce cost wastage. But companies should take risk when they use M&A because they need to transaction of their information with other company and it can be profitable or loss. Though a majority of these studies focus on the stock returns immediately surrounding with announcement date, little attention is devoted to the post-acquisition performances, mainly due to the strong belief of the market efficiency, which indicates what the result should be.

Hence, this study intends to conduct an extensive accounting comparative analysis of the pre-acquisition and post-acquisition performance of M&A in Sri Lanka using effective time period and examine the impact of industry on the performance of the acquiring firms across different industries.

1.3. Research Problem

Merger and acquisitions helps to improve organization performance by achieving expected goals and objectives but it has directly impact to both organizations process that means both firms work under different policies and regulation according to their structure and culture. Hence, management should highly consider select another entity to develop acquisition among company especially not consider company performance because they should analysis pros and cons between companies. M&A supports to create value for management and other shareholders of the acquiring company by achieving their expectations.

Every firm can be analysis their performance through share price or financial report of the current year. Hence, it is clearly show that M&A supports to improve performance of acquiring firms' or not. Sometime firm can get chance that share price can be increased after announce about merger and acquisition according to the performance of selected company for acquisition. However, contradicting to the efficient market

hypothesis, number of researchers has observed both positive and negative abnormal returns in both long run and short run. According to the previous studies, USA and UK market provide short-term growth by developing merger or acquisition in target firm because shareholders of the firm highly consider their performance states of pre-acquisition and post-acquisition period. Mainly firms can offer wide range of products and services through mergers and acquisitions because it explore new business ideas for market to gain large market share. [3, 62, 49, 90]. Another important advantage of this concept is most of the government offer new tax policies such as tax reduction policies when complete merger or acquisition [23]. As example Singapore is best place for start business because they offer unlimited tax reduction when company start business in Singapore market by merging or acquiring with small company.

According to the neoclassical theory of mergers explain that the process can be positively and negatively impact for the firm because it is offer new innovative ideas and new technology usage to increase company performance and reduce cost wastage by accessing new resources [22]. As example if company need to use information systems to increase their work performance, they have to implement technology, human resources and other physical resources that they want to implement information system. But they have to spend high cost for implementation so they can easy to outsource that operation process by using merger and acquisition process [68]. But this can be negatively impact for company because security protection of company information is very low and sometime it can be cost wastage more than internal operation. Hence, merger and acquisition can negatively impact company performance by increase cost wastage and reduce revenue [108].

In this research focuses to identify that impact of merger and acquisition is positive or negative by select different companies of Sri Lanka using sample data from one or two particular industries.

1.4. Research Questions

The study attempts to investigate the following research questions;

Do the performances of the acquiring firms improve, following mergers and acquisitions?

Research Objectives

1. To observe whether the industry has a any influence on the **performance** of the acquiring firms
 - 1.1. To identify whether the industry has a significant impact on the **profitability** of the acquiring firms
 - 1.2. To identify whether the industry has a significant impact on the **efficiency** of the acquiring firms
 - 1.3. To identify whether the industry has a significant impact on the **liquidity** of the acquiring firms
 - 1.4. To identify whether the industry has a significant impact on the **financial structure** of the acquiring firms
 - 1.5. To identify whether the industry has a significant impact on the **investment ratios** of the acquiring firms

1.5. Significance of the Study

Most of the researcher has discussed about impact of merger or acquired for company performance in previous studies. But they provides negative or positive impact of M&A consider long-term performance of the company in global.

But lots of previous studies focus to consider developed market like United Kingdom and USA for their analysis [6, 80, 96]. Hence, researcher couldn't get clear idea about impact of M&A for developing market in the global. Every organization should highly consider their legal process and rule and regulation of the government provide to implement M&A because both two firms expect to increase their performance or revenue through the process [9, 59, 52]. Hence, legal system provides effective structure to implement M&A consider future of both companies. And it is providing protection for both companies and supports to mitigate risk. According to the previous studies, researcher cannot describe that M&A concept is positively impact for developed market more than developing market because it is depend on culture and structure of the selected firms. However, corporate culture and governance are different between developing market and developed market due to their policies and economic level [21, 52, 56].

As per the previous studies of developing market, shows positive impact to the acquiring companies within short-time period but it is very hard to maintain because there are limited opportunities to develop economy with consider developed countries [47, 48]. As example, Singapore is well developed country and they provide several opportunities to implement M&A concept with small existing companies to consider their economic growth. They provide tax advantages for those business to increase performance and revenue [36, 37]. Hence, researcher will plan to determine that findings of the studies in developed markets are equally relevant to a developing market like Sri Lanka [7]. In this study, researcher plans to apply post-acquisition performance for selected industry consider other previous studies because most of the studies not consider specific industry when used sample for research. Every business owner should take high risk when they expand their business into new market and it is very hard due to rules and regulations of the entering market and economic factors. But M&A is the best method of every firm to entering new market because it will

save time and money that need to spend business expansion [2. 38, 93]. They can easy to find small or medium company which has effective loyalty customer base in selected market and merger with them to expand their business.

Hence, this study provides insights to the market as well as to the acquiring firm about the operating performance of acquiring firm in the long-run, and the influence other factors affecting the performance of acquiring firms listed on Colombo Stock Exchange [74]. Hence, this will be helpful for shareholders, managers, competitors and potential investors in developing trading strategies and effective investment decision making [31]. Furthermore, this will assist policy makers, project consultants, financial advisers, industry researchers and decision makers in various financial restructuring decisions. This research is very important management of the company when take decision about company future growth and financial information also helps to take effective decision of the ongoing process [106, 76]. Other stakeholders of the company can identify progress of the M&A process and other company employees can understand growth of the company through M&A. finally, academic researchers are important this study to identify performance evaluation of M&A in developing countries like Sri Lanka.

Chapter 2

Literature Review

2.1. Introduction to Mergers and Acquisitions

Merger means combine two equal sized company and develop new company with using different type of mergers. Most of the companies used merger method to increase market share, reduce cost or increase profit by developing common products. After developing merger of company, they should divide share of the company among all existing shareholders of both original companies [45]. But acquisition is more than different to merger that means one company purchase another company. If A Company will purchase B Company through acquisition process [95] that A company can access all assets and liabilities of B company according to the legal policies of acquisition. However, both M&A ia best process to increase company performances and gain economic growth for both developed and developing markets.

According to previous research, researchers has identified most applicable methods to measure performance of acquisition through their observations [71, 107, 101]. Zollo and Singh [112]. Consider those methods, they have identified main twelve approaches that impact to acquisition process to improve company performance. As per the Zollo and Meier [111], researcher has identified most suitable three approaches such as stock market based measures, accounting based measures, and subjective measures that impact to acquisition process to gain value for shareholders.

According to Cording, Christmann and Weigelt [16], there are two approaches available in the market to measure performance of merger process such as share price movement analysis and operating performance analysis [20]. The share price analysis means identify long-term economic gain of M&A and using financial ratios and other

statistic data of pre and post-acquisition to measure long-term performance. But 92% researches are used accounting based method and market based method measure performance of the merger process.

2.1.1. Accounting Based Measure

Account based measure technique used to measure performance of acquisition in industrial organisations specially used to measure long-term performance of acquisition process. Normally, this method used to compare pre and post account summary of both selected company to identify performance of acquisition. Main aim of the accounting based measure technique is earning satisfy return on capital of the business [10, 32, 107]. According to the previous studies, the operating performance approach is comparing between pre and post-performance of the companies to measure merger and acquisition by using pre and post account data. They mainly consider productivity, profitability, market share and return on investment to identify performance of the M&A. The conclusion of the study, M&A is positively impacting for company operational performance and profitability [107].

Thanos and Papadakis [104] there are several advantages available when using accounting based measure techniques such as mainly it performance based on annual financial statement without consider shareholder expectation because company investigate their performance through annual financial statement. The Chatterjee and Meeks [17] said that accounting based measure technique used measure performance of acquisition but capital market is not effectively impact to analysis. And researcher can measure success of the company which are not listed in stock market through accounting based method. It is huge advantage for company that are not listed in stock market. Major disadvantages of the accounting based measure are always depend on past-performance of the company hence, they need to consider pre and past performance result when decision making [19, 102].

2.1.2. Market Based Method

When consider the market based method, it can used to measure both short-term and long-term performance. Mainly researcher can forecast future profitability of the company under short-term performance because financial market is forward-looking [101, 13]. But they consider stock price changes when measure long-term performance because they cannot predict stock price due to some uncertainties. According to Halpern [42] noted market based method supports to measure changes of share price in company through acquisition method because they assumption capital market is effectively operate under market based method.

According to Cordin & Christman [15], they can occur some problems for measure performance of M&A using market based method. Such as they cannot measure performance of some companies which are not listed in stock market [1]. And stock price changes also highly impact performance of M&A. And another problem is long-term strategic and operational decisions are highly impacting to change company policies. Hence, they cannot easy to measure long-term acquisition using market based method.

2.2. Market Efficiency Concept and Mergers and Acquisitions

Market efficiency concept has been one of the long argued and interesting topics in finance literature. Thus, a vast majority of related studies in this area surrounds with the theory of efficient market, according to which financial markets are said to be informational efficient at any given point of time, if stock prices reflect all available relevant information accurately [27].

An announcement of a corporate event such as M&A could be considered as a piece of information which is publicly available[8, 14, 30]. The researcher expect that share price not change during the announcement period without any departure. However, in practice, it seems to be that some publicly available information is not reinforcing the semi-strong form efficiency, and it may vary depending on the nature of the capital market and the way they conducted the study. Abeyratna, Bandara and Colombage [1]

found that only a minority of three sectors out of fourteen industry sectors considered, displayed efficiency with respect to the assimilation of new information into share prices and majority of the sectors lagged behind the market in the process of assimilation of price sensitive information providing opportunities for speculative investors to earn above average returns in the short-run [4]. Thus, whether the market is efficient or not for acquisition announcement and whether the particular industry sector displayed efficiency with respect to the assimilation of new information into share price are central issues considered under this study.

2.3. Post-Acquisition Performance in the Long Run

According to the Healy, Palepu and Ruback [43], M&A companies can measure their finance performance using liquidity, solvency and profitability financial details as per the quarter wise. As per the previous studies, financial performance can used to understand how companies use their assets to generate effective income. After implement M&A process of the company, they expect to increase income and financial performance because they select company to merger after consider past growth of the selected company. The researcher can measure acquisition performance using pre and post financial performance of the company[24,34, 73]. If company has achieved high financial performance after implement M&A, then acquisition is positively impact to company.

However, it has been documented that the greatest difficulty with an event study methodology is that of benchmarking, i.e. vast evidence exists that the choice of a benchmark affects the magnitude and the significance of abnormal returns. This has been supported by Mitchell and Stafford [67] stating that “we find that choice of methodology is an important factor in documenting statistically and economically significant long term stock price abnormal performance because different methodologies applied to the same sample can produce very different inferences about abnormal performance [85]. In addition, comparison of our estimates to those of other researchers reveals that slight modifications to either the sample or the

methodology can produce dramatically different results". By supporting to the argument present by Mitchell and Stafford [69], researcher can observe post-acquisition return by two period of the market mode. Market adjusted returns model and Capital Asset Pricing Model (CAPM) seem to be around -0.18% within first 2 years following the announcement date. The market model can depend on the estimated period.

In 1990, pre and post-acquisition performance can be used to ageist variation of market return model and Capital Asset Pricing Model of acquiring firms on their acquiring return. But during the 1960-1970, most of the acquiring firms shows negative long-term returns according to the previous studies. Therefore, researchers are provided high attention for experiment long-term return after 1990 [75, 81, 39]. Most of the researchers are experimenting some point such as use different return ageist methods to identify impact of methodologies for long-term returns without consider market return model and Capital Asset Pricing Model. But they found that those methodologies not effect to negative long-term return of the market.

According to the Agrawal et al. [3], studies multiple benchmark concept to calculate abnormal return of the acquire company. So, it supports to understand importance of long-term acquire return. But as per the previous studies, multiple benchmark can highly impact to poor performance of acquiring companies. Agrawal et al. [3], most of the acquire firm shareholders get significant lost at least -10% over 5 years. He takes 937 acquisition companies for the researcher over 1955 to 1987 [72, 91]. In above research, they use abnormal returns to ageist company size and beta risk but they got negative impact trough the result. Finally, they concluded that company size and beta estimation risk not affect to negative post-acquisition of the company. And another special thing is beta estimation risk can be change in every acquisition because efficient market anomaly of negative post-merger performance in not determined.

In 1992, Agrawal et al [3] analyzed how post-acquisition impact to stock price performance of acquiring companies. They take 1298 acquisitions in independent company for the research in USA. They design sample selected procedure to focus acquisition of the companies. As per the study, they found acquiring firm not show under performance in first five years but someone provides proof for above argument,

it says acquiring firm can simply earn their request rate of return nor more or no less. But especially second year and 3 year can show negative impact of request rate of return. Healy et al. [43] said operating performance can be significantly improved in combine firm after implement merger because resources and other assets of both companies can be used to improve their performance.

In 1997, researchers has identified main six methods that impact to future performance of the acquiring firms such as CAPM, size control portfolio, Dimson-Marsh risk adjustment method, value-weighted multi-index model, multi-index model and Fama and French three-factor model [28, 54]. As the result, researchers found that model shows statistical significant result over two years in CAAR vary from -0.1182 to -0.18 . According to size control portfolio method, it show least under performance and as per the Fama and French three-factor model shows grater under performance [29]. In 1997, Loughran and Vijh [63] calculated abnormal return over five years as the different among buy-and-hold return of the acquirer and the buy-and hold return of a control using 947 acquisition sample. Then the result is abnormal returns change insignificantly over the above 5 years. After that they found post-acquisition abnormal return is negative by following merger and post-acquisition abnormal return is positive by following tender offers. Though the authors used buy-and-hold methodology, the results were consistent with much of the previous literature. After that buy and hold abnormal return of over 5 years can defer on CAAR because time period can be mismatch.

Rau and Vermaelen [90], identified some issues which impact to M&A using 3169 mergers and 348 tender offers as sample. The result of the study is average acquires in mergers under performance in equally. But average acquires in tender offers earn by 9% positive abnormal return [27]. In 2000, researchers are used modernization methodologies to analysis acquiring performance of the firm. Those diversify studies focus to examine target status, method of payment, relative size and type of acquirer stock as per the market status. Most of the researchers use most reason data for the study during 1980 to 2000. But the result of diversify methodologies are negative post-acquisition performance.

Mitchell and Stafford [68] discussed about merits and demerits of the BHAR and the CTAR. As per the studies, authors has identified positive cross co-relation among

abnormal return of the BHAR method overcome for calendar time methodology. After that researchers used BHAR, CTAR and calendar time portfolio regression (CTPR) to identify value of the abnormal return. Then they got negative abnormal return from BHAR approach and negative abnormal return from CTPR. Ghosh and Jain [35], again studied merger firms can increased their financial leverage using different techniques. They select 239 mergers as sample in USA. As the result, mean financial leverage had increased by 17% when comparing pre-merger finance leverage. Yeh and Hoshino [109], investigate how M&A impact to stock price changes of acquiring firms. They select 20 Taiwanese as per the sample for the study. As the result, stock market positively react for M&A and profitability shows a descendant change from pre-merger to post-merger periods.

Pawaskar [77], investigated pre and post-merger operating performance of the acquiring firms in the Indian market. They select 36 mergers as sample of the India and they use financial details such as profitability, growth and liquidity to measure merger performance of the selected firms. As the result firms show better performance in post-merger performance through the above financial result but author calculated could not achieved better corporate performance of the firm under post-merger performance. Yeh and Hoshino [109], examined how acquisition of the firm impact to operating performance using 86 Japanese as sample. The study based on profitability, growth and efficiency of the firms. As the result, total productivity can indicate of firm efficiency [64, 88, 55]. The researcher indicated down word trend on profitability and calculated acquisition is negatively impact to performance of Japanese companies. According to the literature review, researcher can observe relationship between M&A and post-acquisition performance have been mixed. Out of fifteen studies, Bruner [13] found financial performance are based on M&A. as per the four studies, shows negative post-acquisition performance of the firms and three reports shows positive post-acquisition performance and another eight studies reports no significant changes for post-acquisition.

Dutta and Jog [26] the authors conclude that “we do not find any significant negative long term abnormal returns for Canadian acquirers, once we account for methodological discrepancies. Further, our results are robust across factors such as: (i) mode of acquisition (tender or merger), (ii) target type (public or private), (iii) related or unrelated target, (iv) payment type (stock, cash or mixed), (v) growth or value

acquirer, (vi) board independence, (vii) level of managerial ownership, and (viii) relative size of the deals”. Those factors fully converted the existing literature on M&A by considering various aspects of acquirer performances. By supporting to the argument presented by Dutta and Jog [26], Isa and Lee [48] investigated share price performance using Malaysian firms from 2000 to 2004 using popular market adjusted return and the BHAR approach. Moreover, the results revealed that restricting the sample under the method of payment of the transaction did not make any difference for the long term BHAR at post-acquisition period. They said, “Looking at the abnormal returns at year by year after the acquisition, on overall, acquisition do not destroy or create abnormal value during the post-acquisition period. This may suggest that the Malaysian bidders are keeping up to par with their competitor or with the market in general”.

2.4. Post-Acquisition Performance by Industry

The researcher plans to analysis post-acquisition performance and impact of M&A for different industries to improve operating performance using financial details. They mainly plan to observe financial performance and operational performance of the firm in different industries pre and post-acquisition to understand impact of M&A. Researcher use 7 ratios to analysis this study and 68 employees work under M&A companies [5, 86, 112].

A study conducted in Greece for the period from 1998 to 2002 using thirty firms listed on Athens Stock Exchange across seven different industry categories reported that the post-acquisition performance was affected by their different industry type. The study conducted a comprehensive ratio analysis covering liquidity, activity, profitability, investment, financial structure and viability aspects [78].

Chapter 3

Data and Methodology

3.1. Introduction to the chapter

Methodology; of any study refers to the procedures, activities as well as methods followed during the course of research study to accomplish the all objectives of a study. Research Methodology shows methodology employed in this study and data required for the research and research design to find the performance of acquiring firms after a acquisition period in Sri Lanka.

3.2. Data

The study examines a sample of successful M&A deals by businesses listed on CSE announced between 1st of January 2002 and 31st December 2014 which acquired domestic targets. Thus, the study covers a period of 12 years, as three years subsequent to the announcement year is needed for the analysis and hence, the financial data up to 2018 are considered under this study. The acquirer performance over a period of three years, proceeding and subsequent to the M&A deal are considered based on the prior studies and accessibility of data in this covid-19 pandemic period. The evidence on M&A deals in Sri Lanka are obtained from the SEC and the other price related and market related data required for the analysis are obtained from the CSE. Moreover, the accounting information is taken from the company annual reports.

The following criteria are met in decide on the final sample:

1. Acquisition announcement should be made between January 1, 2002 and December 31, 2014
2. Both the target and the acquirer to be corporations with main operations based in Sri Lanka
3. Acquisition should be successfully completed
4. Acquirer should be a listed company on the CSE

The study has an initial sample of 32 observations.

3.3. Environment Setup

3.3.1. Packages and Tools

RAPID MINER

Rapid Miner is known as YALE (Yet another Learning Environment) in the earlier stage of development. It is capable of providing important features for procedures like data mining and machine learning such as data loading, data preprocessing, transformation and visualization, predictive analytics and statistical modeling.

3.4. Research Method

When reviewing the existing literature it was noticed that two distinct types of methods are used to find the performance of post-acquisition of acquiring corporations.

To achieve the first objective of the study, post-acquisition performance is measured by both comparing means under the accounting based method. However, only the accounting based measure is employed in achieving the second objective of the study; to compare means in the pre-acquisition and post-acquisition periods in different industry sectors, due to absence of data to conduct a study. Finally, the regression analysis has been carried out to find the factors affecting the post-acquisition performance in Sri Lanka.

3.5. Data Collection Method

Studying financial statements of an organization can help to analyze the situation of the organization whether the organization is financially healthy. Further, study of financial statements also capable of evaluating budgets, businesses or projects and determine whether they are suitability for investment. Financial analysis is important to almost every stakeholder of the organization such as customer, investor, government and suppliers as it is capable of analysis the financial strength and weaknesses of the organization.

This study includes data from 3 types of main financial statements which are generally used.

3.5.1. Financial statements

3.5.1.1. The income statement

The income statement is an important section of an annual financial report and this report is capable of providing comprehensive of the earnings or losses made by a business during a financial year.

XYZ Company Income Statement For the Year Ended December 31, 2018 (in rupees)	
Revenues	
Net Sales	96,500
Rental revenues	17,230
Total revenues	113,730
Expenses	
Cost of goods sold	60,570
Selling expenses	17,150
Administrative expenses	8,860
Internet expenses	1,860
Total expenses	88,440
Income before Income tax	25,290
Income tax (40%)	10,116
Net Income	15,174

Table 3.1: sample format of income statement

3.5.2. The Balance sheet/ the statement of financial position

The statement of financial position is capable of representing the capacity of an organization to recognize financial debt responsibilities which is also an important area of an annual financial report.

Example Company Balance Sheet December 31, 2016			
<u>ASSETS</u>		<u>LIABILITIES</u>	
Current assets		Current liabilities	
Cash	\$ 2,100	Notes payable	\$ 5,000
Petty cash	100	Accounts payable	35,900
Temporary investments	10,000	Wages payable	8,500
Accounts receivable - net	40,500	Interest payable	2,900
Inventory	31,000	Taxes payable	6,100
Supplies	3,800	Warranty liability	1,100
Prepaid insurance	1,500	Unearned revenues	1,500
Total current assets	<u>89,000</u>	Total current liabilities	<u>61,000</u>
Investments	<u>36,000</u>	Long-term liabilities	
Property, plant & equipment		Notes payable	20,000
Land	5,500	Bonds payable	400,000
Land improvements	6,500	Total long-term liabilities	<u>420,000</u>
Buildings	180,000	Total liabilities	
Equipment	201,000		<u>481,000</u>
Less: accum depreciation	(56,000)	STOCKHOLDERS' EQUITY	
Prop, plant & equip - net	<u>337,000</u>	Common stock	110,000
Intangible assets		Retained earnings	220,000
Goodwill	105,000	Accum other comprehensive income	9,000
Trade names	200,000	Less: Treasury stock	(50,000)
Total intangible assets	<u>305,000</u>	Total stockholders' equity	<u>289,000</u>
Other assets	<u>3,000</u>	Total liabilities & stockholders' equity	
Total assets	<u>\$ 770,000</u>		<u>\$ 770,000</u>

The notes to the sample balance sheet have been omitted.

Figure 3.1: Format of a balance sheet

Source: (AccountingCoach.com, 2017)

3.5.3. Cash flow statement

Over accountancy duration (month, quarter, and year) in a company, cash flow statement is basically a recap of the expected or actual incomings and outgoings of money.

Cash flow statement for XYZ business for the year ended 31st of December 2010	
	\$
CASH FLOW FROM OPERATING ACTIVITIES:	
Cash receipts from customers	83,000
Cash paid to suppliers and employees	<u>(56,000)</u>
Cash generated from operations	27,000
Dividends received *	250
Interest received	500
Interest paid	(500)
Tax paid	<u>(2,450)</u>
Net cash flow from operating activities	<u>24,800</u>
CASH FLOW FROM INVESTING ACTIVITIES	
Additions to equipment	(2,500)
Replacement of equipment	(7,000)
Proceeds** from sale of equipment	<u>500</u>
Net cash flow from investing activities	<u>(9,000)</u>
CASH FLOW FROM FINANCING ACTIVITIES	
Proceeds from capital contributed	3,400
Proceeds from loan	16,000
Payment of loan	<u>(5,400)</u>
Net cash flow from financing activities	<u>13,000</u>
NET INCREASE/DECREASE IN CASH	28,800
Cash at the beginning of the period	<u>2,430</u>
Cash at the end of the period	<u>31,230</u>

Figure 3.2: Format of Cash flow statement

Source: (Accounting Basics for Students, 2017)

3.6. Data Preparation

3.6.1. Accounting Based Measure

financial actions of a company are presenting general idea of a company or person's financial situation in mutually short and long in an organization or other unit over a period of time using the official record of Financial statements.

3.7. Data Pre-processing

The data cleaning can make the database more complete and clear. First of all, data set need to be properly understood and perform a quality assessment as the first step of preprocessing as a random collection of data often contains irrelevant bits. In the data set there were mismatching data types such as sales attributes, Gross Profit, Net Profit, fixed Assets, Total Assets, Current Assets were integer values which need to be converted in to real data type in order to conduct the analysis.

As data collected from annual reports, there were missing values which effect to the accuracy of the analysis. So, before going to the further steps, there was a requirement of data cleaning. So, the Replace Missing Values operator is used to replace all the missing values. Preprocessing is a important step to make the database is more accurate. By fill in the attributes that are missing can make the database more complete and smooth the data. This makes it easier to use and interpret.

In the purpose of achieving the target of the study by analyzing post-acquisition performance across industries, the selected financial ratios for selected firm from different sectors are considered and the considered sample include over a three year period before acquiring and after acquiring the company are calculated. Average from the years after the M&A and equivalent average from the each financial ratio for the years before is compared respectively.

The study will focus on five aspects of performance; profitability, efficiency, liquidity, financial structure and investment ratios, using accounting data; the analyze is performed to find the financial ratio performance of the acquiring firms.

Table 3.2: Proxies for Variables

Performance Indicator	Proxy	Operational Measurement
Profitability	Net Profit Margin	<u>Net Profit</u> Sale
	Return on Assets	<u>Net Profit</u> Total Assets
	Return on Equity	<u>Net Profit</u> Equity
Efficiency	Total Asset Turnover	<u>Sales</u> Total Assets
	Fixed Asset Turnover	<u>Sales</u> Fixed Assets
Liquidity	Current Ratio	<u>Current Assets</u> Current Liabilities
Leverage	Debt to Equity Ratio	<u>Debt</u> Equity
Investment Ratios	Earnings Per Share	Net Income – Preferred <u>Dividends</u> Average Outstanding Common Shares
	Price to Book Value	<u>Book Value per Share</u> Closing Price
	Price Earnings Ratio	<u>Closing Price</u> Earnings Per Share

The period before merger and the period after merger are characterized as Pre and Post respectively.

3.8. Overlapping Acquisitions

While conducting the study, there is a major problem in evaluating the long-term performance of the acquiring firms is that of overlapping acquisitions. The same firm can make subsequent acquisitions deals within the period considered during the study. In such cases, the long-term impact of the first acquisition can create market reaction to the subsequent acquisitions.

3.9. Regression Model

Linear regression analysis was carried out to identify the influence of variables on each financial ratio.

The empirical model to be estimated can be described as;

$$\text{Net Profit Margin} = \alpha_0 \text{ sales} + \beta_1 \text{ Net profit} + \beta_2 \text{ Equity} + \beta_3 \text{ Total Assests}$$

$$\text{Return on Assets} = \alpha_0 \text{ sales} + \beta_1 \text{ Net profit} + \beta_2 \text{ Equity} + \beta_3 \text{ Total Assests}$$

$$\text{Return on Equity} = \alpha_0 \text{ sales} + \beta_1 \text{ Net profit} + \beta_2 \text{ Equity} + \beta_3 \text{ Total Assests}$$

$$\text{Total Assets Turn over} = \alpha_0 \text{ sales} + \beta_1 \text{ Total Assests} + \beta_2 \text{ Fixed Assests}$$

$$\text{Fixed Assests Turn over} = \alpha_0 \text{ sales} + \beta_1 \text{ Total Assests} + \beta_2 \text{ Fixed Assests}$$

Chapter 4

Empirical Results and Discussion

4.1. Introduction to the chapter

This chapter encompasses analysis and a discussion of the findings of this study. The designated model and its significance have been discussed using different tools. Moreover, the chapter critically examines the primary and secondary objectives of this study corresponding to the empirical studies identified during the literature review. Chapter four intends to analyze and discuss the post-acquisition performance findings of acquiring businesses listed on CSE, in which the M&A occurred during the period from 2002 to 2014.

In the section 5.1 under this chapter delivers a brief overview of the chapter. The section 5.1.1 compares the performance of operating of acquirers previously to the M&A and after M&A in terms of efficiency, profitability, investment, liquidity and financial structure ratios with and without considering the overlapping effect. Then, the study attempts to inspect Post-Acquisition Performance of different Acquiring Companies 5.1.2. The 5.1.3 section studies the post M&A performance based on years. The section 5.1.4 investigates Post-acquisition Performances based on Average Ratios of all the firms compared with 3 years before and 3 years after acquisition with the year of acquisition.

4.2. Descriptive Statistics

This study determine whether there is a difference in operating performance in before and after acquisition as the main objective. In order to accomplish the stated objective, the study involves ten accounting ratios covering five aspects of performance.

This study encompasses 32 observations to identify whether; there is any major difference in performance between the two periods under concern.

The following descriptive analysis provides a summary of the ratios for the pre- and post-acquisition periods.

4.2.1. Post-Acquisition Operating Performance for the Overall Sample

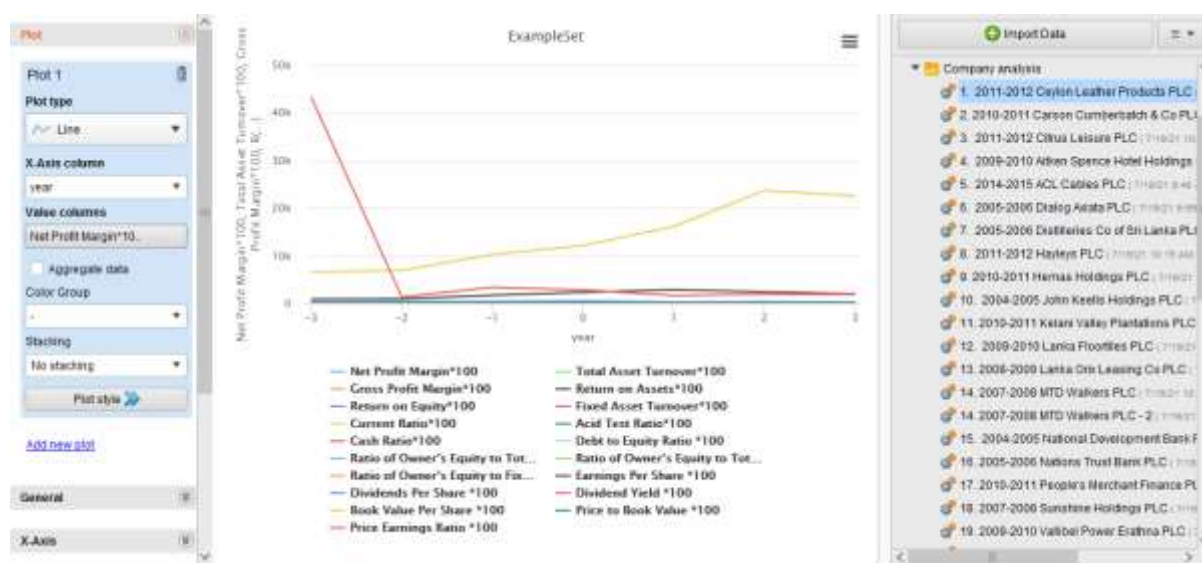


Figure 4.1: 2011-2012 Ceylon Leather Products PLC

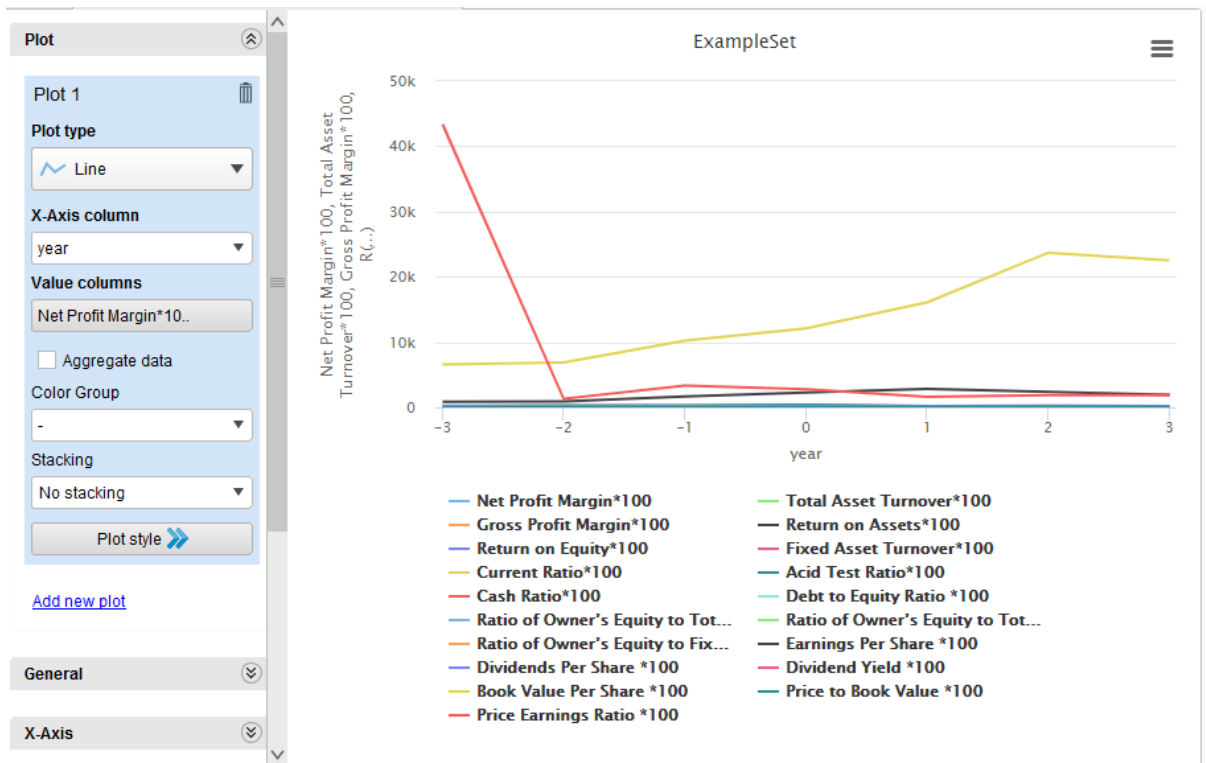


Figure 4.2: 2010-2011 Carson Cumberbatch & Co PLC

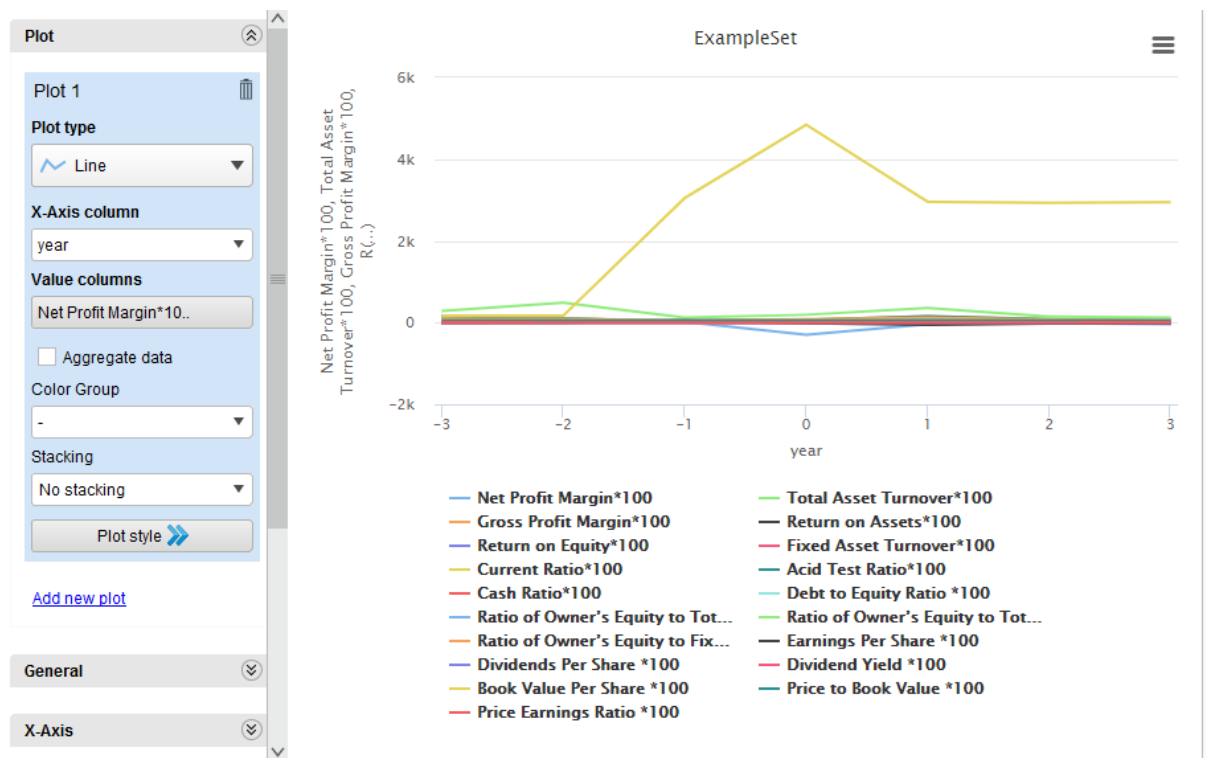


Figure 4.3: 2011-2012 Citrus Leisure PLC

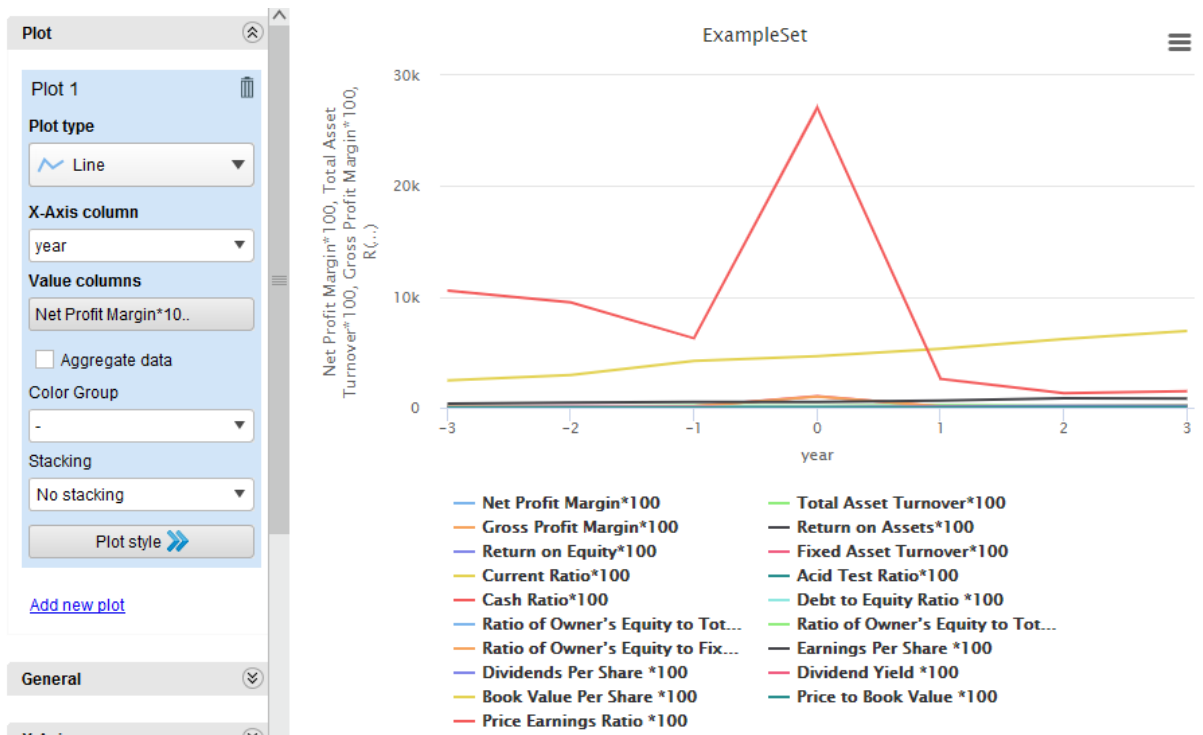


Figure 4.4: 2009-2010 Aitken Spence Hotel Holdings PLC

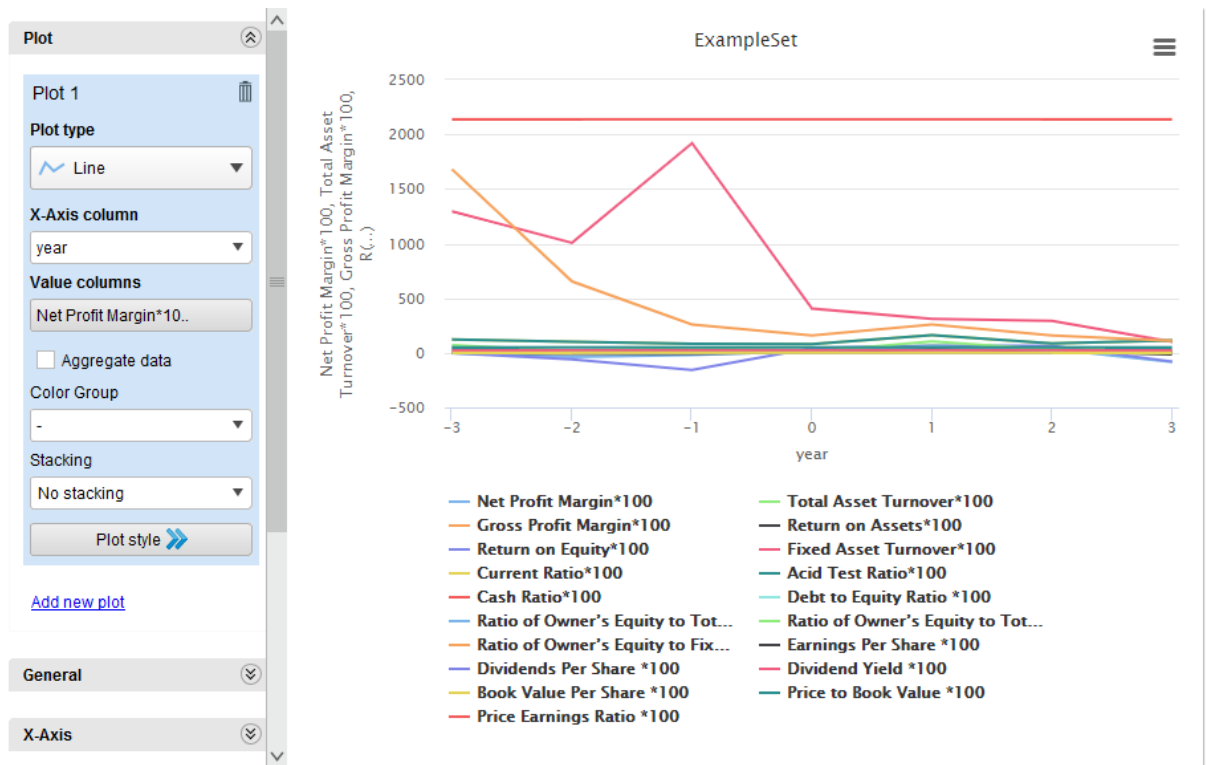


Figure 4.5: 2014-2015 ACL Cables PLC

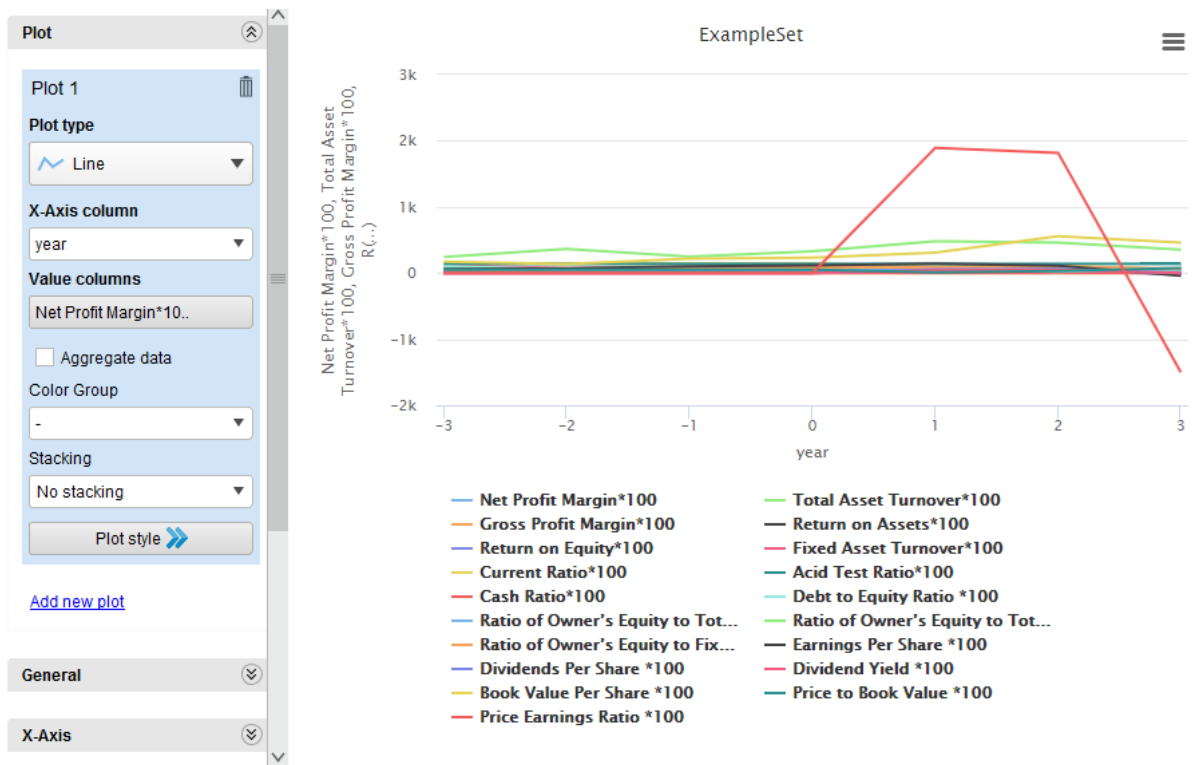


Figure 4.6: 2005-2006 Dialog Axiata PLC

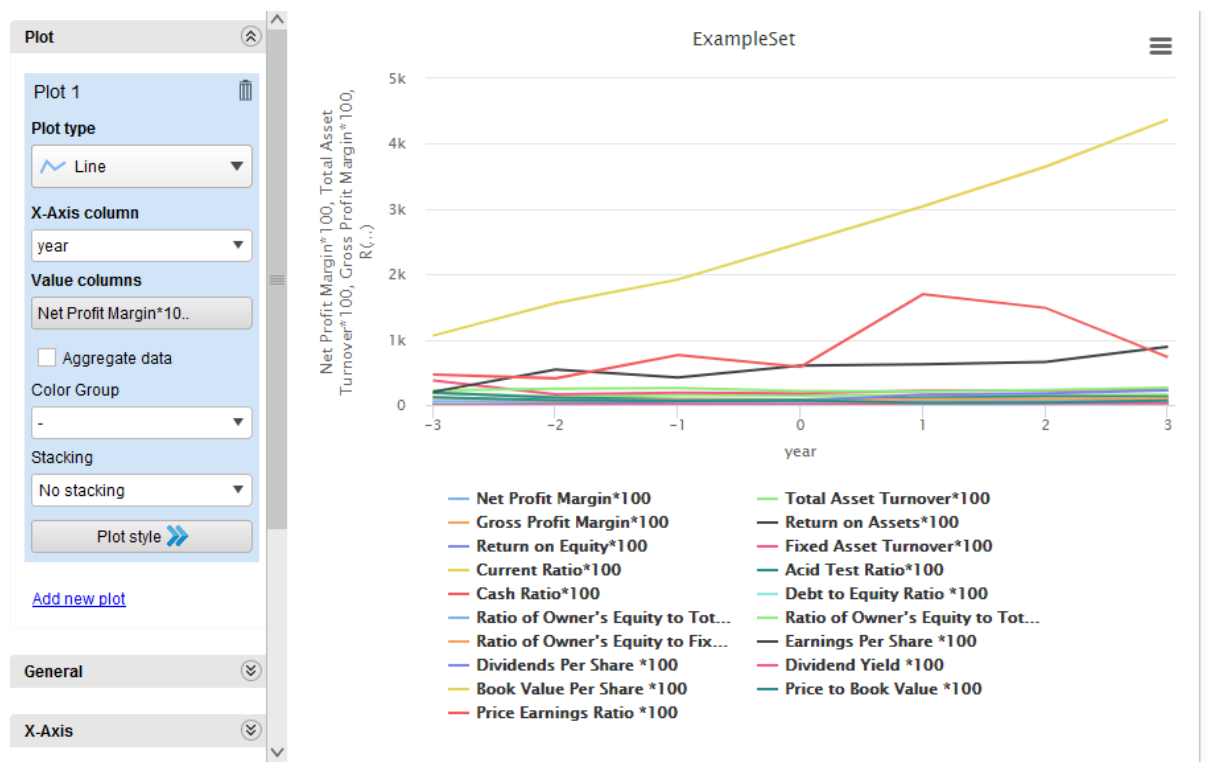


Figure 4.7: 2005-2006 Distilleries Co of Sri Lanka PLC

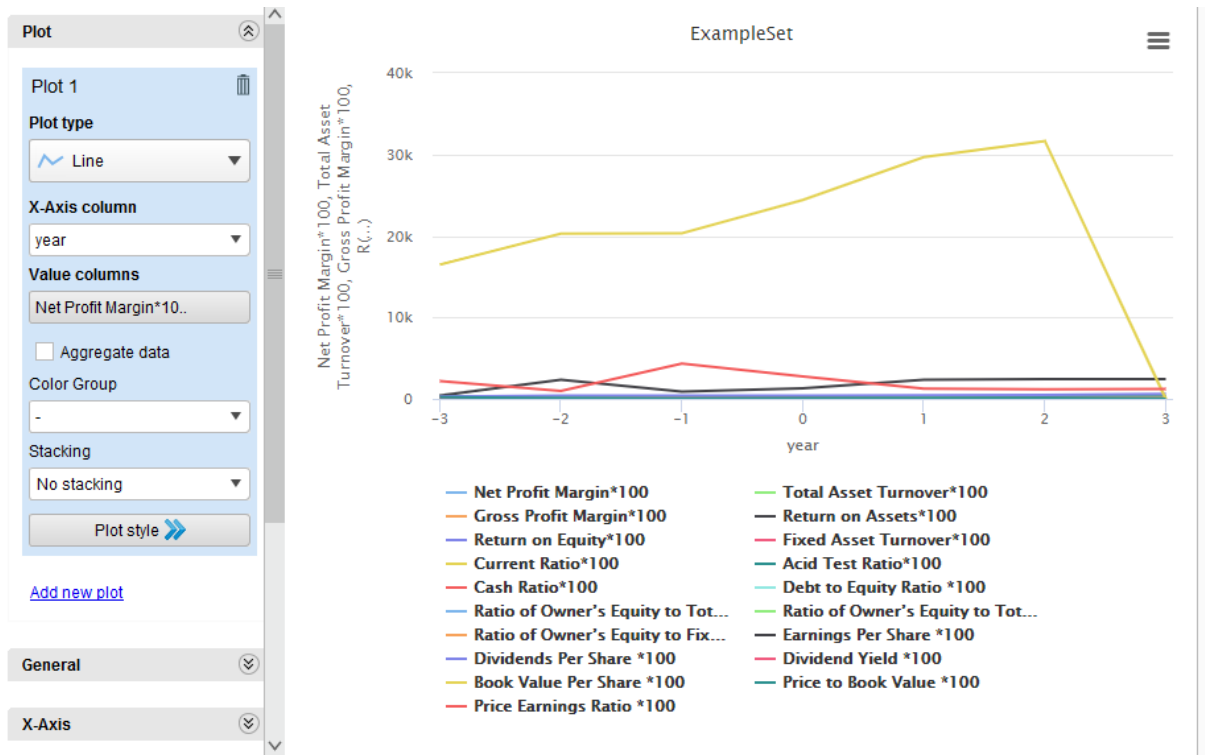


Figure 4.8: 2011-2012 Hayleys PLC

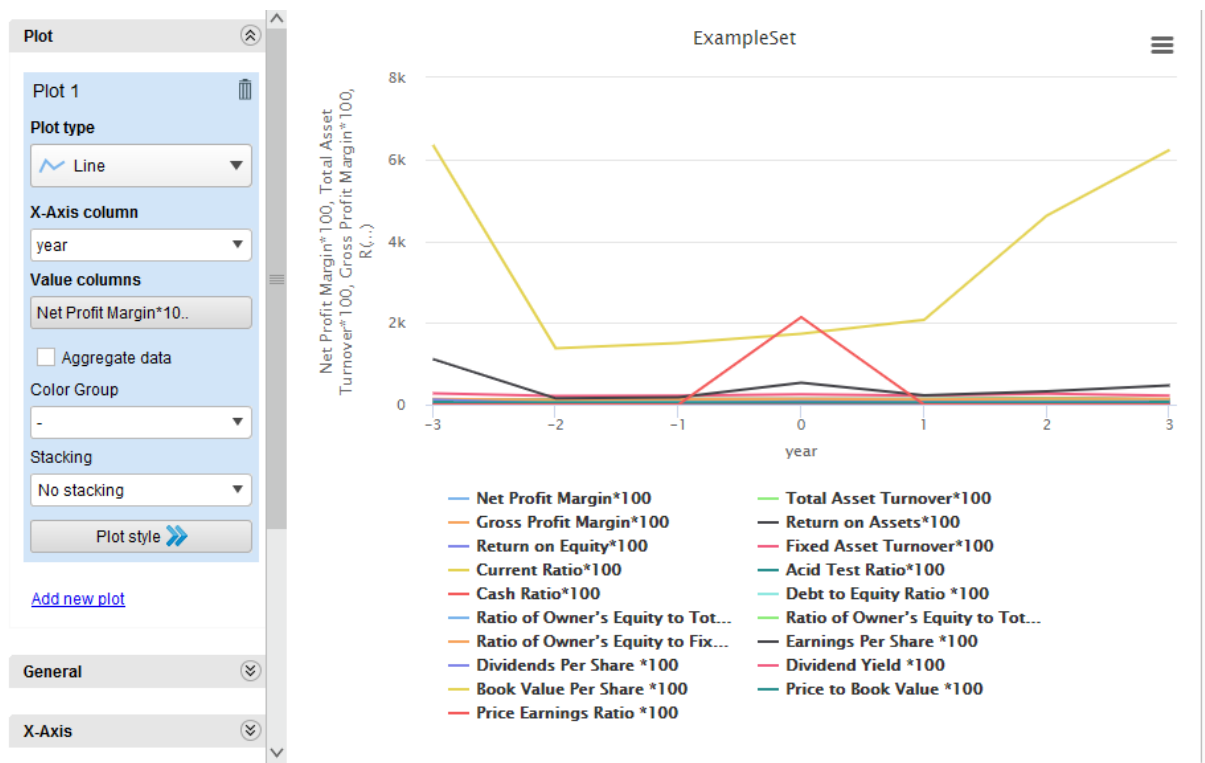


Figure 4.9: 2010-2011 Hemas Holdings PLC

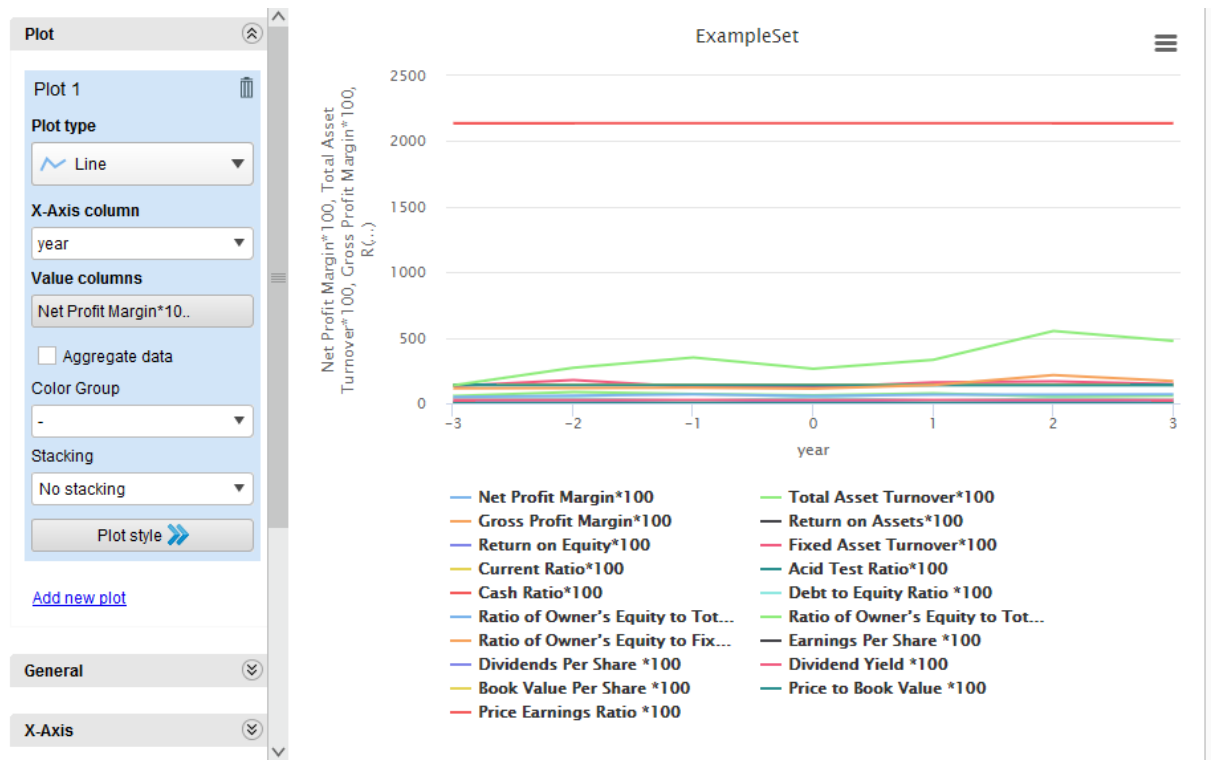


Figure 4.10: 2004-2005 John Keells Holdings PLC

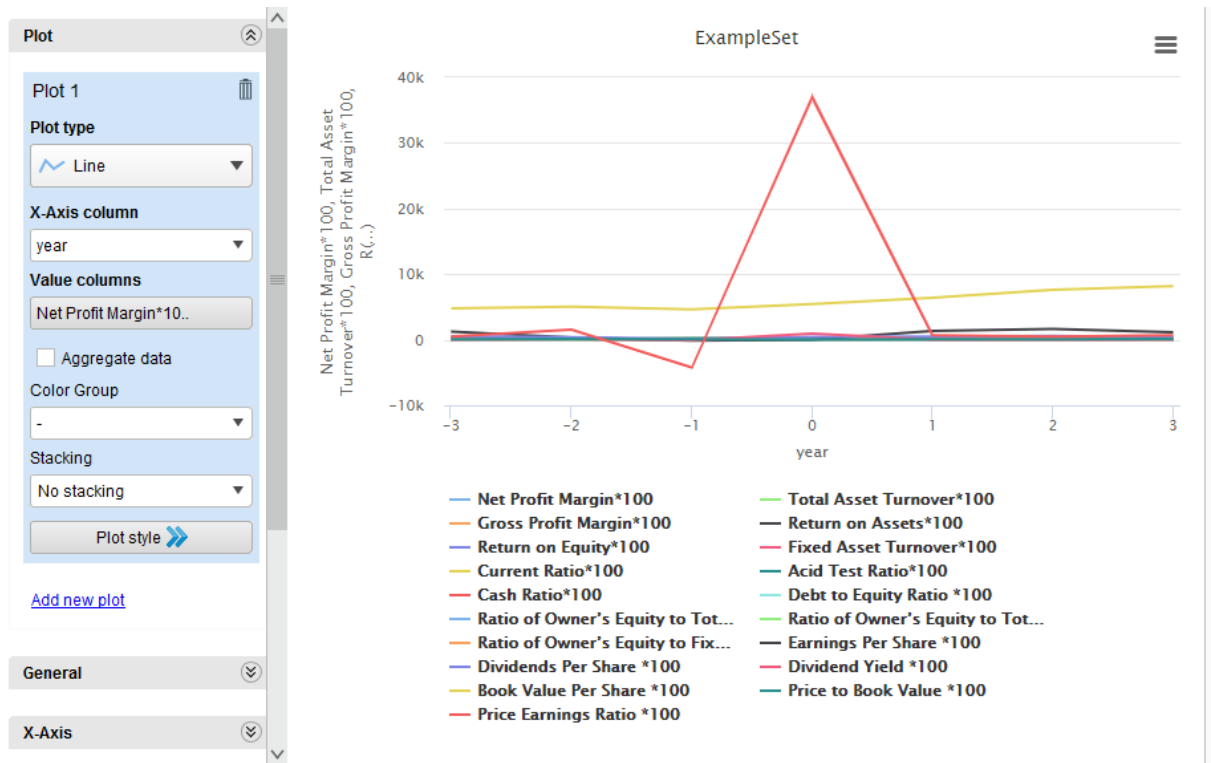


Figure 4.11: 2010-2011 Kelani Valley Plantations PLC

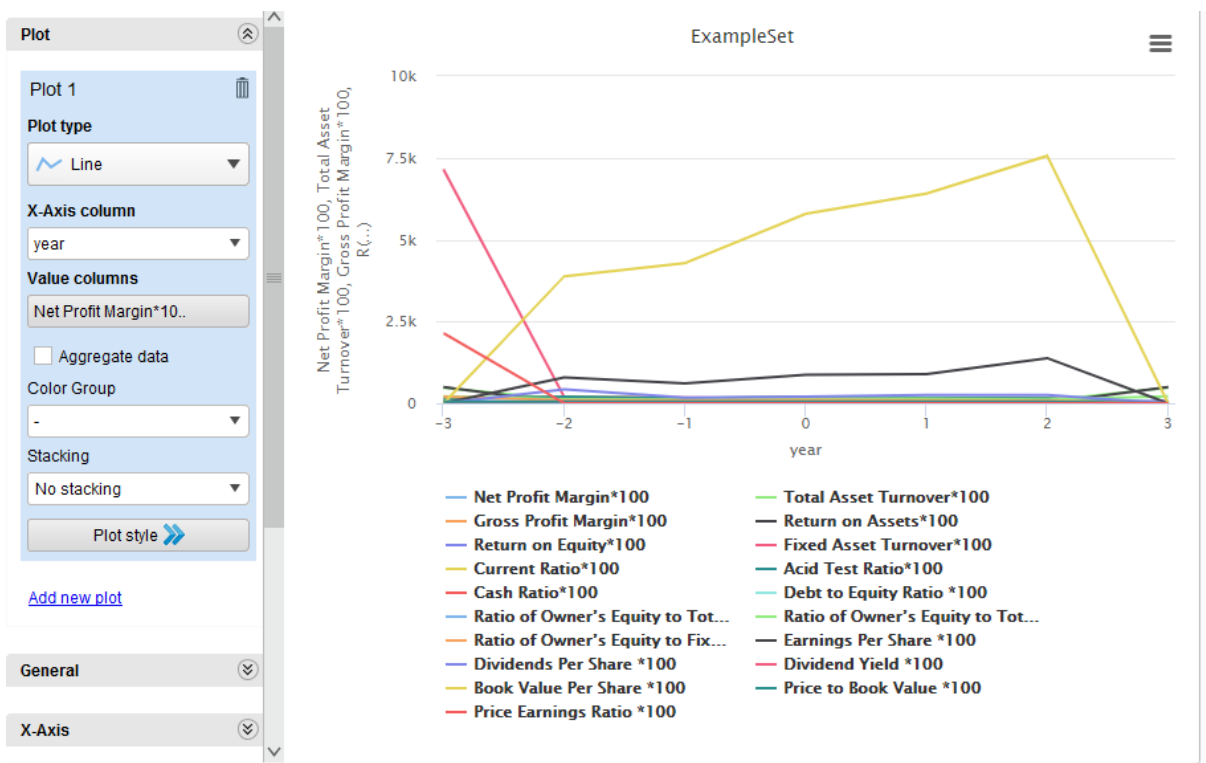


Figure 4.12: 2009-2010 Lanka Floortiles PLC



Figure 4.13: 2008-2009 Lanka Orix Leasing Co PLC

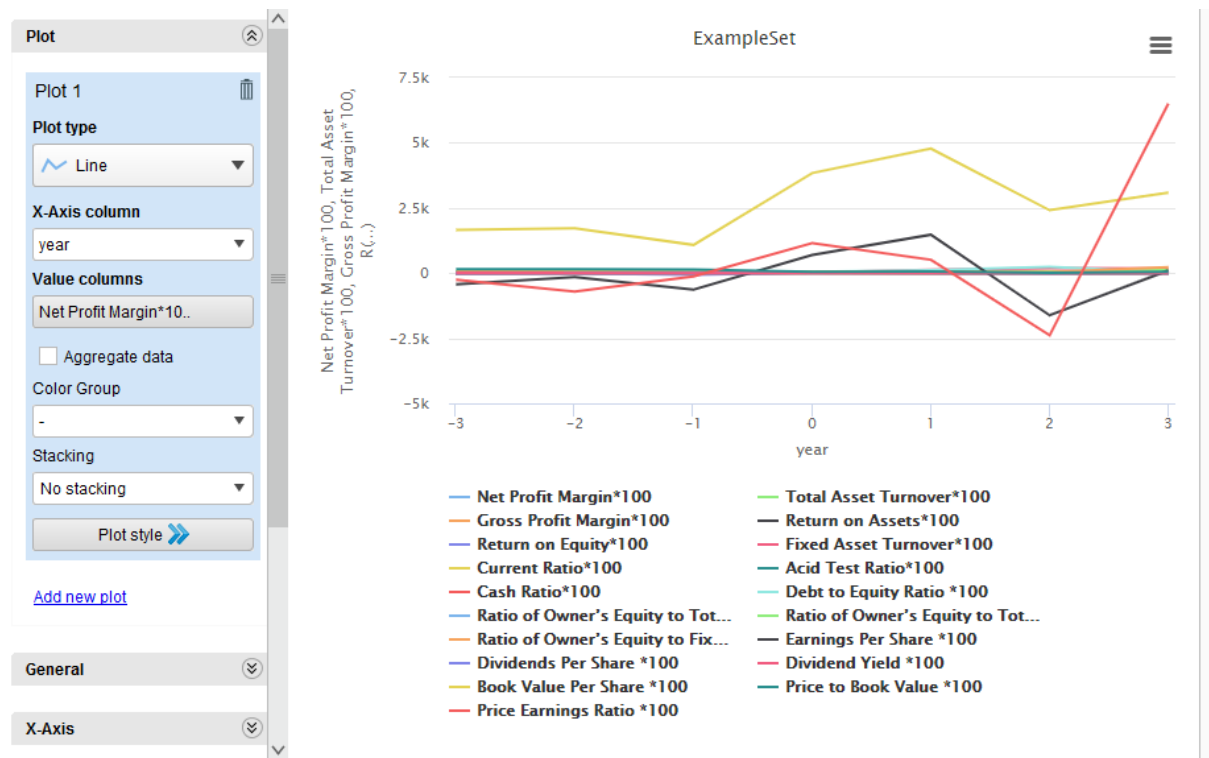


Figure 4.14: 2007-2008 MTD Walkers PLC

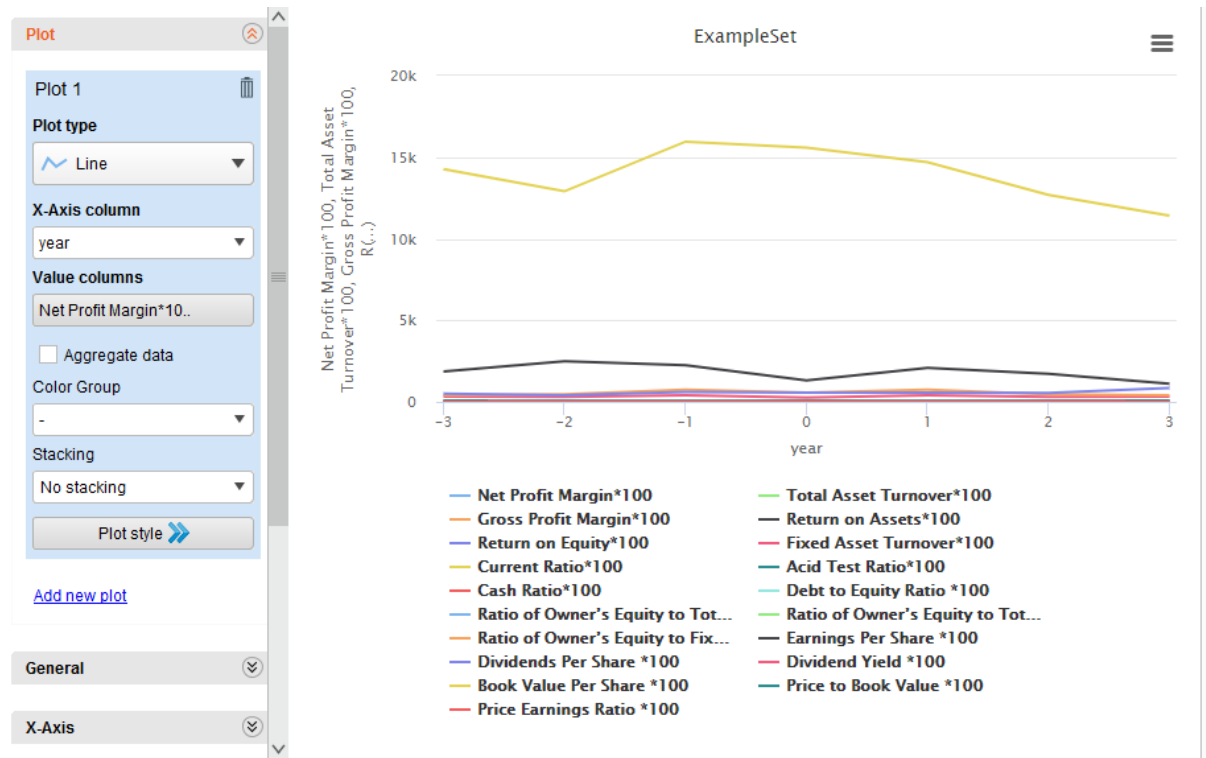


Figure 4.15: 2004-2005 National Development Bank PLC

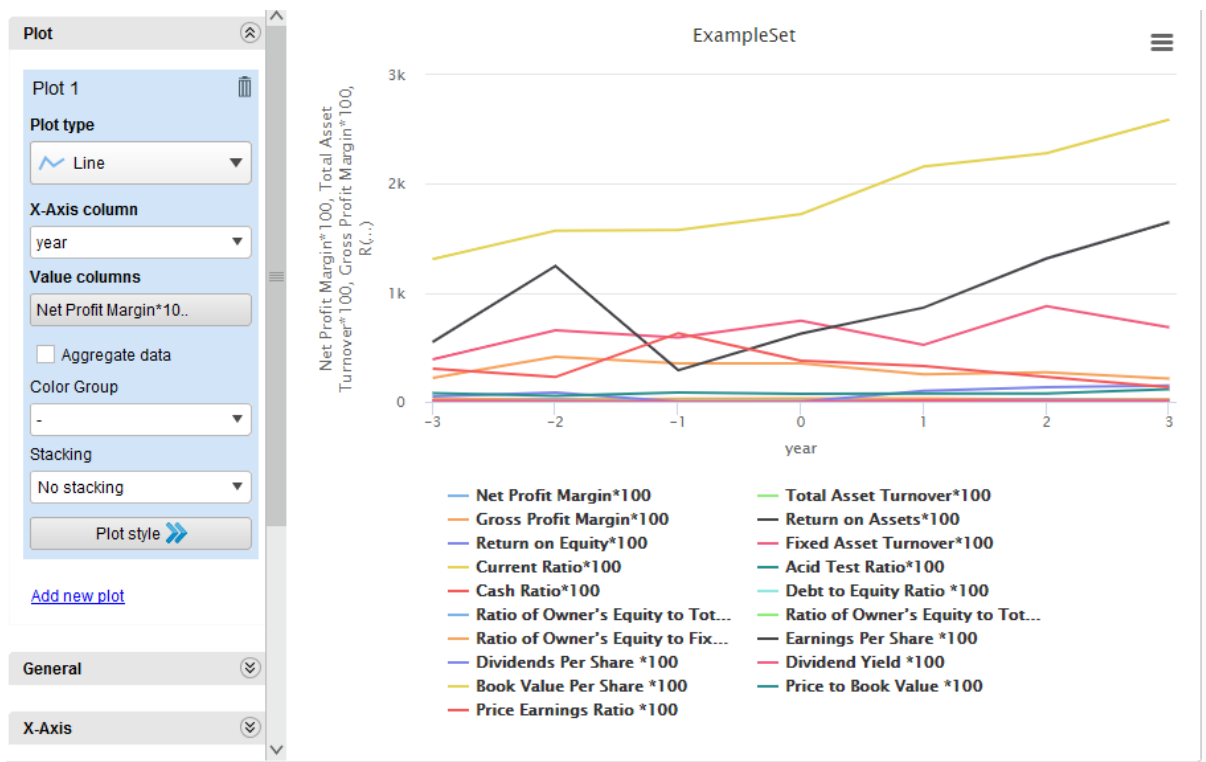


Figure 4.16: 2005-2006 Nations Trust Bank PLC

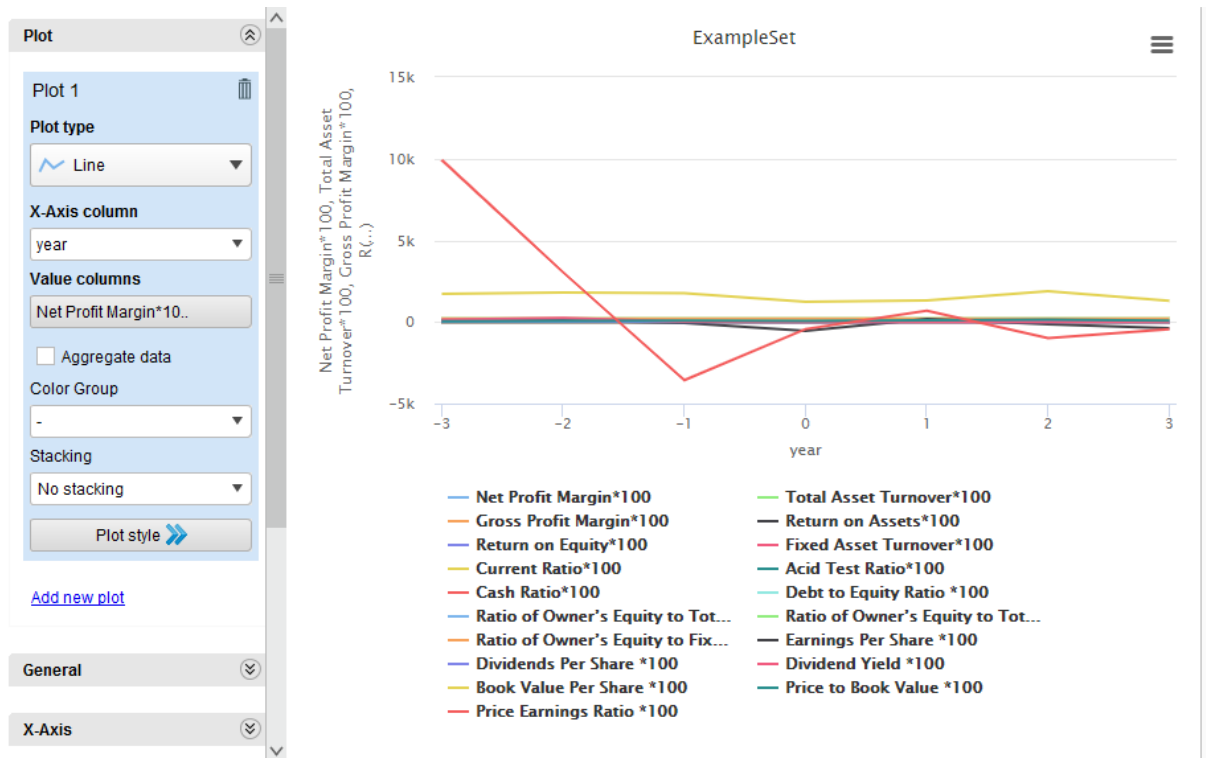


Figure 4.17: 2010-2011 People's Merchant Finance PLC

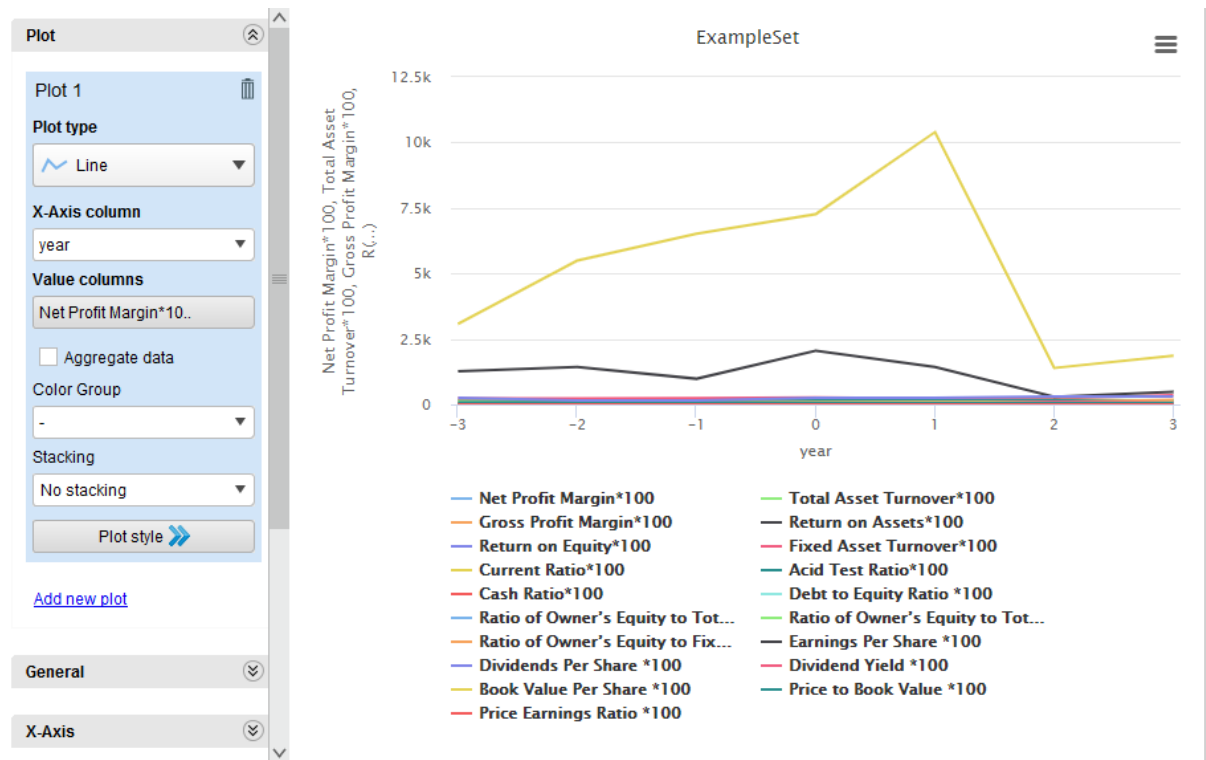


Figure 4.18: 2007-2008 Sunshine Holdings PLC

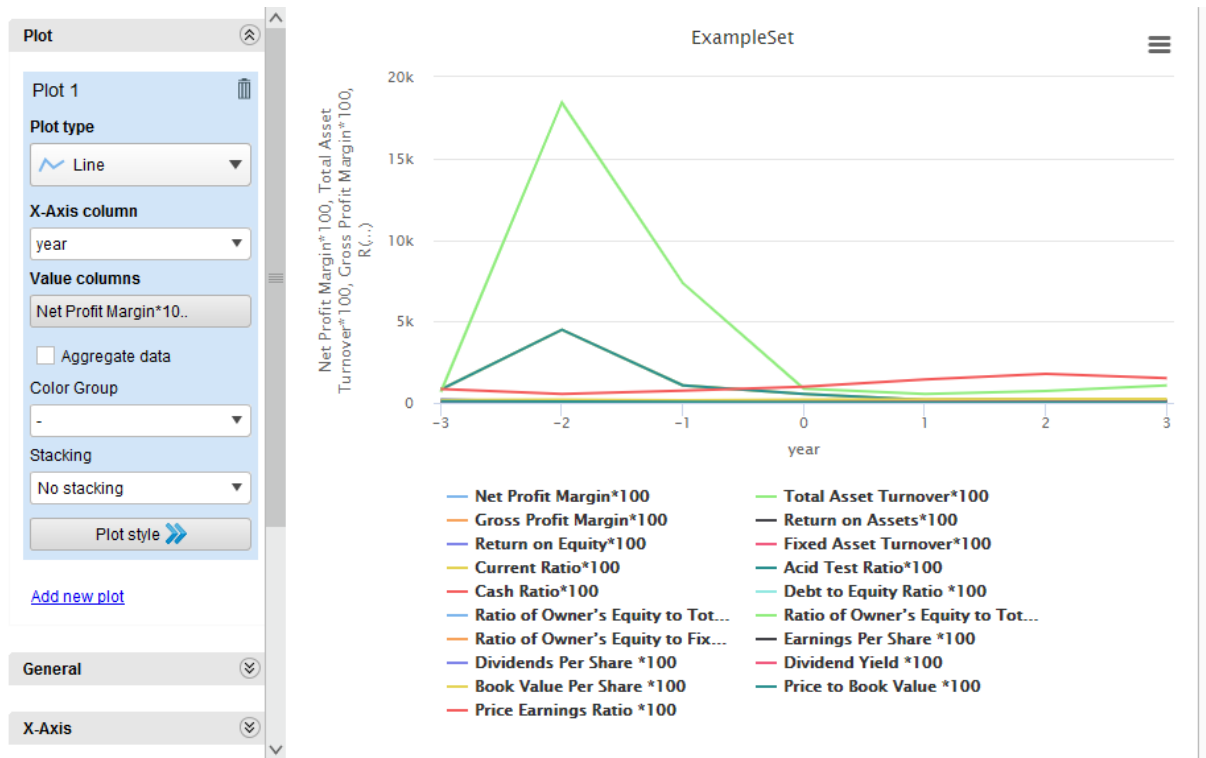


Figure 4.19: 2009-2010 Vallibel Power Erathna PLC

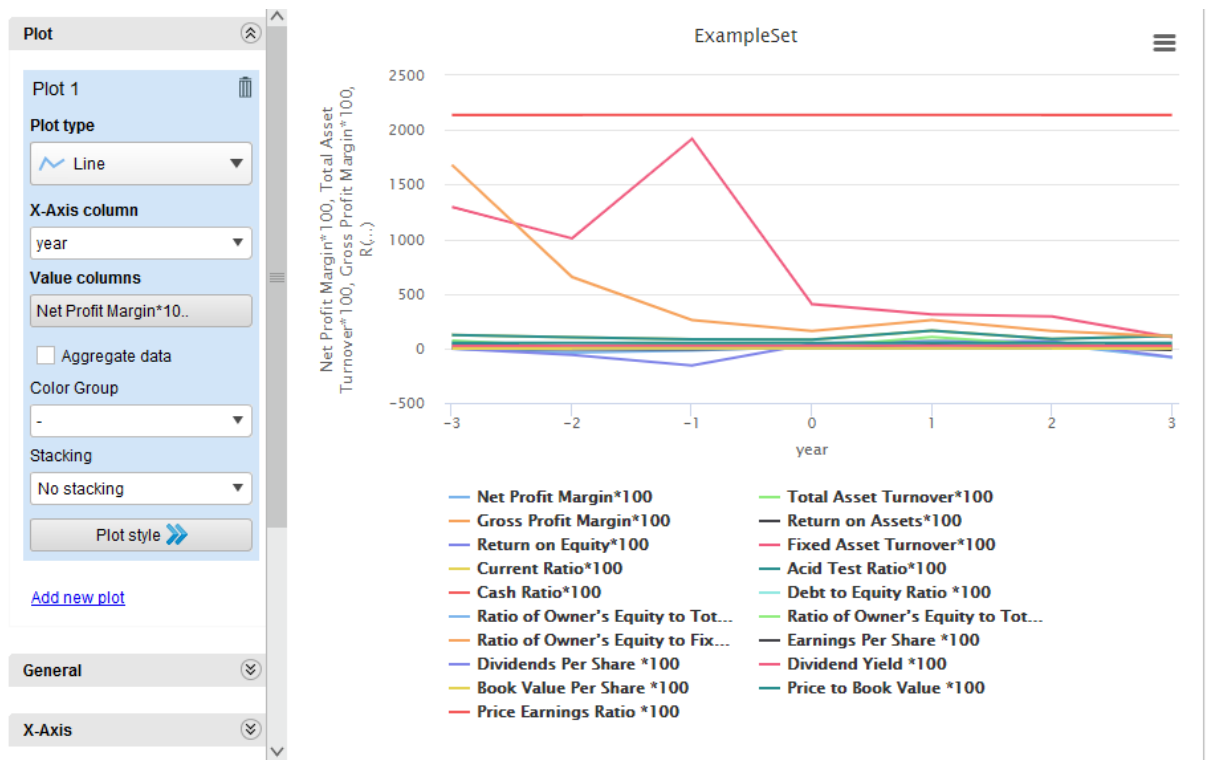


Figure 4.20: 2014-2015 Commercial Credit And Finance PLC

4.2.2. Post-Acquisition Performance of Acquiring Firms

Acquirer Name: ACL Cables PLC

- Financial Year: 2014/2015

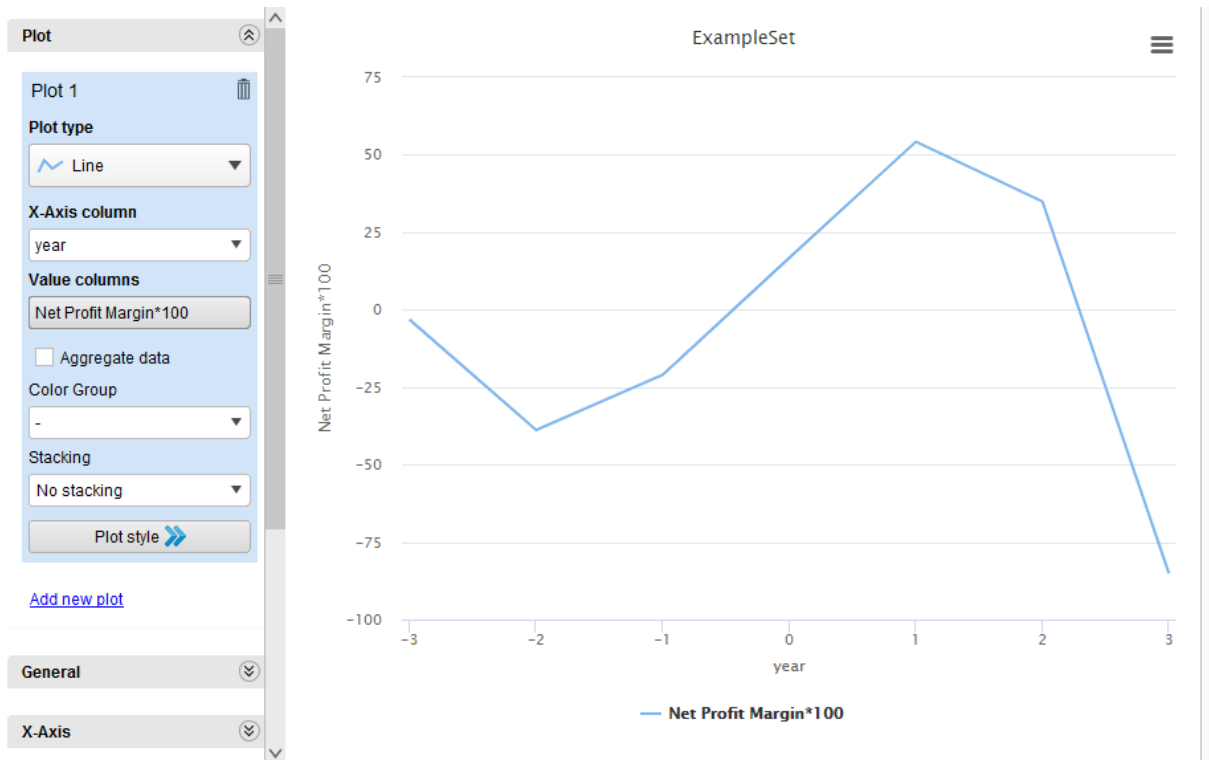


Figure 4.21: Net profit margin in % of ACL Cables PLC from financial year 2011-12 to 2017-18

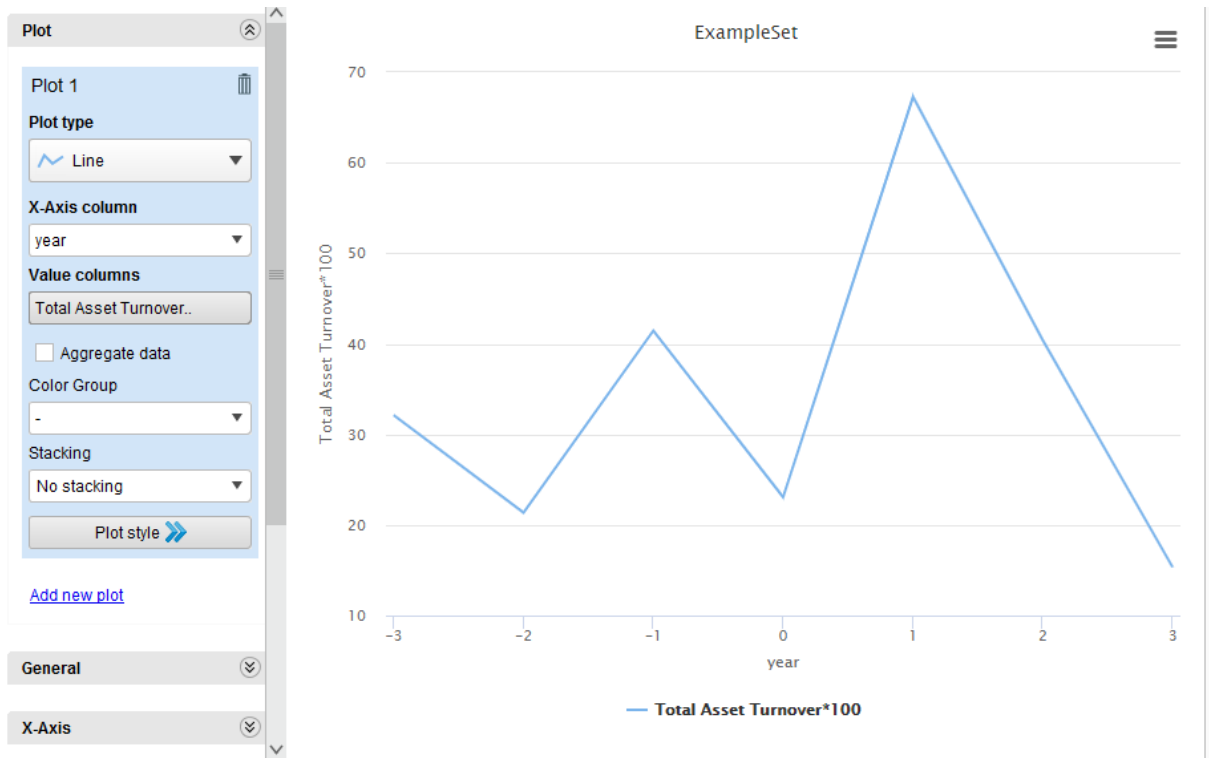


Figure 4.22: Total Asset turnover in % of ACL Cables PLC from financial year 2011-12 to 2017-18

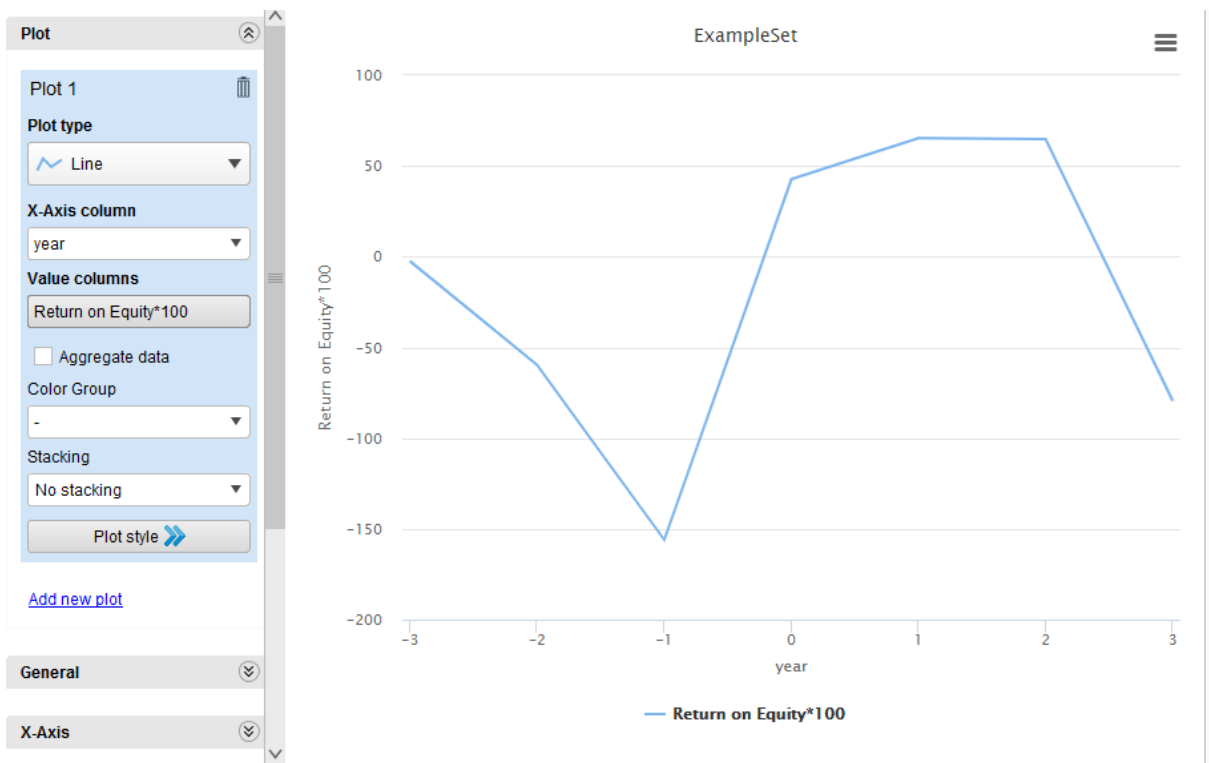


Figure 4.23: Return on equity in % of ACL Cables PLC from financial year 2011-12 to 2017-18

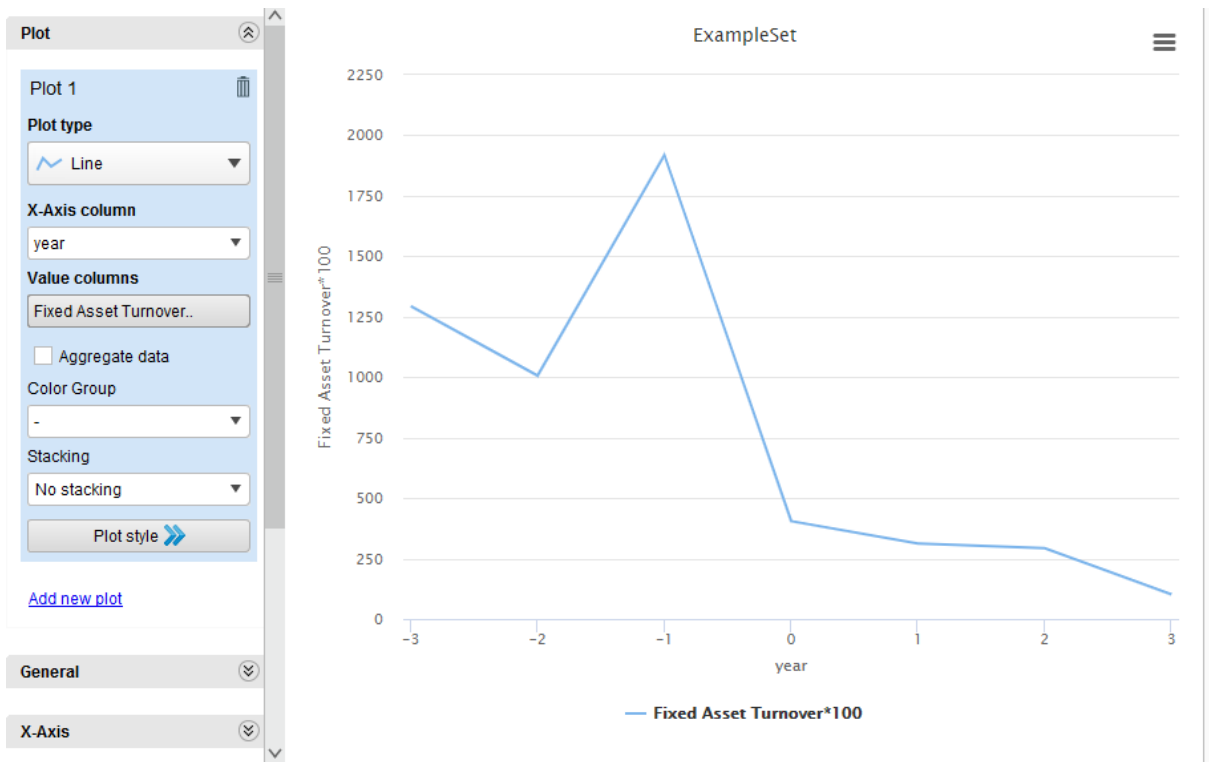


Figure 4.24: Fixed Asset Turnover in % of ACL Cables PLC from financial year 2011-12 to 2017-18

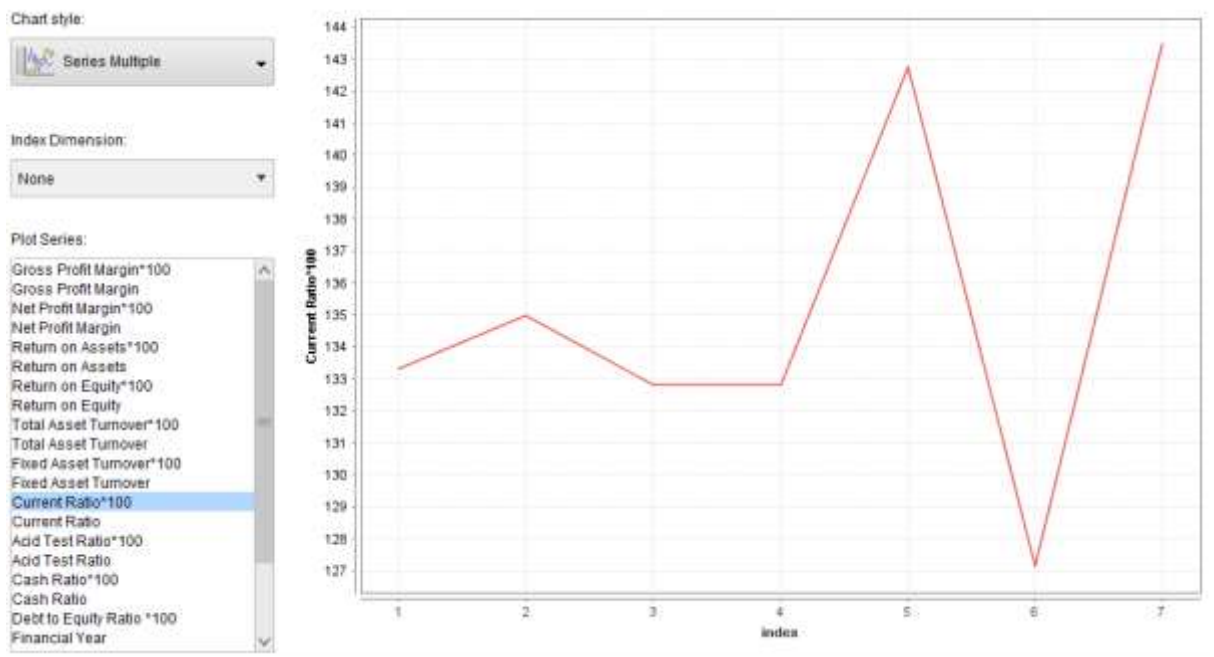


Figure 4.25: Current ratio in % of ACL Cables PLC from financial year 2011-12 to 2017-18

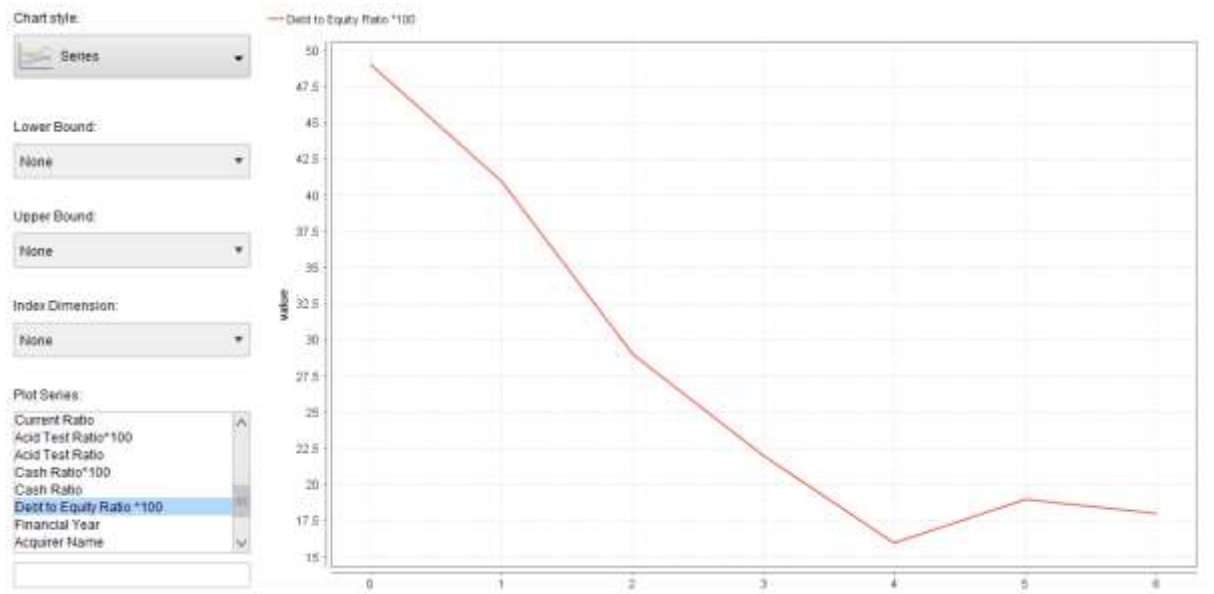


Figure 4.26: Debt to equity ratio in % of ACL Cables PLC from financial year 2011-12 to 2017-18

Summary

Net profit margin of the company has declined from 2011 to 2015, the year of the acquisition and slightly increased in between year 2012 and 2013. However they have been able to recover it again until the year 2017. The return on assets ratio has been declined over the years and also return of equity has been declined drastically over the years according to the analysis. This indicates that the firm is not causing a good impact on return on their assets with this acquisition.

4.2.3. Post-acquisition Performances based on years

This section compares the pre and post-performance of selected acquiring firms based on accounting ratios; efficiency, profitability, liquidity, financial structure and investment ratios, including and excluding the overlapping M&A deals.

Profitability Ratio

All the firms compared with 3 years before acquisition and 3 years after acquisition with the year of acquisition

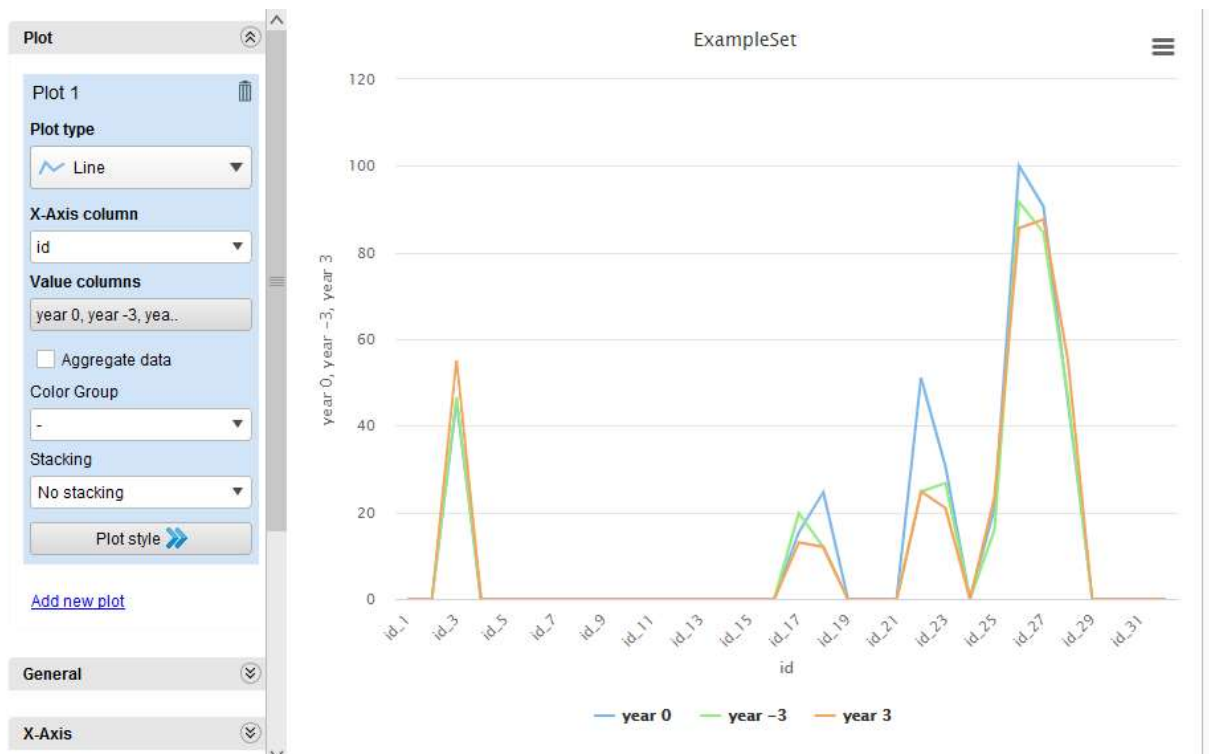


Figure 4.27: Average Gross profit margin of all the firms

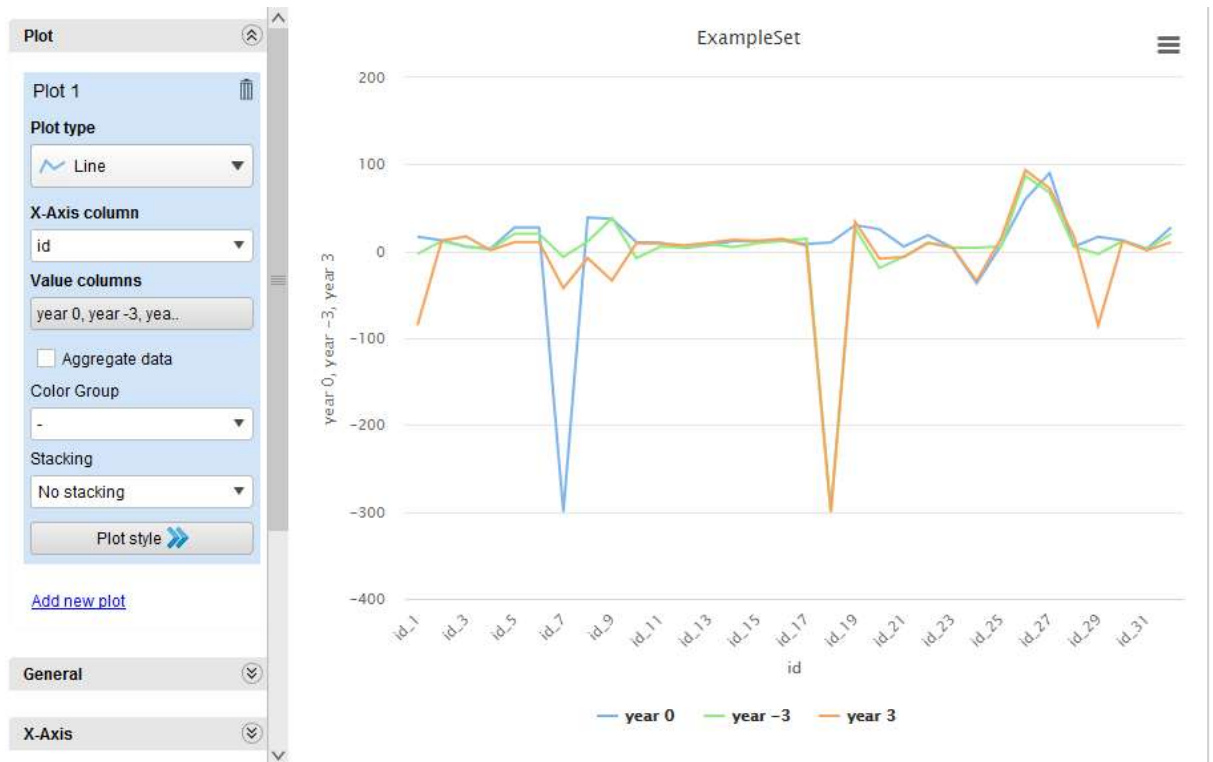


Figure 4.28: Net profit margin of all the firms

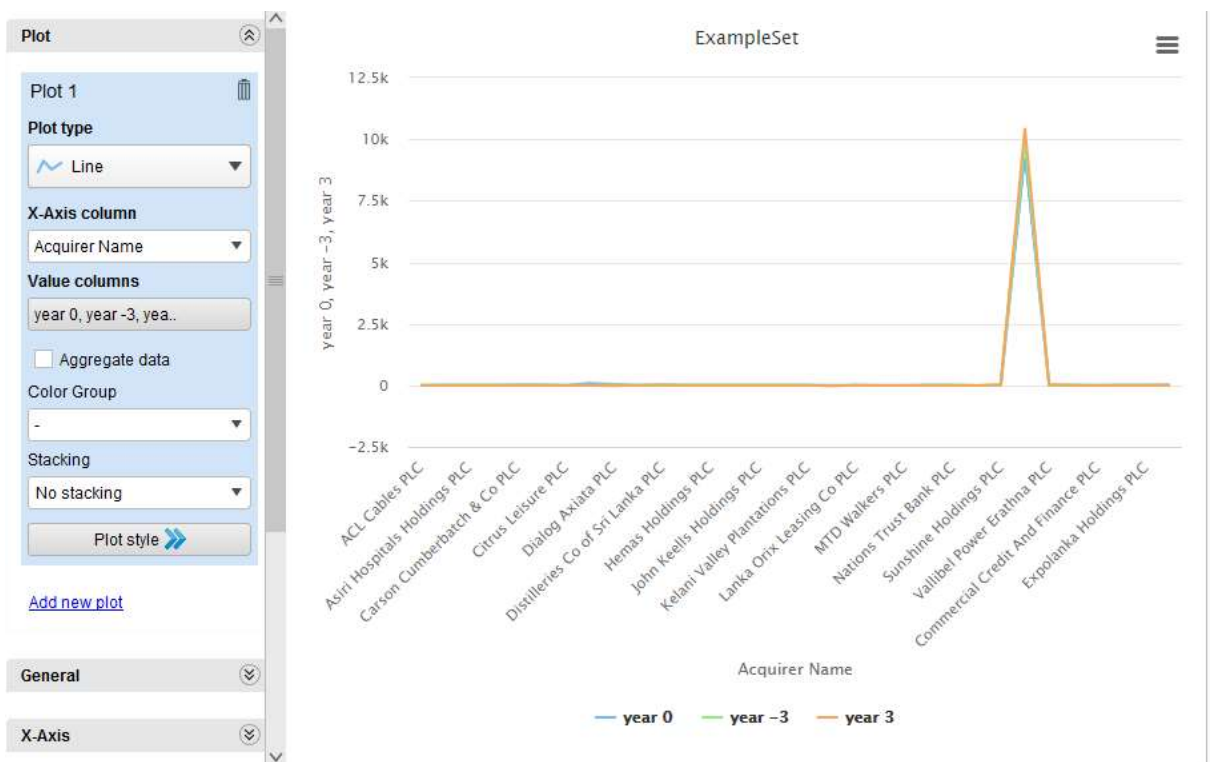


Figure 4.29: Return of Assets of all the firms

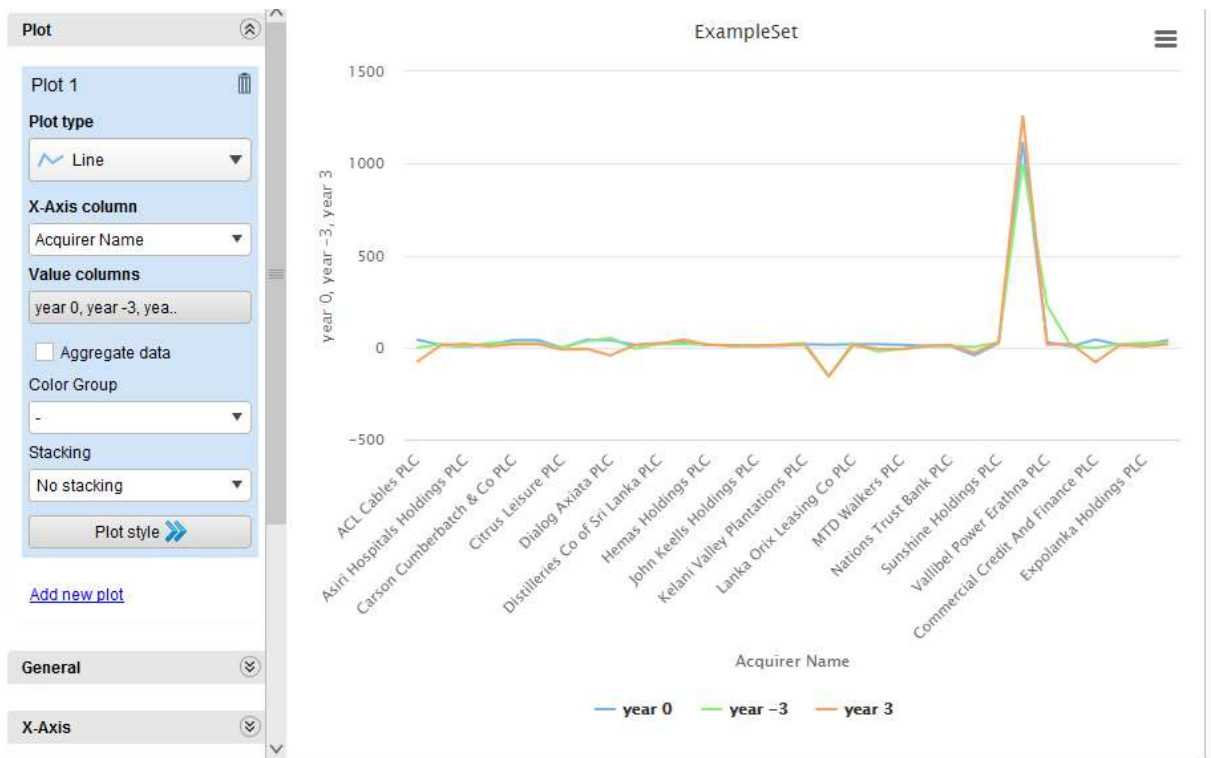


Figure 4.30: Return on equity of all the firms

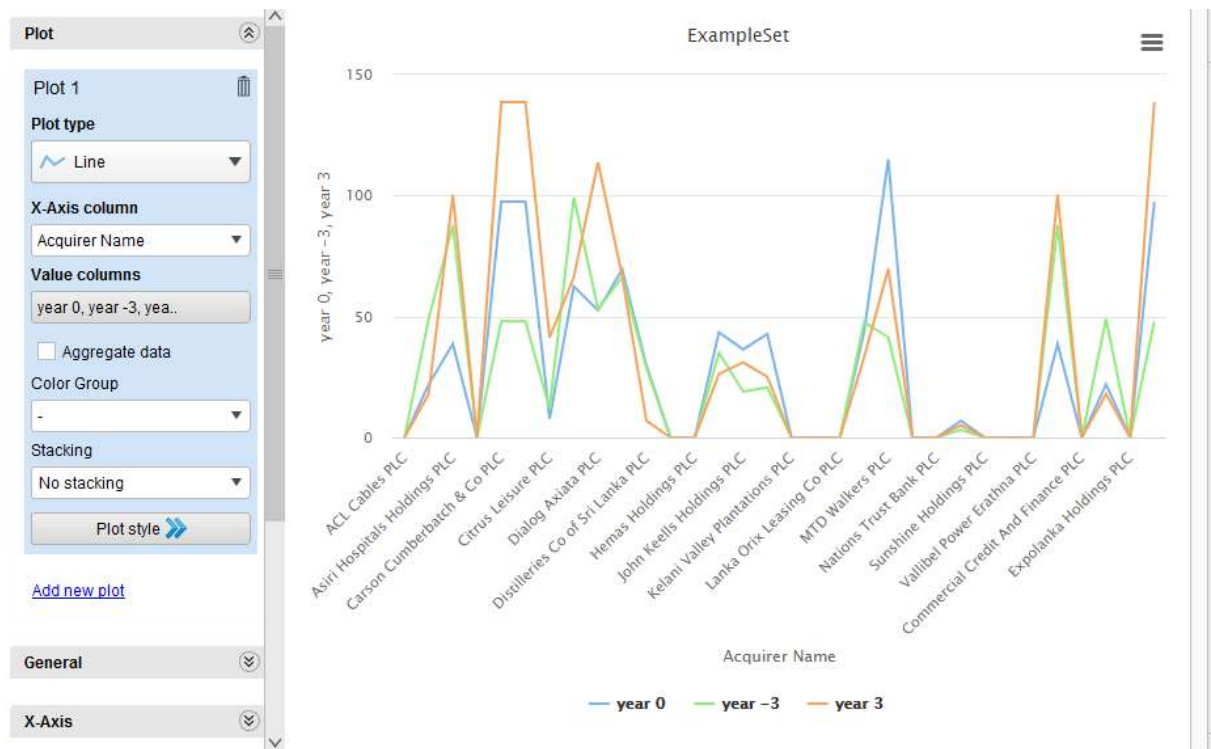


Figure 4.31: Debt Equity Ratio of all the firms

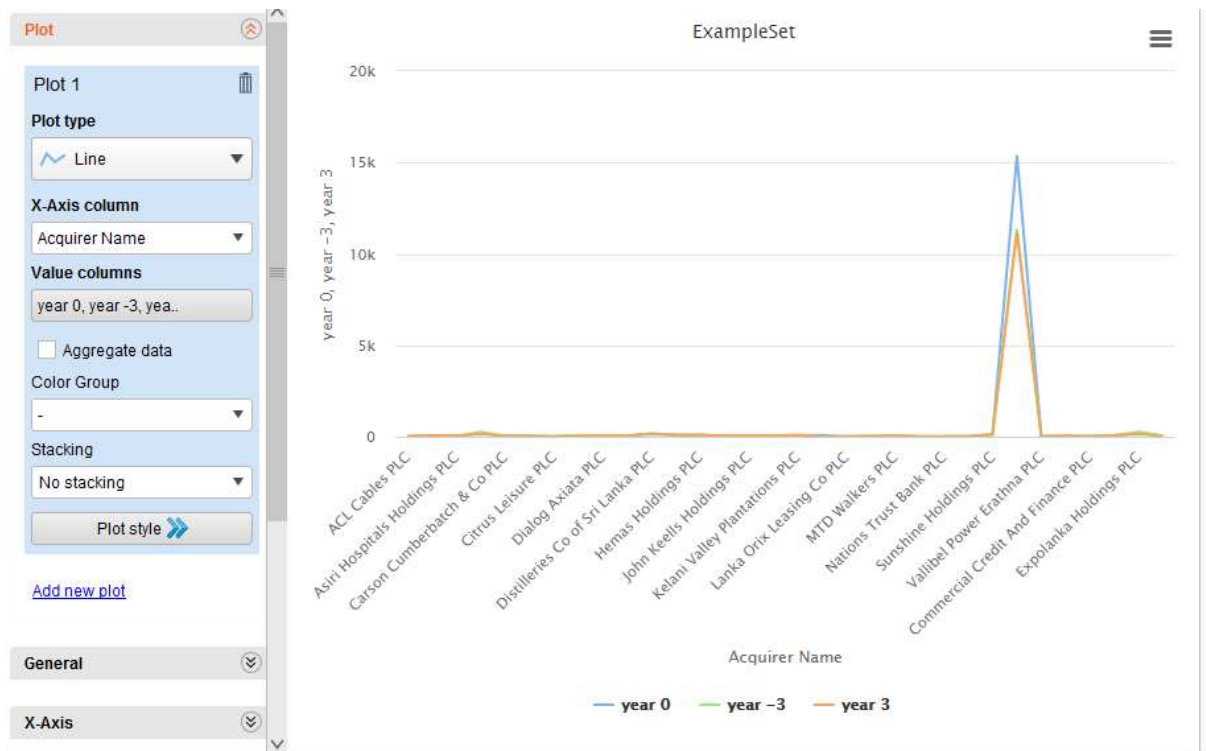


Figure 4.32: Total Asset turnover of all the firms

All the firms compared with 2 years before acquisition and 2 years after acquisition with the year of acquisition

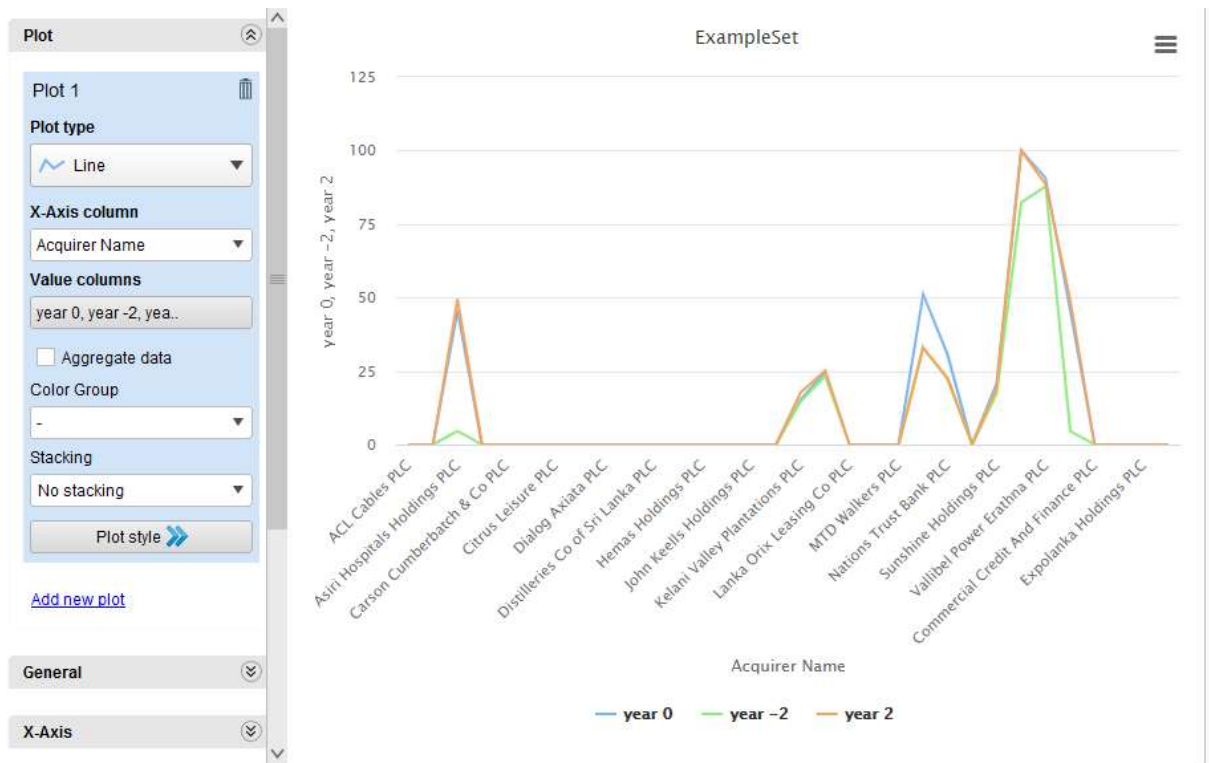


Figure 4.33: Gross profit margin of all the firms

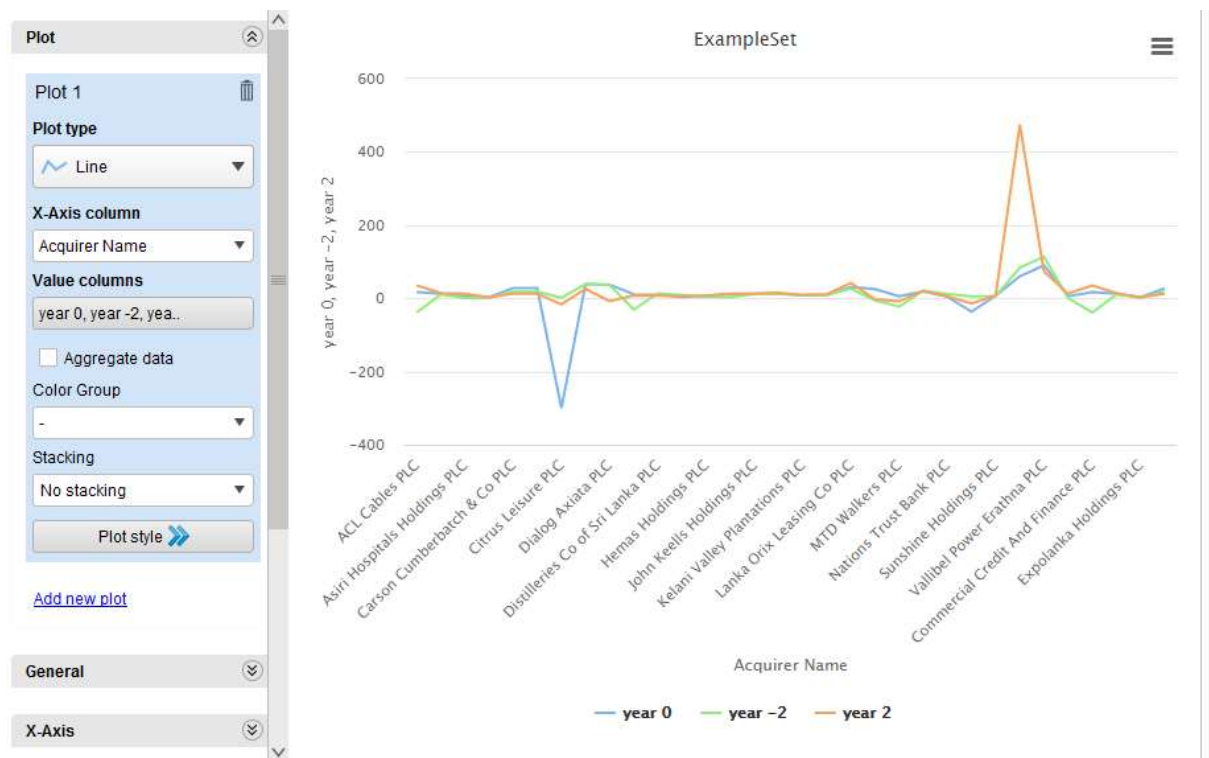


Figure 4.34: Net profit margin of all the firms

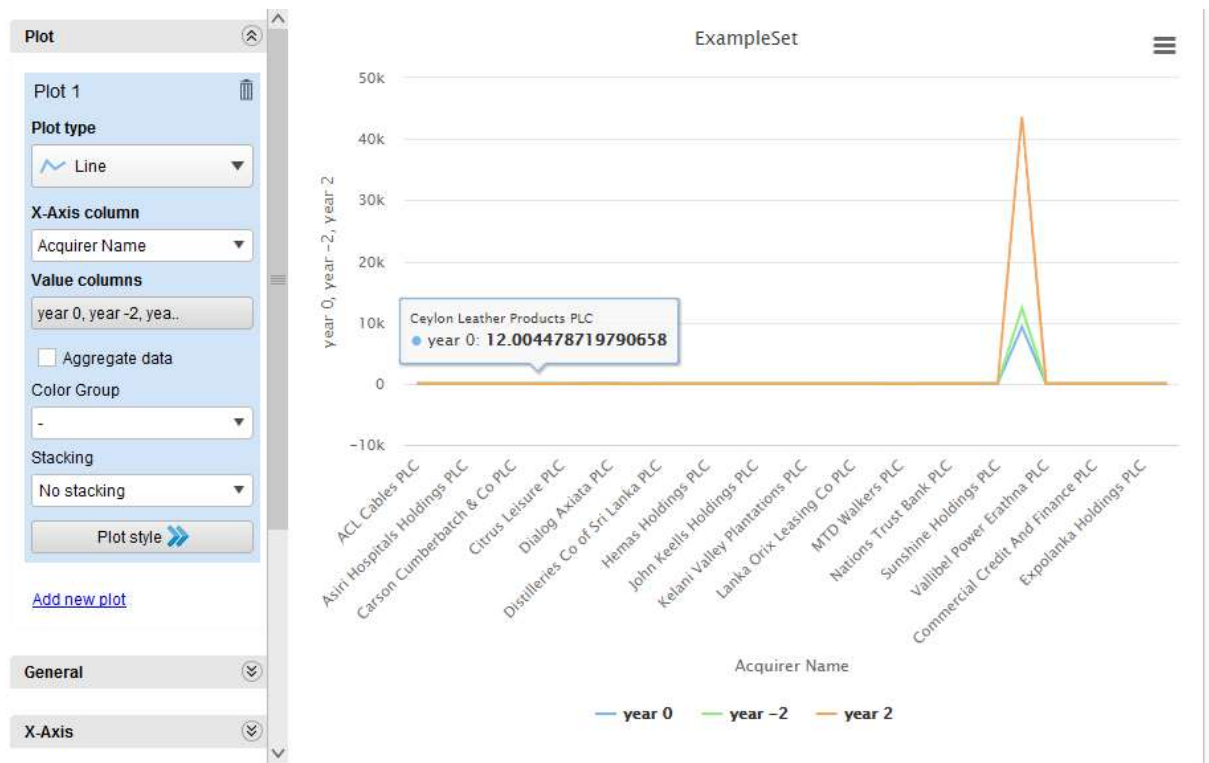


Figure 4.35: Return of Assets of all the firms

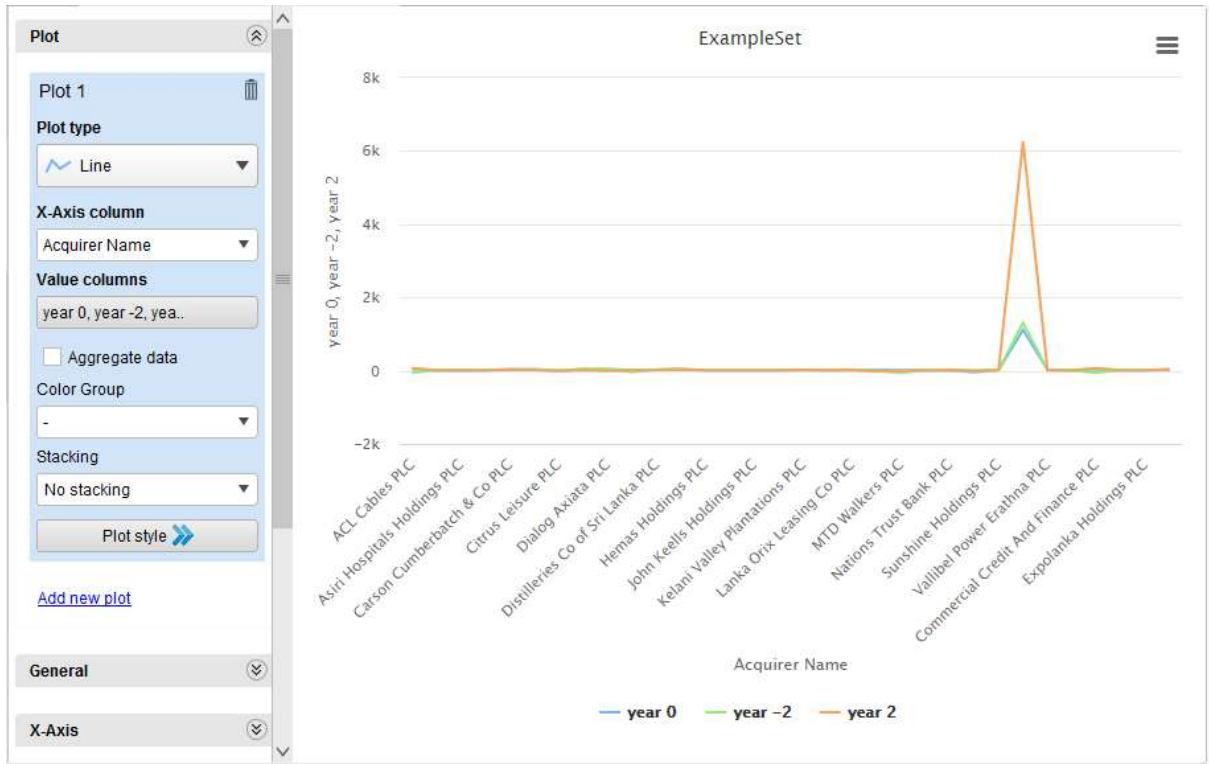


Figure 4.36: Return on equity of all the firms

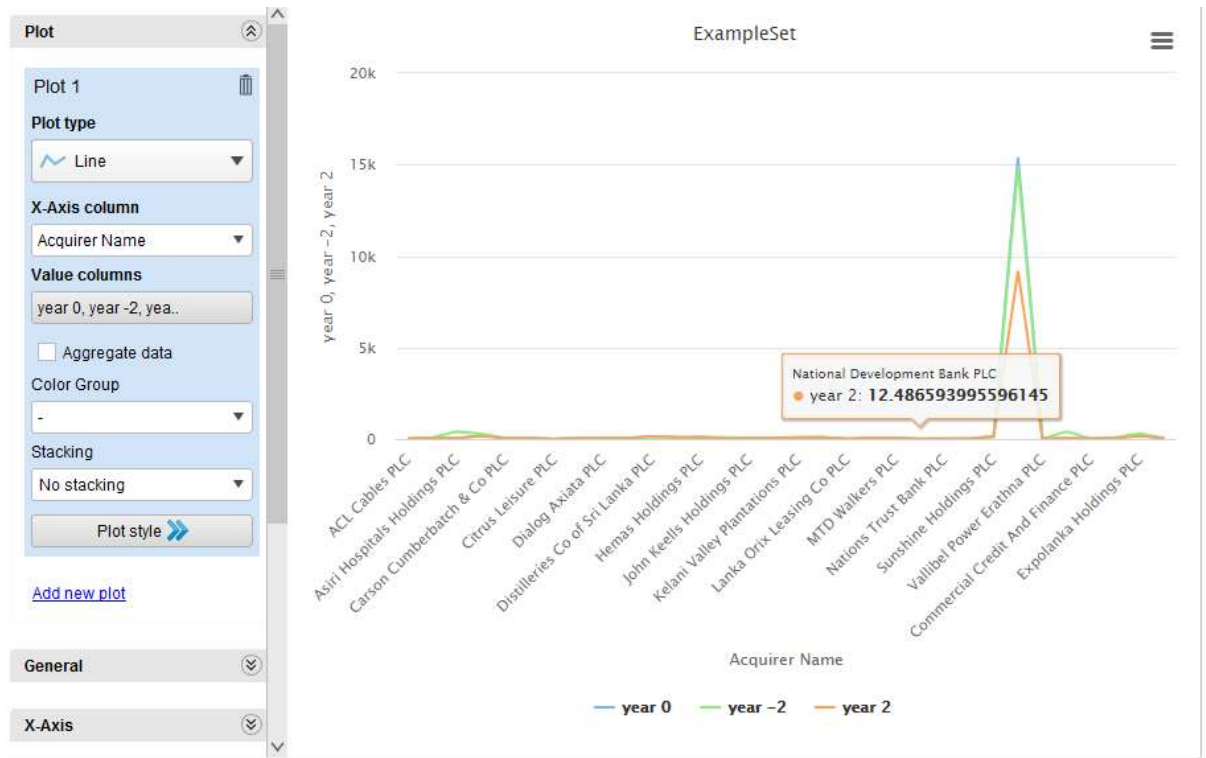


Figure 4.37: Debt Equity Ratio of all the firms

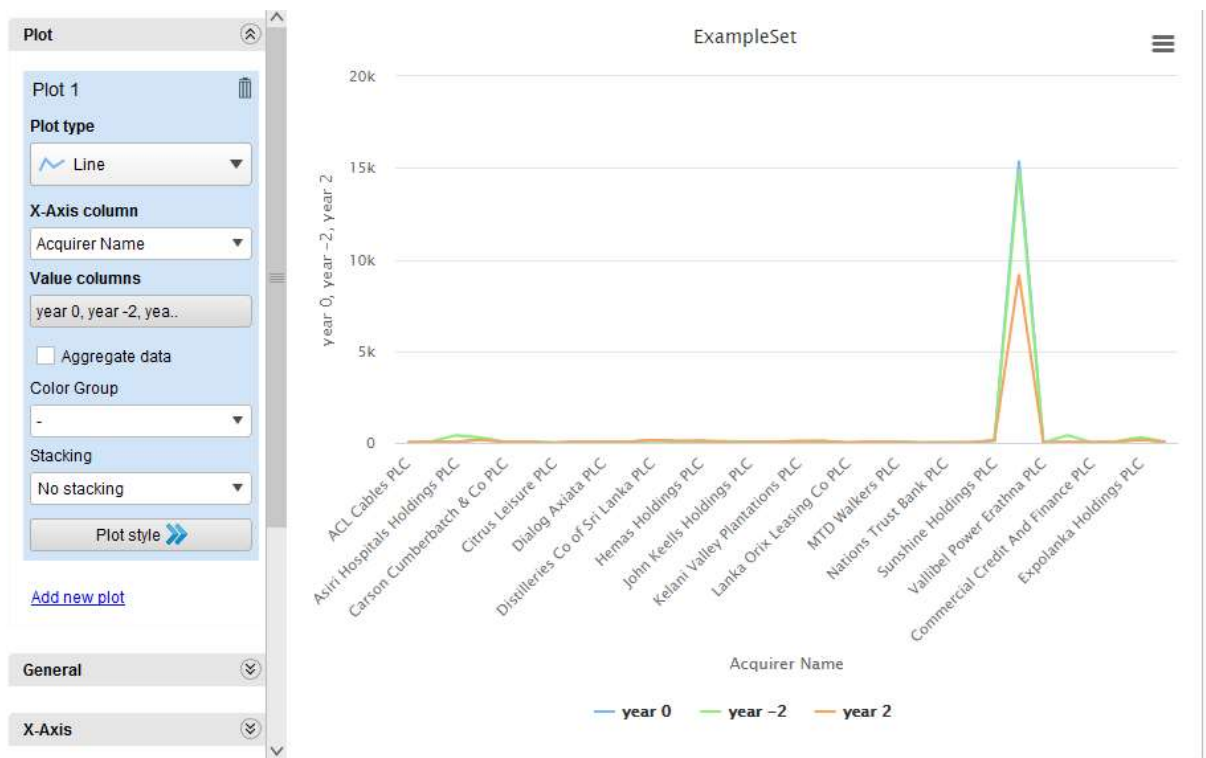


Figure 4.38: Total Asset turnover of all the firms

All the firms compared with 1 year before acquisition and 1 year after acquisition with the year of acquisition

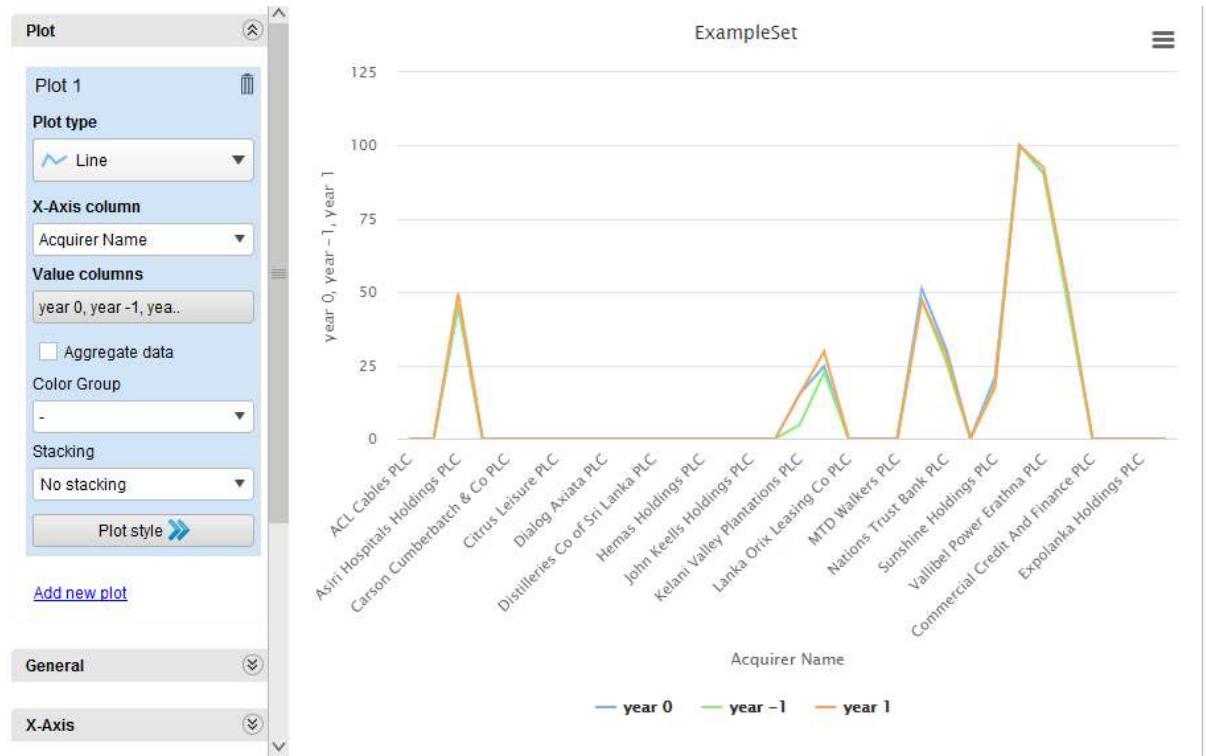


Figure 4.39: Gross profit margin of all the firms

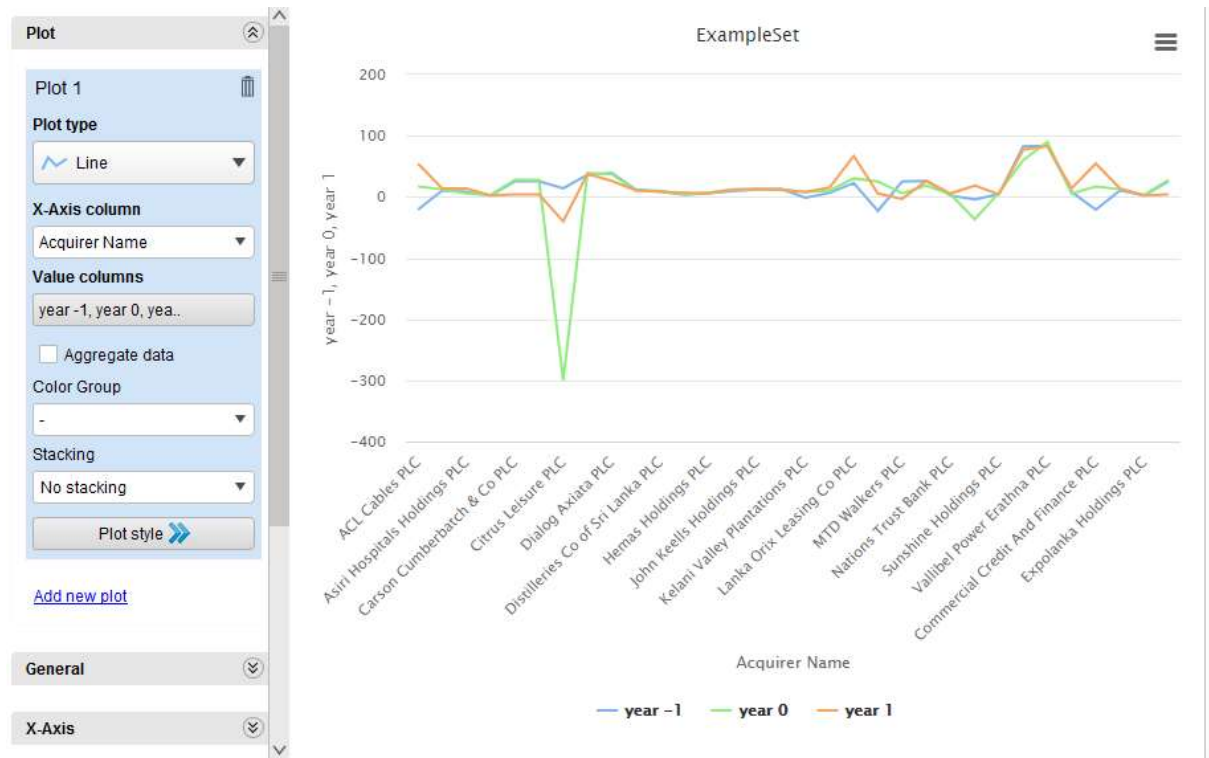


Figure 4.40: Net profit margin of all the firms

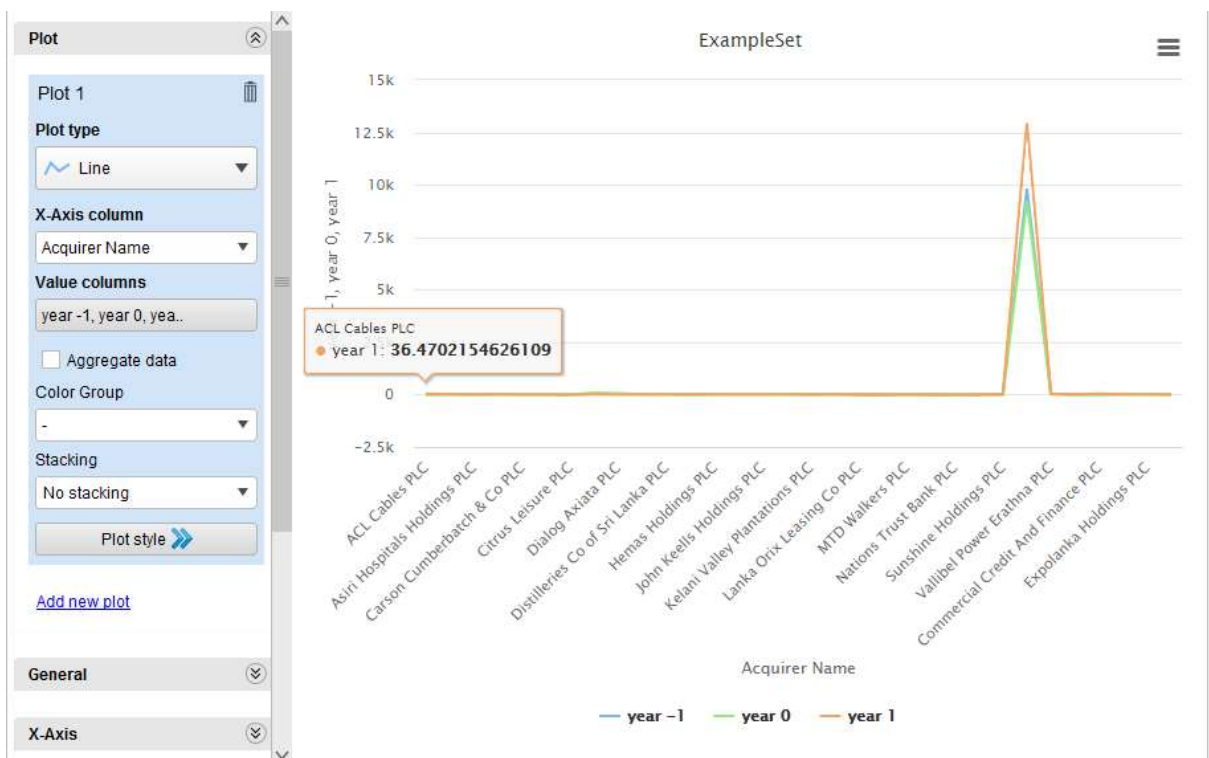


Figure 4.41: Return of Assets of all the firms

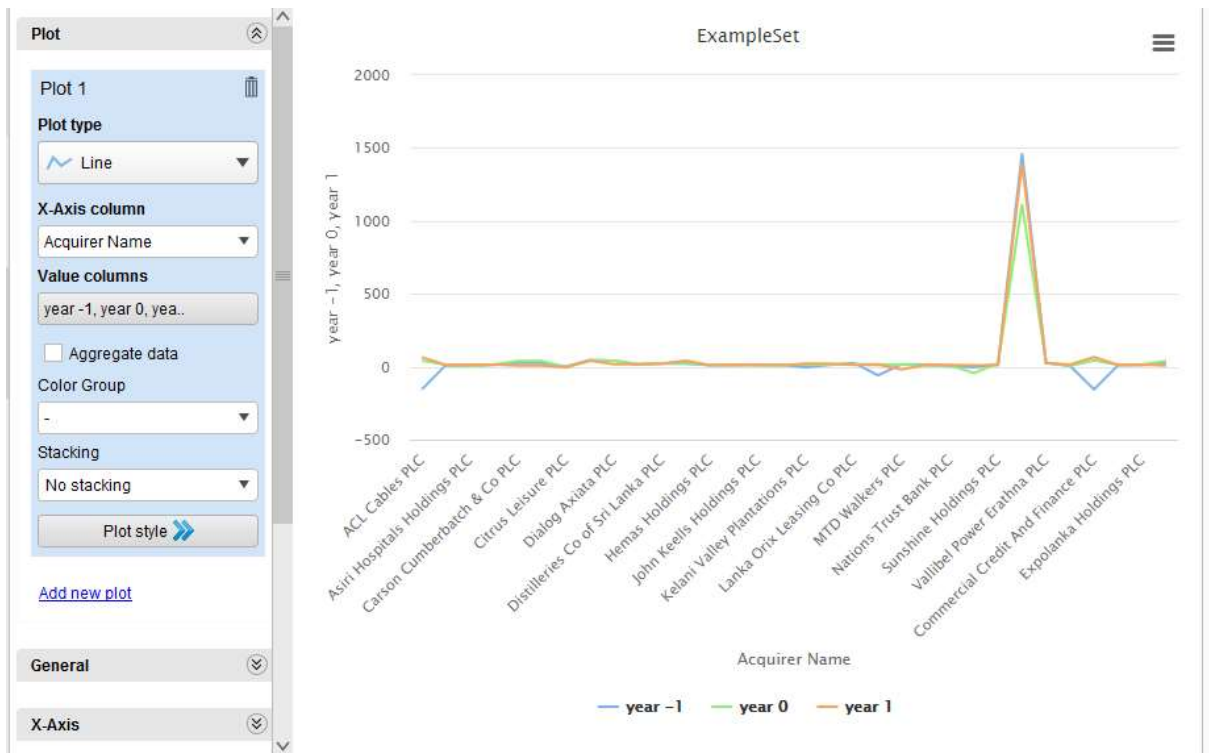


Figure 4.42: Return on equity of all the firms

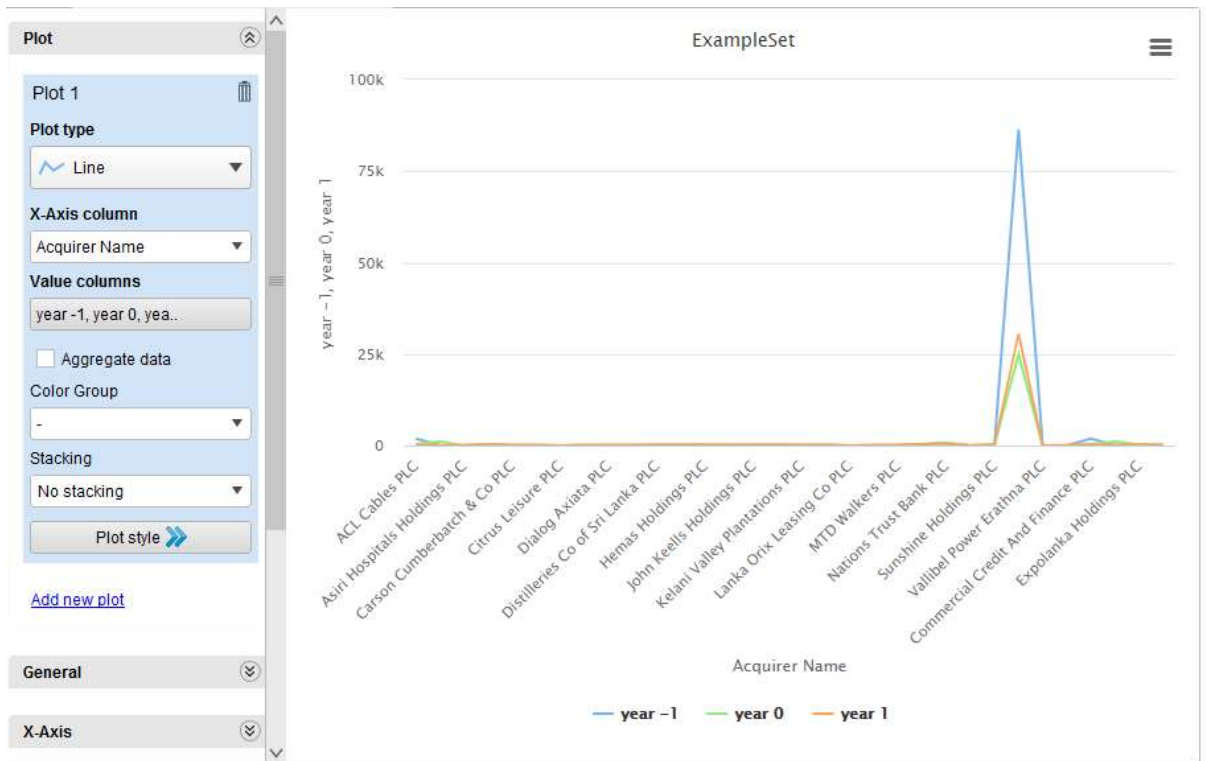


Figure 4.43: Debt Equity Ratio of all the firms

Efficiency Ratio

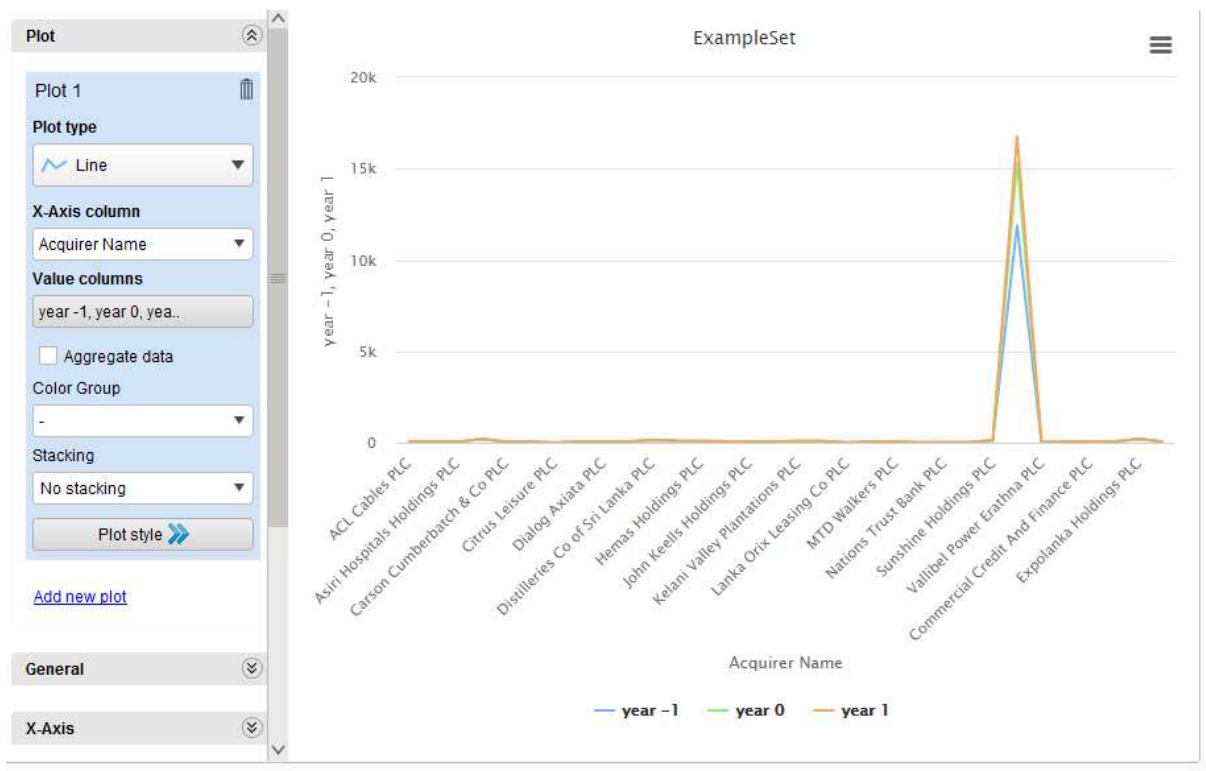


Figure 4.44: Total Asset turnover of all the firms

4.3. Post-acquisition Performances based on Average Ratios of all the firms compared with 3 years before acquisition and 3 years after acquisition with the year of acquisition.

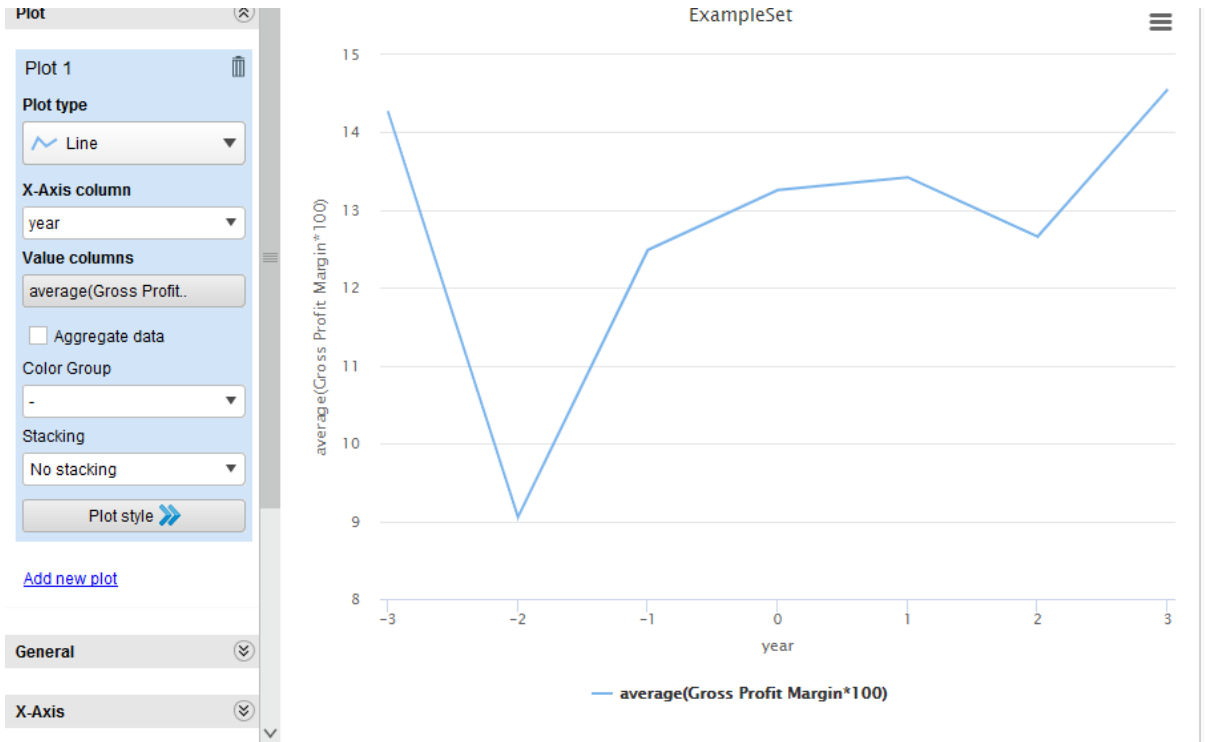


Figure 4.45: Average Gross profit margin of all the firms

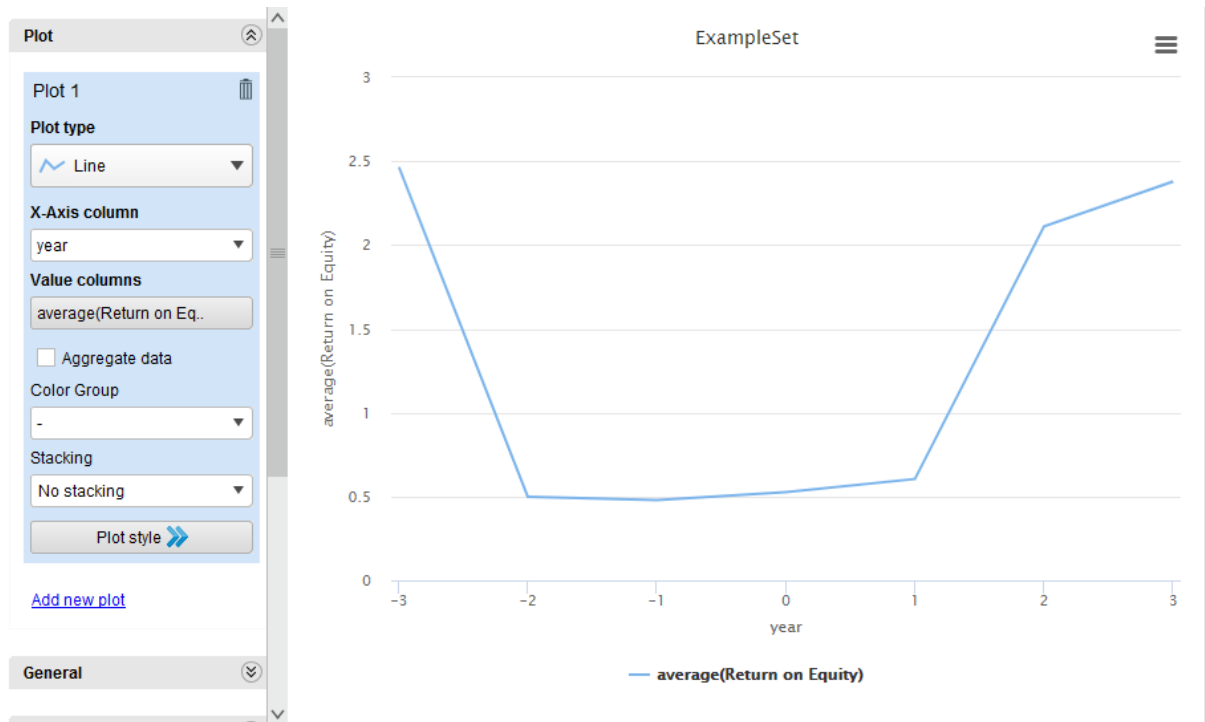


Figure 4.46: Average Return on equity of all the firms

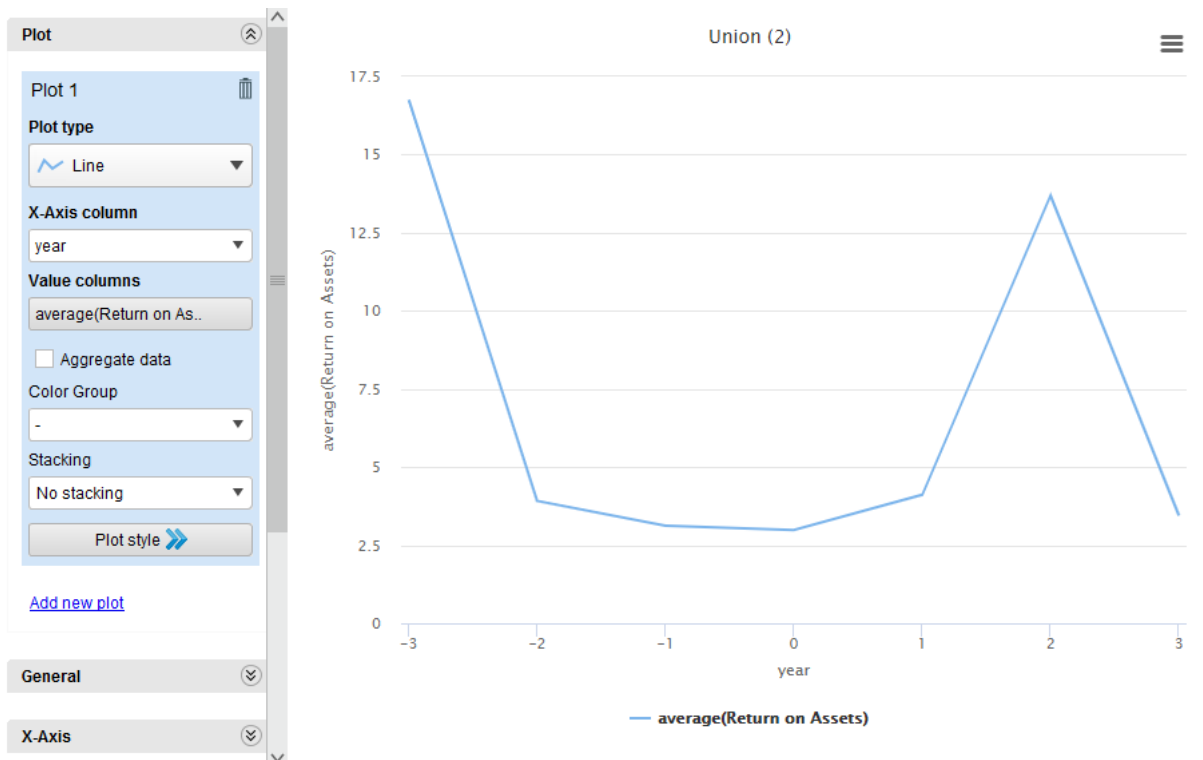


Figure 4.47: Average Return on assets of all the firms

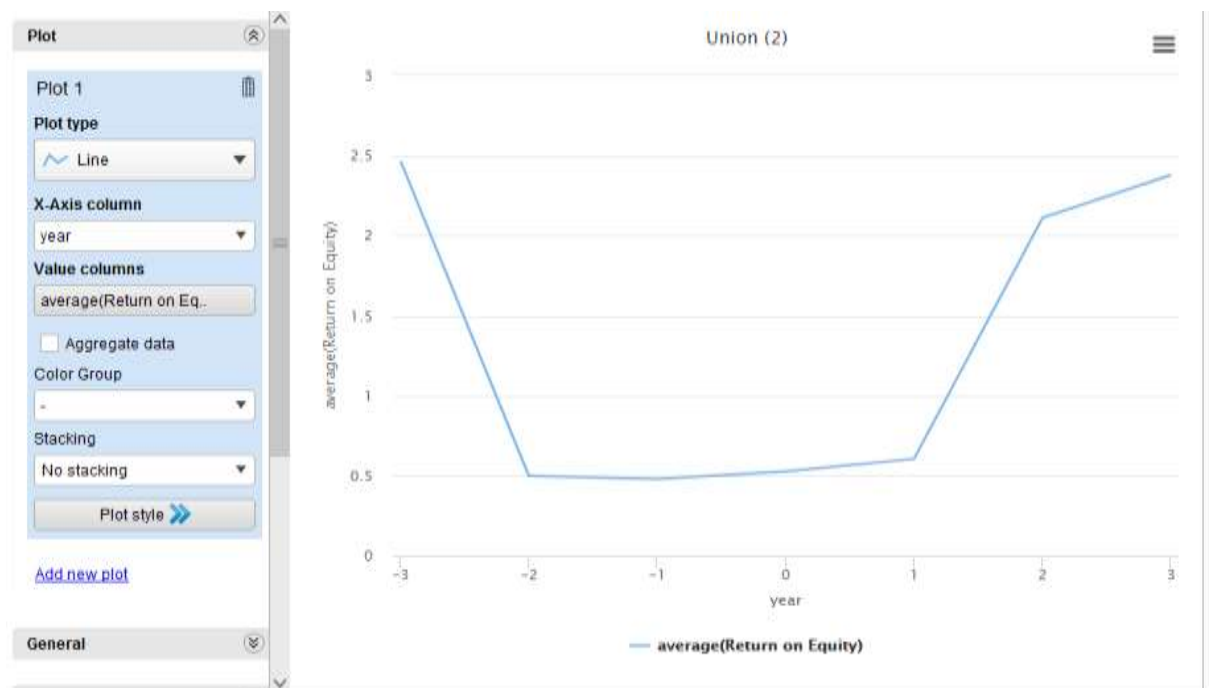


Figure 4.48: Average Return on to equity of all the firms

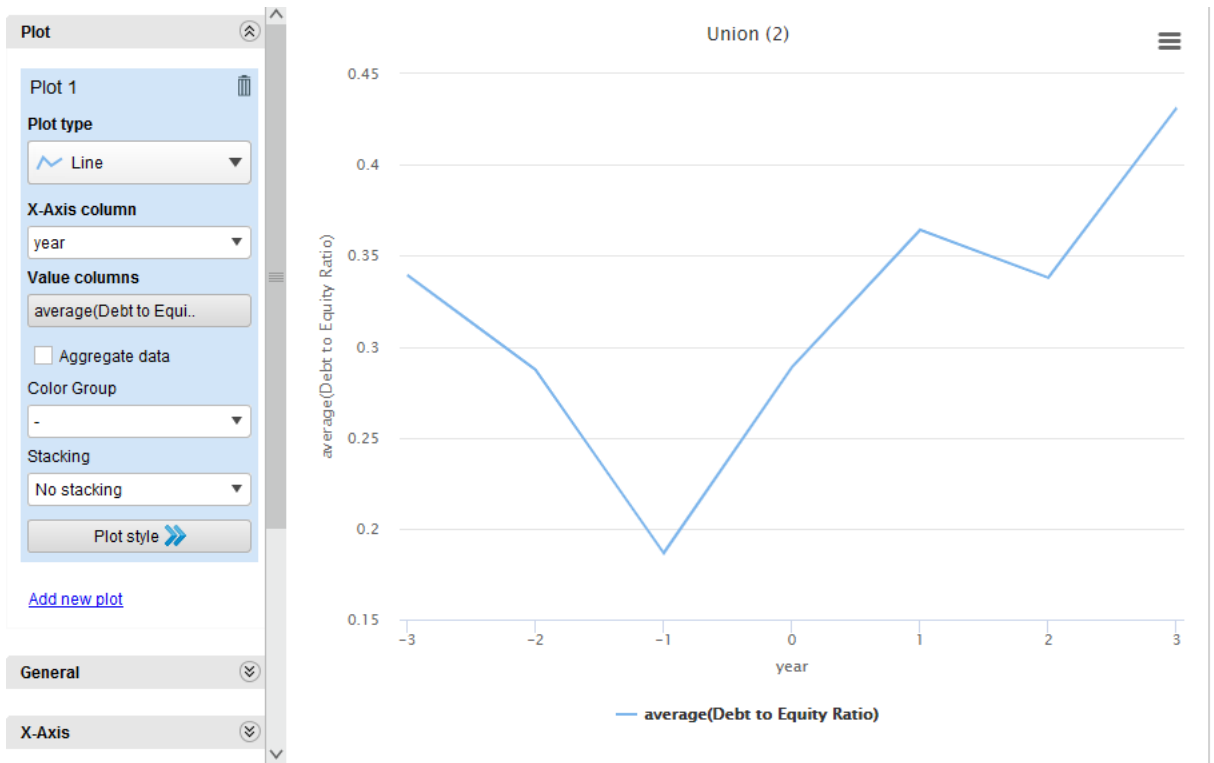


Figure 4.49: Average debt to equity of all the firms

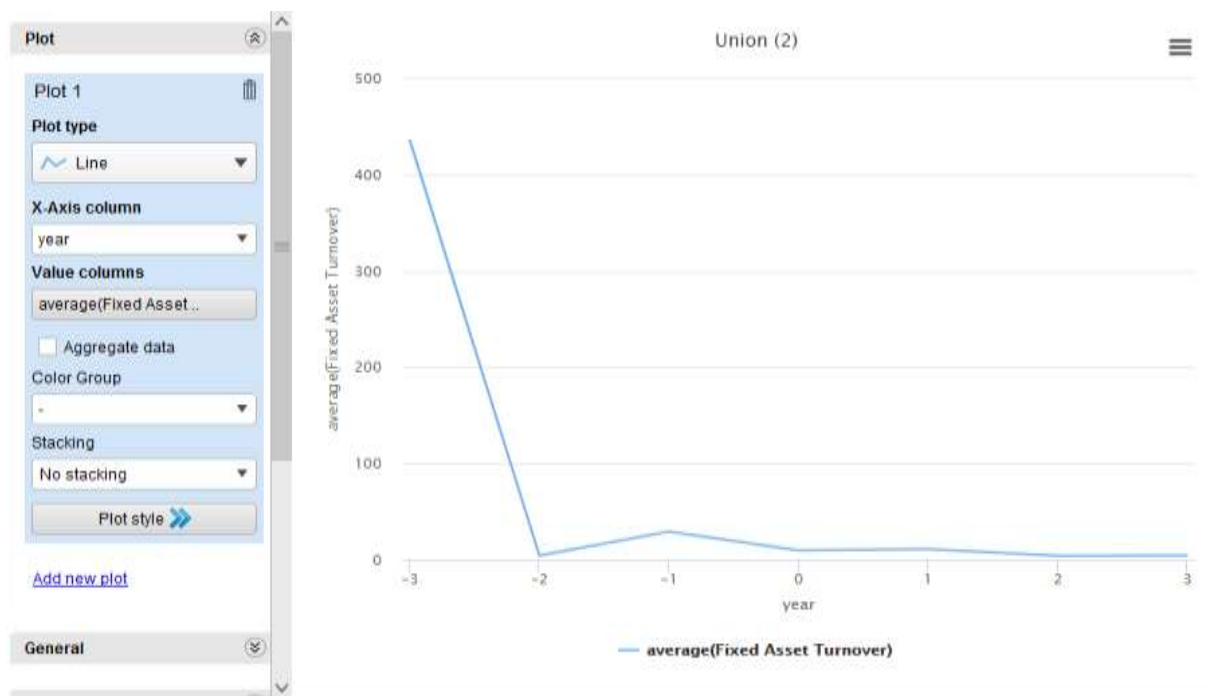


Figure 4.50: Average Fixed asset turnover of all the firms

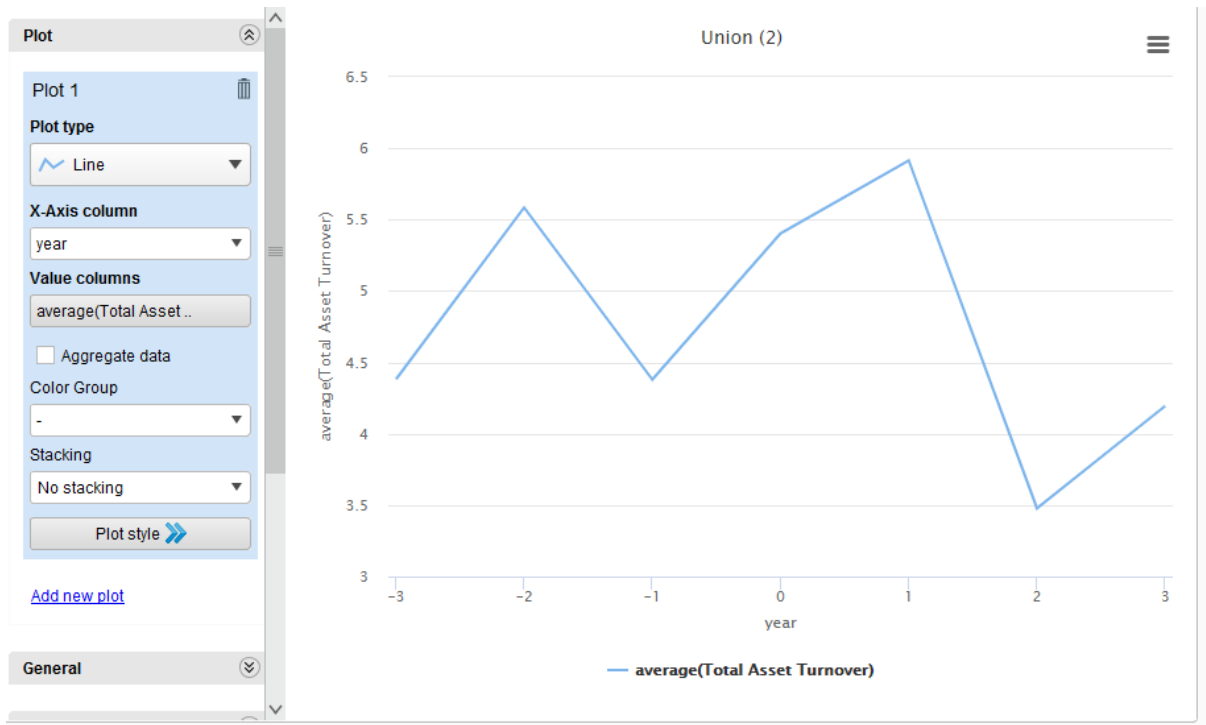


Figure 4.51: Average Total Asset Turnover of all the firms

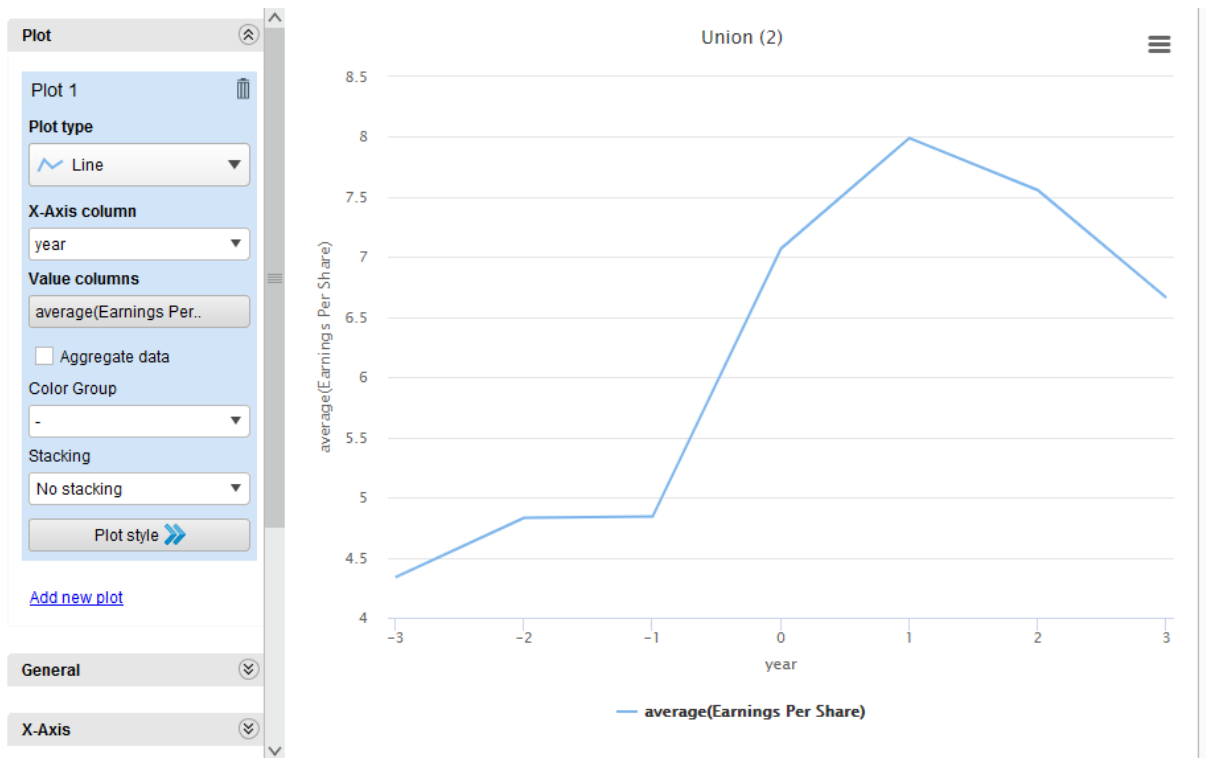


Figure 4.52: Average Earning per share of all the firms

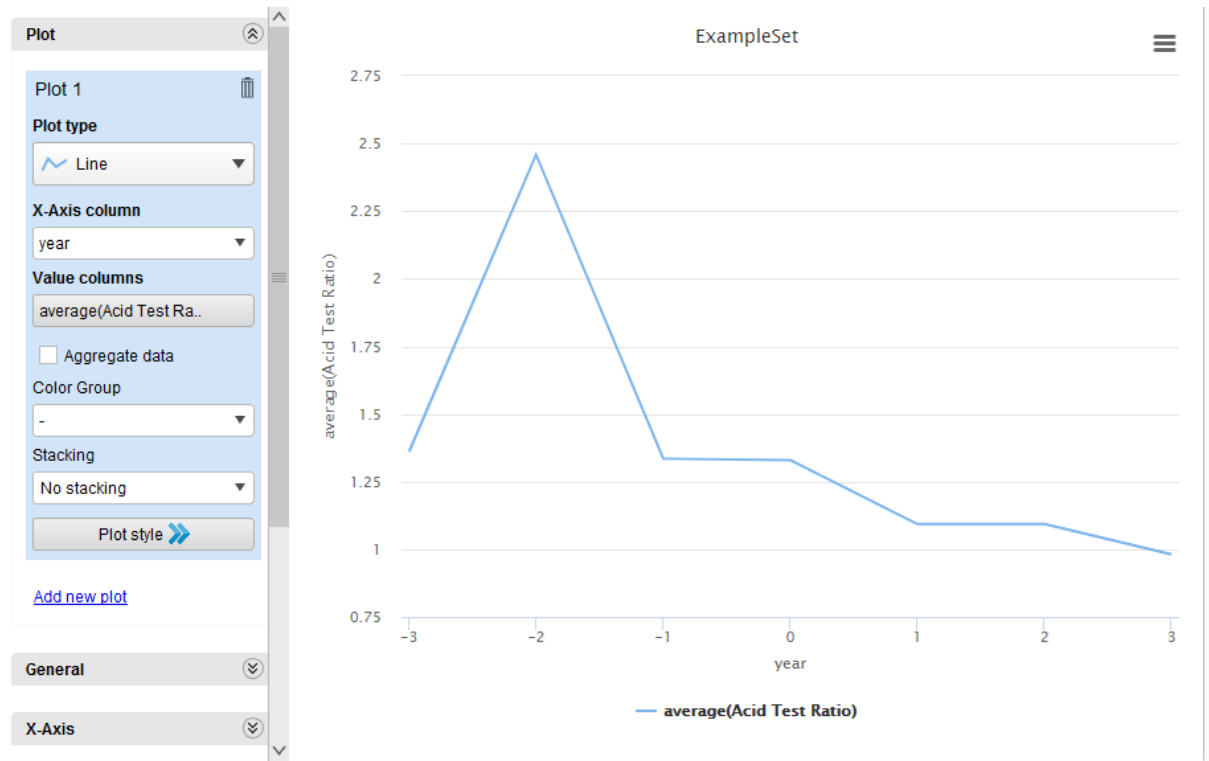


Figure 4.53: Average Acid Test Ratio of all the firms

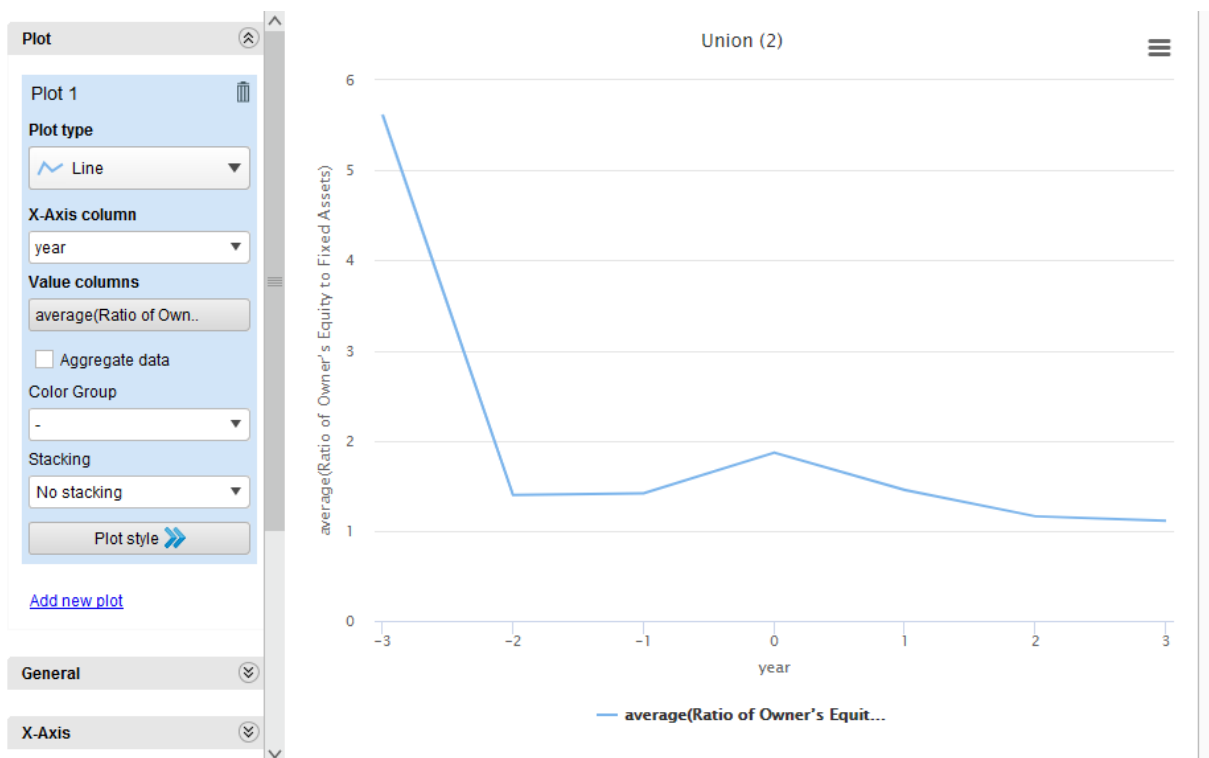


Figure 4.54: Average Owners equity to fixed assets of all the firms

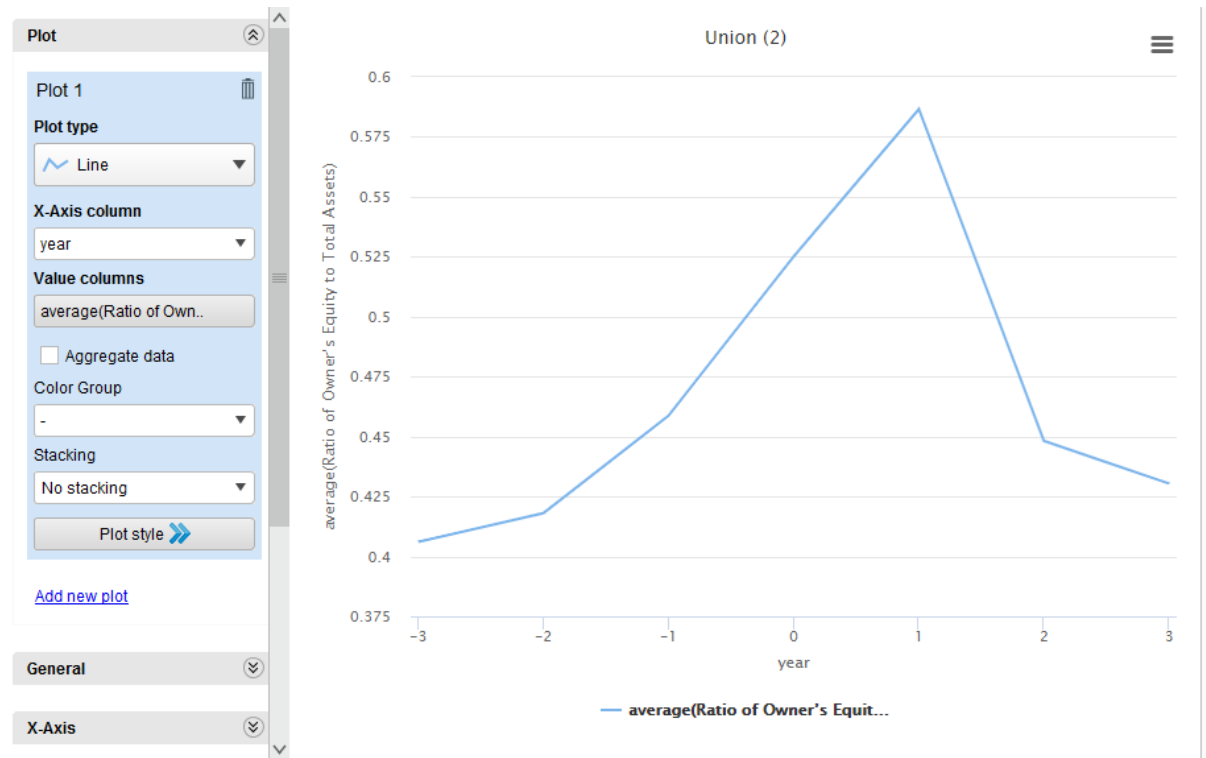


Figure 4.55: Average Owners equity to total assets of all the firms

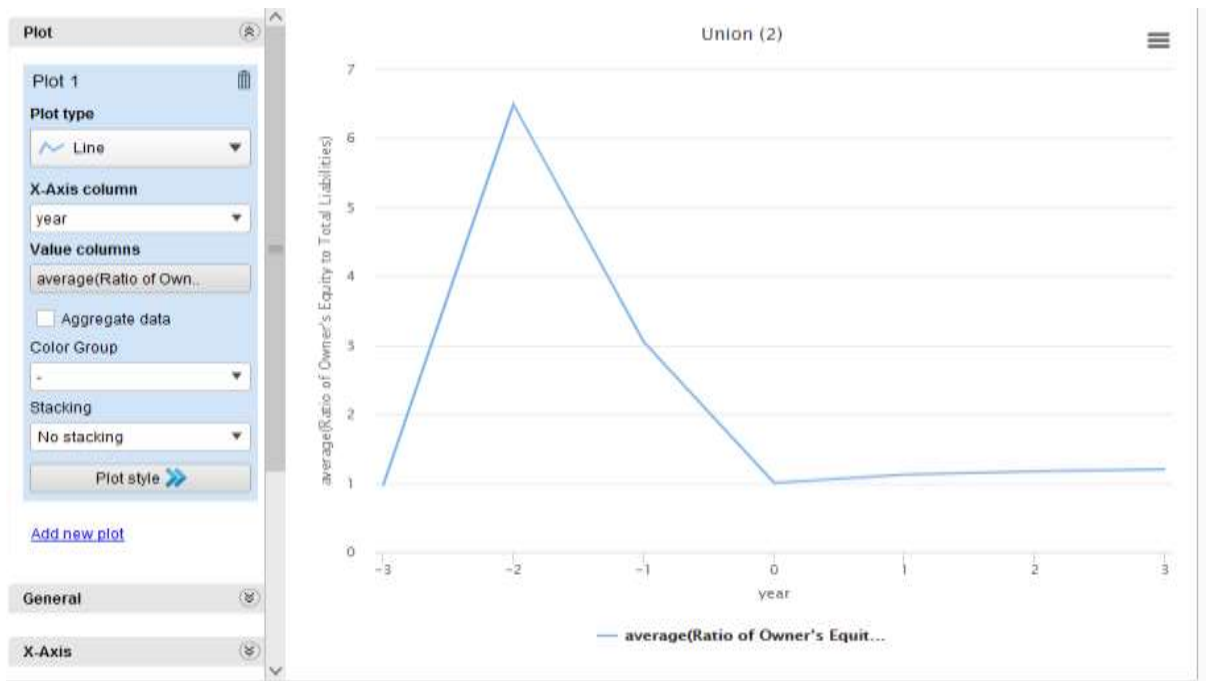


Figure 4.56: Average Owners equity to total liabilities of all the firms

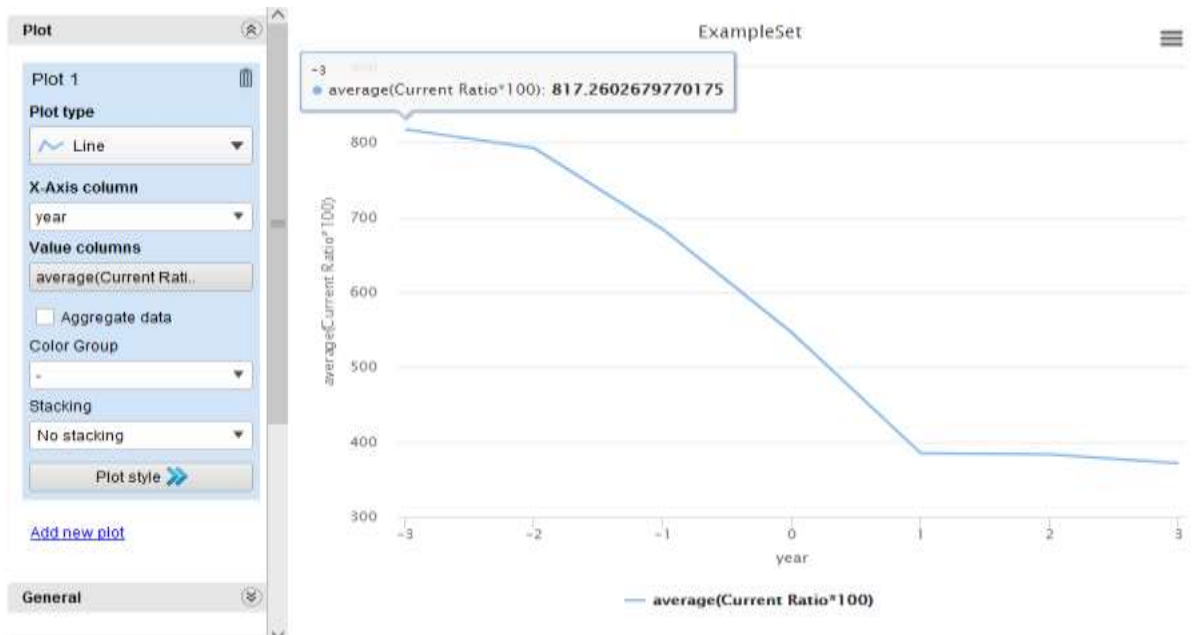


Figure 4.57: Average Current ratio of all the firms

4.4. Regression Analysis

In order to make analysis more accurate and efficient, Linear regression analysis was done to recognize the influence of variables on each financial ratio.

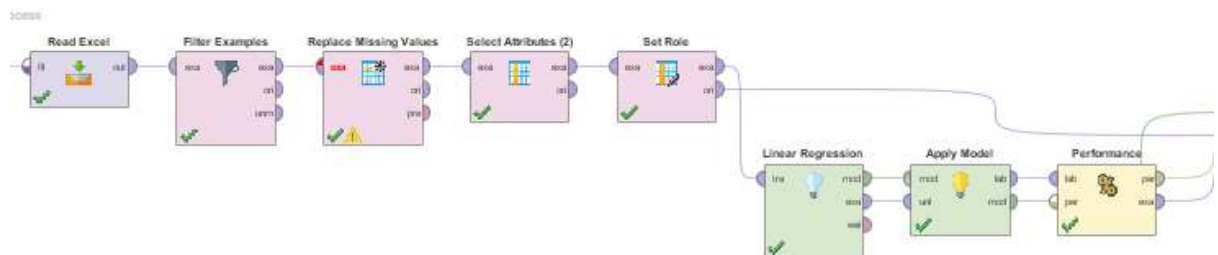
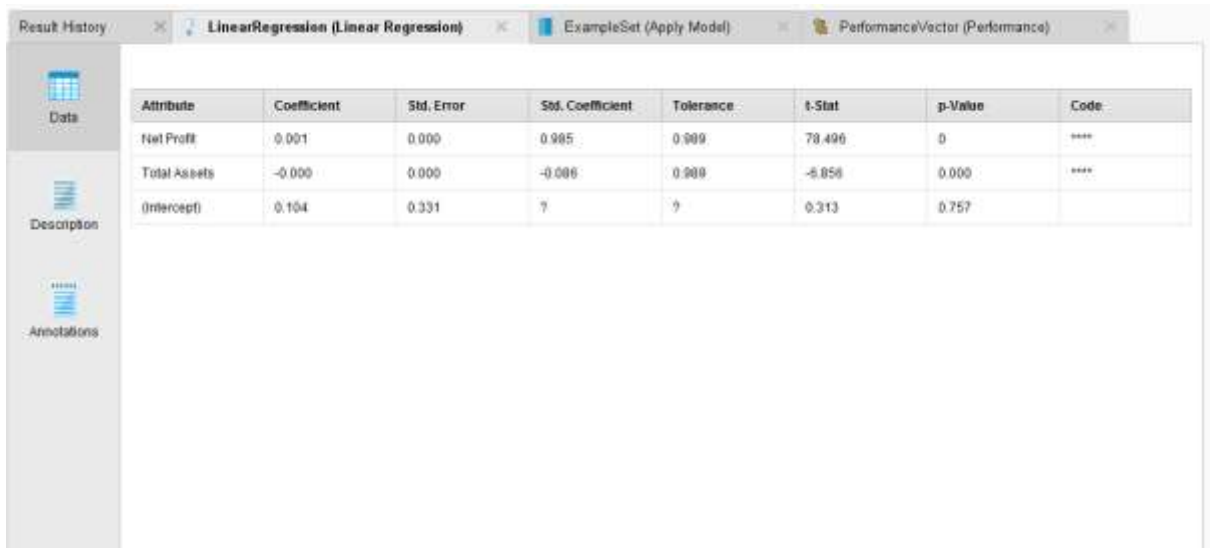
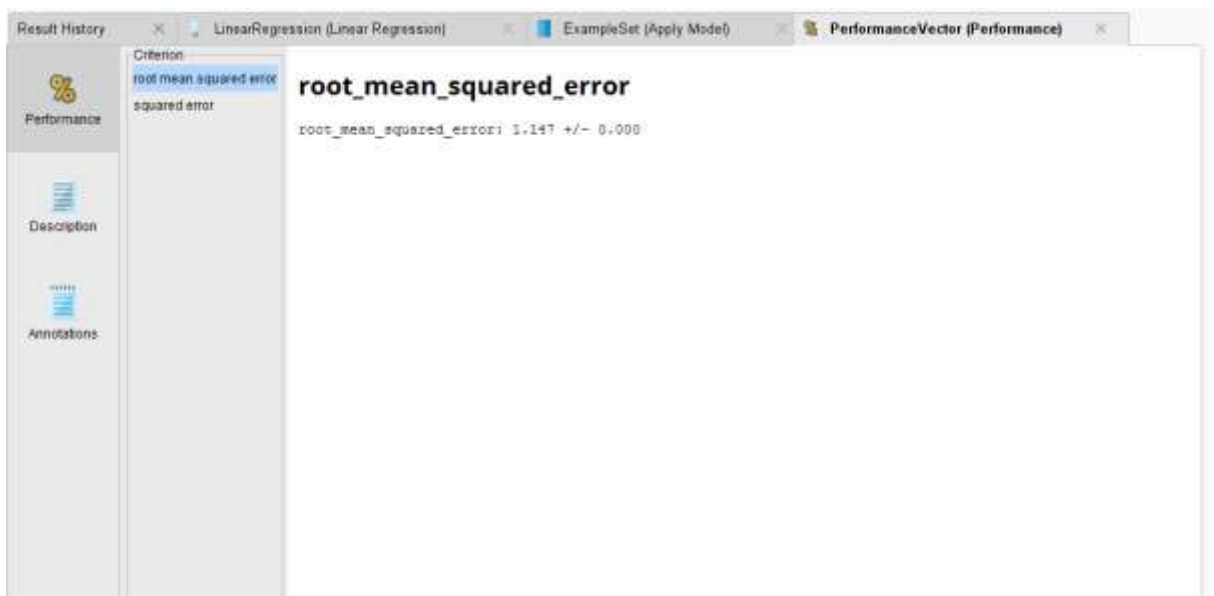


Figure 4.58: predictive learning process



Attribute	Coefficient	Std. Error	Std. Coefficient	Tolerance	t-Stat	p-Value	Code
Net Profit	0.001	0.000	0.995	0.999	79.496	0	***
Total Assets	-0.000	0.000	-0.996	0.999	-8.856	0.000	***
(Intercept)	0.104	0.331	?	?	0.313	0.757	

Figure 4.59: Linear regression Model



Criterion	Value
root mean squared error	1.147 +/- 0.000
squared error	

Figure 4.60: performance of example data set

4.4.1. Discussion

The summary of ratios before and after M&A deal for the overall sample is as follows:

Table 2: Total Ratio Comparison for the Overall Sample

Performance Indicator	Number of Ratios Calculated	Number of Favourable Ratios before M&A Deal	Number of Favourable Ratios after M&A Deal
Profitability	3	3	0
Efficiency	2	1	1
Liquidity	2	0	2
Leverage	1	1	0
Financial Structure	2	1	1
Total	10	6	4

The results show that the Financial ratios related to, efficiency, profitability, leverage ratios and investment decisions drop whilst liquidity increase during the post-acquisition period suggesting that post-acquisition performance on operating firm, decline subsequent to the M&A deal.

The comparison of the pre- and post-M&A profitability ratios showed that, in general, there is a decline in profitability in the post-M&A period. The outcomes of this study is having similar consistent with the results of Yeh and Hoshino [110] and Reddy et al. [92] and shows that there is a limitation for firms to buy other firms because there would be a decline in their profitability as well. It is exposed declined of performance during the post M&A period in the overall sample.

Similarly, the liquidity ratios demonstrated an improvement in performance for the overall sample. However, both the banking and finance sector and the diversified sector indicates improved current ratios implying better liquidity and credit management during post M&A period which is similar to the empirical results [97,

87, 92]. The leverage ratios improved for all the pairs in the long-run indicating that the longer period after M&A results in better financial position.

The overall findings are similar to the study conducted by of Selcuk and Yilmaz [96] and Agorastos et al. [2], acquisitions negatively affect performance of financial aspect after acquiring companies as the conclusion, using the accounting approach.

Chapter 5

Summary and Conclusion

5.1. Introduction to the chapter

This chapter presents findings of the study as a summary, then conclusions and the recommendation which has been identified during the analysis conducted. The section 5.1 of the chapter delivers a brief overview of this study. The section 5.2 and 5.3 provides summary and conclusions based on the analysis. Finally, the last section 5.3 leads to a discussion about the limitations discovered throughout the research and the directions for future research.

5.2. Summary

The main aim of the research is to investigate the impact of Mergers & Acquisition for performance of the acquiring firms in different industries. This is carried out with the intention of investigating the relationship present between the M&A deal and post-acquisition performance of acquiring firms. Performance was analyzed based on the accounting ratio with the factors related to M&A contracts using 32 M&A for the period from 2002 to 2014 to identify the relationship among those dependent and independent variables. Initially, the performance of post-acquisition was examined including and excluding overlapping deals for the overall sample using average comparison and event study method.

The main objective of this study is to find whether there is a difference in operating performance in prior to the M&A deal and after the M&A deal. In order to reach to the stated objective, the study conducted through ten accounting ratios covering five aspects of performance. Thus, total sample has analyzed considering the aspects of performance; profitability, efficiency, liquidity, financial structure and investment ratios using accounting data, in analyzing the performance of financial ratio in the acquiring firms.

Finally, the multiple regression analysis has been support to explain the other factors affecting the M&A performance of acquiring firms in Sri Lanka after acquiring firms.

5.3. Conclusion

In Sri Lanka, M&A has shown a significant upward trend during the last decade. Companies resort to M&A in many cases because they believe that it is the fastest and easiest way to make the organization growth. Many acquisitions do not produce the expected results, even though this opinion is suitable to a certain extent. Therefore, the study intends to investigate the acquiring firm performances based on the accounting ratio in the post-M&A period as a primary objective of the study. Subsequently, the factors affecting the post-M&A performance are also studied.

This study conduct a comparison of the changes of operating performance of 3 years earlier the announcement day of M&A Deal and 3 years after the announcement day using ten ratios as proxy for performance of operating in organization.

The results reveal that for the observed performance of each organization, different results have been found and hence, can conclude that the post M&A performance is affected. Further, the M&A has negatively affected the post-M&A performance as a whole can be identified as a conclusion to the study.

The results further suggest that the unrelated M&A deals outperform the related M&A deals. This may be due to the potential for synergies in costs and revenues. Moreover, the M&A deals financed through share issues significantly underperform the acquisitions financed through cash as the cash financed M&A deals said to have better post-acquisition performance due to improved operating performance [44, 83, 103]

5.4. Implication of the Study

This study provides insights to the market and also to the acquiring firm about the performance of operating acquiring firm in the long-run, and the impact on other factors affecting the performance of acquiring firms listed on Colombo Stock Exchange. Hence, this will be helpful for shareholders, managers, competitors and potential investors in developing trading strategies and effective investment decision making. Furthermore, this will assist policy makers, project consultants, financial advisers, industry researchers and decision makers in various financial restructuring decisions. The result of this study can be help to apply integrated performance measurement tools to obtain the best financial information for effective decision making for the managers and also for other managerial requirements. All most every Stockholders, potential partners, and business investors will be assisted in their understanding of performance M&A. The policy makers will be assisted in defining how well the businesses operate after awarding of M&A certificates. Finally, it would be a great help for academics on their studies on performance evaluation of M&A in developing countries like Sri Lanka.

5.5. Limitations and Directions for Future Research

After an M&A performed, the performance is not only centered on both financial features of the firm and also the non-financial features. Hence, the success of acquisition evaluation requires multi-dimensional measurement of post-acquisition performance, including non-financial and financial performance indicators. Therefore, it is recommended to monitor both non-financial and financial aspects of the M&A deal in order to better examine the post-acquisition performance.

Every M&A deal is diverse from each other and thus the objective of each deal also different from one to another.

Finally, a possible extension of this study could be carried out to consider the impact of other variables which were not included in this study due to the unavailability of data as data is collected in the covid-19 pandemic period and many other reasons.

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