The Ministry of Education of

Azerbaijan Republic

Challenges and benefits of Merger and Acquisitions

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May 2019

Acknowledgements

I would first like to thank my thesis advisor Fakhri Mammadov at Azerbaijan State Economic University. The door to his office was always open whenever I ran into a trouble spot or had a question about my research or writing. He consistently allowed this paper to be my own work, but steered me in the right the direction whenever he thought I needed it.

I would like also to express my gratitude to SABAH Center, especially to the dean of this faculty-Prof. Aida Guliyeva for making such amazing education conditions in our faculty.

I am grateful to all researchers and authors whose data had been essential in writing this dissertation.

Abstract

The purpose of this research is to study the challenges and benefits in detail by taking examples of two companies. The objective is to find out whether despite of many challenges merger and acquisition creates benefits for companies or not.In this way, pre-merger and post-merger conditions had been analyzed in this research. The researcher attempted to comprehend the critical success factors of corporate merger and acquisition and the researcher also tried to comprehend the exact impact of Amoco and Air Touch merger on BP and Vodafone's profitability, business survival opportunity and risk exposure degree. This research had been a phenomenology driven business investigate whereby null hypothesis coming from literature review were tested based on secondary data had been collected.

The research findings was that merger and acquisition process of Vodafone and British Petroleum has been unsuccessful to produce the expected influence on the potential improvement of economic profit, sustainable economic income , growth potential and shareholder's value. So far,it has been observed that there had been positive influence on the empire building motives; however the risk exposure did not entirely fall to the desired level. Achieving such pessimistic results can be because of various reasons:

Table of Contents.

Chapter 1

1. Introduction

Three fundamental account related business choices – capital structure choice, capital budgeting choice and working capital choice is needed to make by a finance manager of the company. From an project examination point of view and from a project implementation viewpoint, merger and acquisition choice must be supposed as a capital planning decision; however the manager of finance department additionally is required to take into account source of financing, so from that viewpoint, merger and acquisition choices are unquestionably a piece of the capital structure decision also; so from each conceivable point of view – a company's M&A decision is a mix of capital structure and capital budgeting decision.

M&A decision is considered one of the major corporate finance decisions and its effect on the firm's profitability and in overall corporate achievement is essential. M&A is implemented from a synergistic perspective and it is commonly expected that the income of the merger entity will increment because of increasing market share and because of better effectiveness and distribution ability. It is assumed that post-merger cost burden of the company will be diminished with better administration, with staying away from the resource duplication and with decreasing the cost of capital. At long last, it is assumed that a company will benefit from tax advantages of M&A. It is commonly anticipated that after M&A, company's profitability will expand; survival probability of business will rise; its sales capacity will expand; its cost of capital will diminish.

This research paper has examined the merger of two of the greatest UK based companies – Vodafone (a giant telecom company) and BP – British Petroleum

(a UK based oil and gas company). The researcher had attempted to clarify what make merger a success and what cause to failure of merger. The researcher tried to analyze what is benefits and challenges in this process. Since the effect of merger and merger can be followed down on a long-run – the analyst had endeavored to concentrate on Vodafone's 1998 merger with Air touch communication and BP's 1998 merger with Amoco.

The main purpose of the research is attempt to clarify whether merger and acquisition create real benefits which worth to overcome obvious challenges in this way.That’s why,this research paper focuses on two merger occurrences which lived significant challenges in order to complete consolidation.This paper will compare pre and post merger cases to make conclusions on this research.

BP – British Petroleum experienced the greatest takeover in its industry in 1998; the synergies were extremely clear – revenue expansion and cost reduction were major motives behind this merger processes . BP focused on the USA based oil and investigation company named Amoco and after the merger it turned into the third biggest oil and gas investigation on the planet. The merger had been led to decrease the duplication usage of resources, to build the working efficieny and to facilitate a progressively engaged oil rig drilling. The most refered reasons behind the merger were :

- Improved capacity of generation – in excess of 3 mln barrel of oil and minerals

- About 14.8 million barrel of enriched oil reserves

-Developed market stance in the chemical industry

-Expanded shares in the Gulf of Mexico, Persian   Sea region and especially in the Alaska.

In the consolidated merger structure, the truly steady Amoco lost its whole name and business presence and it began to work under the acquirer name . In the merged company, BP – British Petroleum delighted in 60% of share and Amoco appreciated 40% of the share. The merger procedure was led according to the locally settled merger law – Delaware law and little intercession was on the idea from the government.

On the other hand, Vodafone – the UK based telecom giant it was also engulfed in highly publicized merger and acquisition process that had engrossed Air Touch company with a view to actually increase the overall outreach of the combined firm. Vodafone was one of the largest network carriers in the European zone and profit volumes were shrinking due to extensive competition in that area as small network operators were providing free gadgets and were extremely satisfied with a lower product usage domain. On the other hand, Air Touch – a sister concern of Bell laboratories were facing extreme price competition in the USA market since the network subscriber market was perfectly competitive. The most cited reasons behind the Vodafone and Air Touch merger are as follows:

Then again, Vodafone –telecom giant in UK it was likewise overwhelmed in exceedingly exposed merger and acquisition transaction that had fascinated Air Touch or so as to really build the general effort of the joined firm. Vodafone was one of the biggest network transporters in the European territory and revenues were contracting because of broad challenge around there as little network companies were offering free gadgets. Then again, Air Touch – a sister worry of Bell research centers were confronting extraordinary price rivalry in the USA since the system supporter showcase was impeccably aggressive. The main reason of the Vodafone and Air Touch merger are as per the following:

- a remarkable Pan-European footfall
- more than 200 mln cost-efficiency for the merger company

It was considered an invert triangular merger and Vodafone needed to set up an auxiliary to functionalize the merger procedure with offering stock and nine dollar as money to get all the traded on an open market offers of Air Touch Company. The merger procedure was led according to the privately settled merger law – Delaware law and little intercession was on the idea from the government authorities.

1.1.Research objective:

To identify the major factors that is considered benefit for company and challenges in merger and acquisition with analyzing mainly Vodafone Group PLC and British Petroleum company.

To analyze the effect of 'Amoco' acquisition on BP’s shareholder’s value

To analyze the effect of 'Amoco' acquisition on BP’s economic benefit

To analyze the effect of 'Amoco' acquisition on BP’s sustainable revenue

To analyze the effect of 'Amoco' acquisition on BP’s sustainable operating revenues

To analyze the effect of 'Amoco' acquisition on BP’s development opportunities

To analyze the effect of 'Amoco' acquisition on BP’s cost of capital

To analyze the effect of 'Air Touch' acquisition on Vodafone Plc shareholder’s value,

To analyze the effect of 'Air Touch Company' acquisition on Vodafone Plc economic benefit

To analyze the of effect of 'Air Touch Company' acquisition on Vodafone Plc sustainable revenue

To analyze the of effect of 'Air Touch Company' acquisition on Vodafone Plc operating revenues

To analyze the effect of 'Air Touch Company' acquisition on Vodafone Plc development opportunities

To analyze the effect of 'Air Touch Company' acquisition on Vodafone Plc cost of capital

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This literature review part of the research will concentrate on the sorts of mergers and acquisitions it can really take on. The analyst will talk about the targets of mergers and acquisitions and separated from the hypothetical edges income enhancement , cost reduction, decreasing of cost of capital and tax cut points. At that point the researcher will display the essential subject of the literature review – the essential achievement motives behind M&A. Lastly, the scientist will talk about the generic procedure of M&A.

The researcher had built up the calculated system applicable to the business study, characterized the operating variable and set up the null hypothesis appropriate to the business research in the strategy part of the investigation. The ethical matters against the researcher were additionally talked about in the business study

The researcher had broke down the post and pre-merger situations of Vodafone Plc and BP through various quantitative numbers and with the hypothesis developed in the methodology . To compare the pre-merger productivity, sales numbers, residual income, residual operating revenue, P/E ratios with post-merger statistics paired t-test was used by the researcher. OLS – ordinary least square method was used to comprehend that the beta co-efficient of the economic variables vary from zero significantly. Because the researcher used time series data, the level of stationary in this regression was needed to be tested,otherwise trend involved data would give distorted results. Along these lines, before doing time series analysis , the researcher needed to examine the data set for autocorrelation and in the event of any indication of autocorrelation the analyst needs various types of substitution of the time series variables.

In the conclusion section of the research study, the author had summarized the significant research results appropriate to the business research, had investigated whether the research goals had been abled to achieve or not; the conclusions of the study findings, the suggestions to British Petrolium and Vodafone's directors, restrictions in conducting research.

Merger and acquisition efforts of various companies had dependably been under severe investigation and there had been sound rationales behind such examination; EPS based bits of gossip might spread well over the media and company management circles and wrong diversification based news might spread throughout the media . Be that as it may, the achievement or unsuccess of a merger and acquisition can be and ought to be assessed from the cooperative synergy point of view – had the merger and acquisition had the capacity to improve the income, had it had the capacity to lessen the cost structure, had it had the capacity to diminish the taxation rate appropriately and had it had the capacity to decrease the cost of capital. Besides, with greater size a sound expectations might be made that merger and acquisition will in the long run had the capacity to expand the feasible benefit

This investigation centers around the merger and acquisition of British Petroleum and Vodafone; the essential motives behind the merger was identified– to decrease the cost weight and to build the operating proficiency and to expand up the market picture. BP and Vodafone are enough profitable companies directly in 2019 and these companies are listed in developed stock exchange markets over the worldwide.

This thesis research have essential significance since the analyst will comprehend the precise idea of effect of the merger and acquisition on shareholder's value, sustainable income, growth opportunity, market volume and cost of capital quantities of BP and Vodafone. It is hard to disassemble the accurate effect of the merger and acquisition on the BP and Vodafone's financials as there are such huge numbers of rates at the pre-merger.

1.2 Research idea

The researcher wants to understand the critical success factors behind corporate merger and acquisition and the researcher also wants to understand the exact impact of Amoco and Air Touch merger on British Petroleum and Vodafone's profitability, business survival chance and risk exposure level.

The researcher plans to comprehend the major factors behind company merger and acquisition and researcher additionally plans to comprehend the definite effect of Amoco and Air Touch acquisition on profitabilities of British Petroleum and Vodafone , survival possibility and risk exposure level.

Chapter 2

2. Theoretical background. Mergers and acquisitions.

Mergers and acquisitions refer to an agreement which combines two existing separate companies in various ways. In most of the cases in literature, phrases of merger and acquisition are often used interchangeably, however there is a subtle distinction between them. Mergers and acquisitions are widely used terms that do not have clear-cut definitions. An acquisition means one company buying part of another company. An acquisition transaction may occur as a result of purchase of assets or a separate business segment from another company. If the acquirer buys the entire target company, it is considered a merger activity. When merger process is ended, only one company will continue operations and the other will cease to proceed. Whether a process is considered a merger or an acquisition, the initiator of transaction is called as the bidder or acquirer, meanwhile the opposite company is called as a target.

2.1. Types of merger

Horizontal merger is merging of two companies in the same or similar industries with similar products operating decide to consolidate. The main goals of horizontal mergers are to achieve economies of scale, diminish competition in the market, enhance market share to achieve market control.

Vertical merger is merging of two companies which are at distinct lines in the supply chain process. In this merging process, forward or backward integration might happen. In forward merger, acquirer seeks to make easier reaching customers and acquires the company which has established distribution channels to sell products to customers. If the acquirer plans to acquire raw material producing company in order to get cost efficiency, it is called backward integration.

Conglomerate Mergers

A merger is called conglomerate when merging companies are totally unrelated, because they are operate in different industries with different business structure. Conglomerate merger might be pure and mixed based on the objective of the merger process. A pure conglomerate merger covers sides operating in totally different, unrelated industries to each other. In a mixed conglomerate merger companies are seeking to increase product lines or target markets.

2.2. Motives behind merger activity

Reasons of mergers can be explained from various perpectives.Both opposition and supporters cite their own analytical opinions about merger activities.Many analytics argue about economic value creation of mergers.

2.2.1. Synergies

In one opinion ,it is said that combined company will be worth than the separate operating company.Cost effectiveness or increasing revenues can be considered the main motives of synergy effect.Through eliminating duplicate functions,positions and creating single substitutes instead of previous ones helps to reduce cost of the company and brings cost efficiency.Moreover, the main objective of companies in merger activity is to achieve revenue synergies through gaining additional market share,expanding to new market segments,increasing sales and etc.

Nevertheless,it is commonly seen that mergers do not always create additional revenue streams.Benefit of such kind of mergers can be obtained through cost efficiency procedures.

2.2.2. Economies of Scale

Numerous mergers are planned to decrease costs and accomplish economies of scale. For instance, at the point when Duke Energy and Progress Energy reported designs to converge in 2011, the savings were evaluated to be as high as $1.6 billion for upcoming five years. The board foreseen that the merger would enable the two organizations to lessen fuel costs and improve dispatch of power. Savings would likewise originate from a decrease in staff of almost 2,000. (A portion of these savings included senior administration too. For instance, there were two CFOs before the merger and only one after merger.) Accomplishing these economies of scale is the main objective of horizontal mergers. However,such economies might be achieved in conglomerate mergers,too .

The supporters of these mergers have indicated the economies that originate from sharing central sevices , for example, office management , bookkeeping, financial monitoring, executive development and top-level administration.

2.2.3. Economies of Vertical Integration

Vertical mergers look to get control over the production proccess by extending back toward the output of the crude material or forward to a end user. One way to accomplish this is to converge with a provider or a client.

Vertical integration encourages coordination and management. . Think about an aircraft that does not possess any planes. In the event that it plans flight activities from Boston to San Francisco, it sells tickets and afterward leases a plane for that departure from a different organization. This procedure may deal with a little scale, yet it would be an authoritative bad dream for a advanced carier with significant amount of flight arangements, which would need to organize many rental contracts day by day.In perspective on these challenges, it isn't astounding that major airline companies prefer to backward integration, by purchasing and flying planes instead of basically disparaging rent-a-plane airline company.

When endeavoring to clarify contrasts in joining, financial analysts regularly stress the issues that may emerge when two business exercises are inseparably connected. For example, production of components may require a large investment in highly specialized equipment. Or on the other hand , a smelter may should be situated alongside the mine to decrease the expenses of transporting the mineral. It might be conceivable in such cases to arrange the activities as discrete firms working under a long-term contract. In any case, such an agreement can never take into account each possible change in the manner that the activities may need to communicate. Consequently, when two pieces of an activity are very reliant on one another, it regularly bodes well to join them inside a same firm, which at that point has power over how the advantages ought to be utilized. These days the tide of vertical mergers is by all accounts streaming out. Organizations are thinking that its progressively effective to outsource the arrangement of numerous services and different kinds of production.

For instance, thinking back to the 1960s, General Motors was considered to have a cost-effective standpoint over its fundamental rivals, Ford and Chrysler, in light of the fact that a main portion of the components utilized in General Motor's autos were created in-house. Till the 1990s, Ford and Chrysler had already the preferred standpoint: they could purchase the parts less expensive from outside providers. One of the main reason behind it that the outside providers would in general utilize nonunion workforce in lower costs. However, it additionally gives the idea that makers have more dealing force versus free providers than versus a generation office that is a piece of the corporate family. In 1998 G Motors chose to turn off Delphi, its car parts division, as a different organization. After the turn off, GM kept on purchasing parts from Delphi in vast volumes, yet it arranged the buys at a manageable distance. Because of ineffectiveness of keeping in-house production in 1998,General Motors decided to spin-off its car parts division-Delphi , as a different firm and then,it arranged agreements about purchases parts from Delphi at a manageable distance.

This case shows that mergers don’t become effective in all situations and challenges,demerits of merging companies exceed its advantages in some cases.

Numerous little firms are acquired by expansive ones that can give the missing parts important to the little firms' prosperity. The little firm may have an extraordinary product yet do not have the designing and sales association required to deliver and market it on a vast scale. The company could create designing and deals ability without any preparation, yet it might be faster and less expensive to converge with a firm that as of now has sufficient ability. The two firms have corresponding assets — each has what different necessities— thus it might bode well for them to consolidate. Likewise, the merger may open up circumstances that neither one of the firms would seek after something else.

In recent years many of the major pharmaceutical firms have faced the loss of patent protection on their more profitable products and have not had an offsetting pipeline of promising new compounds. This has prompted an increasing number of acquisitions of biotech firms.

For example, in 2012 Amgen acquired KAI Pharmaceuticals for $315 million. Amgen calculated that KAI’s experimental treatment for patients undergoing dialysis would broaden its range of therapies for kidney diseases. At the same time, KAI obtained the resources that it needed to bring its products to market.

Numerous little firms are acquired by huge ones that can give the missing components important to the little firms' prosperity. The little firm may have a one of a kind item however It’s obvious that small firms does not have enough resources,expertise,talents required to produce and sell it on a huge scale.Actually, such kind of small firms could develop required recources ,talents from scratch,however it might be faster and less expensive to converge with a firm that as of now has sufficient ability. The two firms have reciprocal resources — each has what another firm needs and it might bode well for them to combine.

As of late huge numbers of the significant pharmaceutical firms have confronted the loss of patent issues on their increasingly beneficial products. This has incited an expanding number of acquisitions of biotech companies.

For instance, in 2012 Amgen obtained KAI Pharmaceuticals for $315 million. Amgen determined that KAI's test treatment for patients experiencing dialysis would widen its scope of treatments for kidney illness. In the meantime, KAI acquired the assets that it required to bring its products for sale.

2.2.4. Surplus Funds

Another argument for mergers is that consider a company which is in a mature industry. Its cash flow generation is highly satisfactory, however it has less additional new beneficial investment opportunities. Actually, such a company ought to allocate the excess money to investors by expanding its dividend payments or repurchasing stock. However, management board are frequently hesitant to embrace an arrangement of contracting their firm along these lines. On the off chance that the firm isn't happy to buy its own offers, it can rather buy another organization's shares. Firms with an excess of money and a lack of good investment opportunities regularly prefer to use this excess amount of cash as a method for redeploying its merger activity.

2.2.5. Eliminating Inefficiencies

Eliminating Inefficiencies

Not only cash can be squandered by poor administration,but also opportunities have not been taken by management can be considered squander. There are always such kind of companies with unexpoited opportunities to reduce costs and achieve higher amount of sales and earnings through applying better management techniques. However ,in some cases forceful cuts are taken to achieve more earnings. Notice that the rationale in such acquisitions has nothing to do with advantages from joining two firms. Acquistion is basically the instrument by which another management group replaces the bygone one.

However a merger isn't single way to make improvements,it is considered better simple and practical way.Managers are normally hesitant to downgrade themselves, and investors of main public companies are not interested in keep much direct supervisory on how the company is run or it's run by whom.

In most of the cases , it is observed that management of merged company is changed. For instance, it has been found that the probability of changes in management board is much more likely in post-merger companies than prior years of takeover. The organizations were examined in this research had poor performance; in the four years before mergers their stock prices had falled behind those of theother firms in a similar industry by 15%. (Martin and McConnell). A significant number of these poor performance companies were been abled to recover or reform by merger.

2.2.6. Diversification

Diversification may involve the risk of distributing company profits through periodicity or some other factors by buying a firm that is outside the scope of its activity (Horne, 1986) (Horne, 1986). The thought behind diversification in company level is that organization might be considered as a potfolio of investment in different companies. On the off chance that a mergers puts resources into organizations from different ventures, the variability in cash flow inwards ought to be decreased to the degree that the merging enterprises are disconnected. Altough this may appear to be a noteworthy reason, the shareholders of the companies might not consider it as the best apporach. In a perfect capital market, acquirers may enhance their protfolios more effectively without incurring to high cost. Furthermore, extensive expansion strategy may result in losing their competitive power and to extend its boundries into business where they will not have enough comperative advantage.

2.2.7. Tax considerations

Tax consideration motives are a significant factor for both the purchaser and seller, as they can be one of the contributing elements in how the exchange is organized. An acquirer needs to deliberately assess circumstances in which target company has characteristics that give future advantage, for example operating loss or tax credit carryforwards . However, according to empirical studies ,mergers benefit substantially for companies,it can not be said that the most significant factor motivating mergers is tax advantages.Nevertheless ,in pre-merger stage ,analysists estimate the tax advantages of merger process beforehand to evaluate potential target company precisely.

2.2.8. Unlocking hidden value.

At the time when a company struggles for quite a while,an acquirer may consider that lower price can be paid for this transaction and this company can turn the hidden value by improving management,adding needed resources and etc.An analysists in acquirer side assumes that the intrinsic value of target company is fairly high rather than it is actually perceived. Now and again, a buy might be joined in light of the fact that the buyer trusts that they are purchasing at a lower cost than their replacement costs. For instance, an assembling organization may buy not exactly the expense to build up the present creation process at less expense than building up a procedure all alone in its own production procedure.

2.3 Financial Assesements of M&A

One of the most challenging and time consuming part of merger proccess is considered finding the fair value of the business.Regardless of whether it is merger or acquisiton, these sort of desicions are taken for long-term time horizons and involves high-risk potential.If this proccess is not been abled to coduct in a right manner,the burden of mistakes,errors continue to influence the business futhermore. Because, financial valuation is considered one of the most challenging procedure in merger transactions we will focus on next sections on the determination methods of value of the target company.

In a stock offer, the shareholders of the target company share the hazard of ultimate value arising from the merger at the risk related with the final value arising from the merger because they receive new shares in the firm after the merger. In an offer made in real money, all risk borne with the value of the post-merger firm is covered by the acquirer. Thus, the purchaser is more inclined to cash offer when they are extremely confident of the synergy and value that will arise from the merger.

The principal thing to consider is whether the merger brings real economic benefits. Economic benefits is obtained if merging companies have greater value together than they have separately.

Gain= $PV_{AB} - (PV_A + PV_B) = \Delta PV_{AB}$

Significant indicators for comparison.

It was irrationally expected that the post-merger EPS would be greater; it was unreasonable when even the most inappropriately overseen M&A would have brought about greater EPS and outright profit figures since there will perpetually the expanded business size impact related with the M&A (Rockwell, 2008). Thus, relative estimations of poductivity must be applied in evaluting value. The rundown is boundless and that is the reason the author will give a short rundown of elements, which had experimentally applied to assess the value in M&A

ROCE – Return on capital employed needs should rise after finishing the M&A (Phillips and Zhdanov, 2008). By ROCE the analysist is really alluding to the comprehensive income element of the financial statements – comprehensive income covers all the messy surplus costs and the covered up grimy surplus costs, which might be combined in the M&A process (Papadakis, 2005).

Residual income model – Residual income alludes to the economic benefit; likewise,net income is contrasted with break-even revenue practically takes into account risk level of the business. Thus, gave that after the merger the company is really gaining positive according to residual earnings figures; it ought to have been regarded as a positive outcome emerging out of the M&A tries made (Poindexter, 2014).. Then again, any kind of droop in the residual income ought to be regarded as a negative outcome, which ought to be related with the M&A (Jennings, 2008). Merely the positive residual income model gets business value for the consolidated firms. Residual income model refers to two essential caveats : the residual income ought not be guage for a boundless time span; rather one needs to conjecture it for restricted time period and let the terminal growth rate be dealing with the incentive to be inferred on the limitless time (Rovenpor, 2013). Furthermore, the residual income predictions to be applied in the valuation model should be tended to by a changing arrangement of cost of equity.

Residual operating income model – As residual income alludes to the economic benefit; the net income element of this model covers the effect of various non-repeating and non-operational things (Epstein, 2005). Along these lines, fair value isn't shown in the residual income figure; rather it is appropriately shown in the residual income figure which is determined by deducting the operating income from the expected rate of return on operation .

In this way, gave post- merger the company is really procuring positive according to the residual operating earnings insights; it ought to have been regareded as a positive outcome emerging out of the M&A endeavor made .

Price-earnings multiple – It is subject to the dividend payout ratio of the company, cost of capital used by firm and the growth rate. In this way, it is assumed that the post-merger firm will lessen some portion of its cost of capital and it will almost certainly achieve more growth. In this way, a greater number of P/E ratio ought to be regarded as both risk probability of the business decreased or the growth opportunity of the company has expanded. Applying P/E multiple can likewise be defied with number of difficulties for instance; forward looking P/E may not be discovered once in a while forcing a major difficulty for the research experts. That is the reason regularly, analysists completes the P/E ratios put together valuation based with respect to the trailing P/E figures. The revenue data might be highly speculated in this manner making a progression of perplexities in the investigators mind. The terminal growth rate – otherwise called g – it is a theoretical variable as it is for the most part reliant on the growth rate of the country’s economy. It is hard to make a forecast of future cost of capital and terminal growth rate.

Variable	Econometric definition
ROCE	$\frac{\text{Comprehensive income}}{\text{Average common equity}}$
Price-earnings ratio	$\frac{\text{Future dividend}}{(\text{Cost of capital} - \text{growth rate})}$
Residual earning	Net income – (Cost of equity * Average common stockholder’s equity)

Residual operating earning	Operating income – (cost of operation * average common stockholder's equity)

Hypothesises.

In view of the accompanying talks, the analyst can develop the accompanying null hypothesis – it should be done with the help of quantitative data collection.

HP– 11: ROCE of post-merger will be significantly different from pre-merger ROCE

HP– 12: Residiual income of post-merger will be significantly different from pre-merger residual earnings

HP – 13: Residual operating income of post-merger will significantly differ from pre-merger figures

HP – 14: PVGO (present value of growth opportunity) will significantly differ than the case with the pre-merger PVGO

HP – 15: Post-merger cost of capital will significantly differ from pre-merger cost of capital.

CHAPTER 3

3. Methodology

Like various research studies; this research examine began with the outline of research idea and then it was continued by significant questions and targetsçobjectives of research.

The analyst had explored the particular scholarly papers and reading material applicable to the exploration and found a bit shortages in the current literature whereupon the business research can be led. When the structure for the exploration is built up; the analyst had led the example review and built hypothesizes. In light of the consequences of the hypothesis, the analysist presented his own results of research.

In research methodology, the analyst sets null hypothesis and this hypothesis has been tested by gathered data and data set . Theory formulation is not targeted by conducting this research and take into account that theory is used only in background. Then again, designs are summed up if there should arise an occurrence of inductive research and dependent on these examples hypotheses are developed.

With setting null hypothesis, the analyst has continued with the thesis investigate, the analysist had checked the hypothesis dependent on the gathered information and data .Clearly the analysist had applied scientific models and frameworks; however these analysis conducted in backups of this research.

Variable name	Nature of dependency	Expected sign	Calculation	Variable nature
Pre-merger ROCE	Indep. variable	Positive	$\frac{\text{Comprehensive income}}{\text{Average common stockholder's equity}}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Pre-merger P/E ratio	Indep. variable	Positive	$\frac{\text{Future dividend}}{(\text{Cost of capital} - \text{growth rate})}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Pre-merger residual earning	Indep. variable	Positive	$\text{NI} - \left(\begin{matrix}\text{Cost of equity} * \\ \text{Average common} \\ \text{stockholder's equity}\end{matrix}\right)$	Cross-sectional data was used to avoid autocerrelation,

				multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Pre-merger residual operating earning	Indep. variable	Positive	$\mathrm{OI} - \begin{pmatrix} \text{Cost of operation} * \\ \text{Average common} \\ \text{stockholder's equity} \end{pmatrix}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Pre-merger cost of capital	Indep. variable	Negative	Weighted average cost of capital; preferred stock, equity,retained earnings and bond are the capital components	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.

Pre-merger sales volume	Indep. variable		Sales were net of returns	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Post-merger ROCE	Depen. variable		$\frac{\text{Comprehensive income}}{\text{Average common stockholder's equity}}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Post - merger Price-earnings ratio	Dep. variable		$\frac{\text{Future dividend}}{(\text{Cost of capital} - \text{growth rate})}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to

				ignore the size effect.
Post – merger Residual earning	Dep. variable		$\mathrm{NI} - \begin{pmatrix} \text{Cost of equity } * \\ \text{Average common} \\ \text{stockholder's equity} \end{pmatrix}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Post-merger Residual operating earning	Dep. variable		$\mathrm{OI} - \begin{pmatrix} \text{Cost of operation } * \\ \text{Average common} \\ \text{stockholder's equity} \end{pmatrix}$	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.
Post-merger cost of capital	Dep. variable		Weighted average cost of capital; preferred stock, equity,retained earnings and bond are the capital components	Cross-sectional data was used to avoid autocerrelation, multicollinearity.

				The analyst reduced the scale of the data to ignore the size effect.
Post-merger sales volume	Dep. variable		Sales were net of returns	Cross-sectional data was used to avoid autocerrelation, multicollinearity. The analyst reduced the scale of the data to ignore the size effect.

3.1. Conceptual framework and data analysis

So as to comprehend the effect of cross-border mergers on market observation, riskiness , economic benefit, sustainable income, volume of sales and shareholder’s value, linear regression had been utilized by the analyst to test the significance of the hypothesis. Regression is the major econometric tool to analyze the relationship between independent and dependent variables.
While running on the regression, the analyst had utilized OLS – technique to comprehend the relationship among the variables . Five fundamental indications of regression suc as T-test, F-test, R-square, expected sign and beta co-efficient were assessed independently. Significance level is taken on a 5%.

Hypothesis	Researcher’s Focus	Hypothesis notation
Significant increase will be observed in the post merger ROCE than the pre-merger ROCE	Influence on profitability	β ≠ o
Significant increase will be observed in the post merger residual earning than the pre-merger residual earning	Influence on economic profit	β ≠ o
Significant increase will be observed in the post merger residual operating earning than the pre-merger residual operating earning	Influence on sustainable profit	β ≠ o
Significant increase will be observed in the post merger PVGO than the pre-merger PVGO	Influence on growth potentiality	β ≠ o
Significant increase will be observed in the post merger overall cost of equity than the pre-merger overall cost of equity	Influence on risk exposure	β ≠ o
Significant increase will be observed in the post merger sales volume than the pre-merger sales volume	Influence on overall business	β ≠ o

So as to more clearly find difference between the post-merger and pre-merger profitability, financial benefit, feasible profit, growth possibility, cost of equity and overall business, the analyst had utilized enlightening insights. In this way, mean and standard deviation of these key factors were utilized to comprehend the general dimension of central tendency and the level of dispersion among the examination variables. So as to all the more likely set the heterogeneity among the examination factors, the author had determined separate mean and standard deviation for various industry classifications.

In light of the previously mentioned dialog, the specialist will get a kick out of the chance to introduce the reasonable system of the investigation through the accompanying outline.

Research objective	Relevant hypothesis notation	Expected regression sign
To test that shareholder's profitability rises with M&A	β (PRO) ≠ o	Positive
To test that economic benefit rises with M&A	β (EPRO) ≠ o	Positive
To test that sustainable profit rises with M&A	β (SPRO) ≠ o	Positive
To test that growth opportunity rises with M&A	β (PVGO) ≠ o	Positive
To test that cost of capital declines with M&A	β (WACC) ≠ o	Negative
To test that sales volume rises with M&A	β (SALE) ≠ o	Positive

The analyst had utilized some extrapolated information in the data research area. Here, the analysist will make clear how these information is extrapolated.

- Residual income – For getting the break-even revenue the author had increased the cost of eqity with the.

-Residual OI - For getting the break-even income the author had duplicated the cost of operation with the CSE – common stockholder equity.

- P/E ratio – Trailing P/E ratio was based on historical secondary data.

-Beta – The analyst had not determined historical beta as for every year's case. Or maybe utilizing the most recent 5 years' information of Vodafone and British Petroleum, the author had determined beta.

3.2.Result analysis and Discussion

M&As had been an frequently occurence in finance over the years.The author had watched various merger occurences (Appendix – 1) and had depicted the accompanying conventional highlights with respect to the overall worldwide cross border mergers.

- Cross-border mergers have turned out to be more well-known than the case with in-house M&A. About 79% of the top M&A occurences had been cross-border merger. It indicates the express need of the MNCs to go for worldwide expansion. What's more, it additionally indicates that averagely there is restricted extension left for market penetration.About 87 percent of the amalgamation was merger ,so the acquirer has held their name and character and just on 13% of the case they have lost their way of identity as the method of amalgamation was consolidation
- Horizontal mergers have the more famous classes than vertical and conglomerate mergers. About 58% of the M&A out of the sample had

been horizontal merger. Along these lines, the managers of the acquiring company prefer to obtain the ineffectively operated peers; rather than developing supply chain management system.

- About 41 percent of the merger cases is classified in the vertical merger class. In this way, there had been a deliberate propensity to investigate inside the known industrial limit.
- On just 12 percent of the cases, it is observed that legal intercession created by the anti-trust authority to avoid monopolization attempts
- Prefered financing source for the merger deal had been stock exchange,about 76 percent of transactions. Rationally, remaining 24 percent of the case, cash had been used for financing.
- On 45% of the case the method of exchanges was hostile takeovers and mergers done on friendly manner consisted 55% the agreed mergers.It shows that the anti-takeover policies are often losing their appeal.
- 93% of the merger's target price had been greater than book value of this companies.
- About 56% of the mergers had been planned to make on credit extension terms or or bridge financing terms. Along these lines, it had been reported that the inside created money related slack was not constantly satisfactory to draw of the arrangement.
- It had been apparent that on the recessionary times,average amount of M&A had been on a lesser rate. It shows that M&A decisions is driven by the general dynamics of the economy.
- For 32 percent % of the companies the post-merger stock profit had been negative for 3 yearsIt shows that M&A had dependably not hailed by the market on a predictable premise.

- For 45% of the merged firms ,cost of capital, actually, rose for 5 year down the time line.It shows that risk exposure had not been abled to reduce by the merger and acquisition process.
- For 45% of the consolidated firm, the expense of capital of the firm has really expanded multi year down the rate. Thus, merger and securing had not generally had the capacity to decrease the hazard presentation.
- P/E multiple for 56% percent of merged companies decreased for 5 year time horizon.It shows that growth potential of the company was not been abled to increase by M&A activity
- It was concluded that economic profit of the 78 percent of merged companies had actually decreased for 5 year down the time horizon.It shows that merger activity doesn’t create additional true profitability.
- For 78% of the consolidated firm, the normal business size of the firm has really expanded multi year down the rate. Along these lines, merger and securing had been directed to improve the business size – an indicator called as building empire motive.

The researcher had analyzed the post and pre-merger condition of Vodafone and British Petroleum in detail through different quantitative numbers and through the hypothesis built up in the methodology section. Paired t-test was used to assess whether the pre-merger profitability, sales figures, residual income, residual operating income, price-earnings ratios vary significantly from the post-merger profitability, sales figures, residual income, residual operating income, price-earnings ratios. OLS – ordinary least square based time series regression was performed to understand whether the beta co-efficient of the economic variables differ significantly from zero (Mikkelsen, 2005). Since the researcher had dealt with time-series data; it was necessary to test the level of stationarity in the

The author had dissected the post and pre-merger situations of Vodafone and British Petroleum in detail by using various quantitative numbers and by the hypothesis developed in the metodology area.

Paired t-test had been used to evaluate whether profitability, sales , residual income, residual operating income, P/E ratios is significantly different from the post-merger figures. OLS method was performed to comprehend whether the beta coefficient of the financial variables is differ from 0 significantly

3.2.1.Paired t-test results: Vodafone case

With taking significance level on 5% ,the analyst had implemented Paired T-test to check that any significant changes had been observed in the merger variables over the time or not.Time horizon for pre-merger was taken between 1996 and 2006 and for post-merger it was analyzed between 2007-2014.
The used null hypotheses for these tests is as following: The average financial variables before merger and after merger are not statistically different. So, μ (pre-M&A) = μ (post -M&A)

Merger paired variable	Merger paired variable
Pre-M&A and post-M&A ROCE	0,5441
Pre-M&A and post-M&A residual income	0,6111
Pre-M&A and post-M&A resiudal operating income	0,5791
Pre-M&A and post-M&A P/E multiple	0,2921
Pre-M&A and post-M&A WACC	0,3941
Pre-M&A and post-M&A sales	0,0521

From these hypothesis we can see the pre-M&A return on capital emplyeed, residual income, residual operating revenue, price/earnings multiple, WACC and sales can not be considered statistically different from post-M&A figures.

3.2.2.Data diagnostic: Vodafone case

Through using ARIMA (0, 1, 0) the researcher tried to test time series variables in order to examine the scope of randomness in analyzed data before starting to run the OLS based regression. It was obtained that randomness in data is provided and exsistence of trend had been rejected. According to autocorrelation mechanism the analyst had applied various changed degree of data. Autoregressive integrating moving average test was applied with taking siginificance level on 5 percent .The initial integerinicates the degree of autocorrelation, second integer indicates the trend and the last one indicates the the fact of being prevalent of autocorrelation in the obtained data set. The null hypothesis is established as following: If randomness exist in the dataset, it indicates trend exists in dataset.

Model	Model-Fit statistics
	Stationary R2
ROCE_Model1	0.00000000000000005
RI_Model2	-0.00000000000000008
ROI_Model3	-0.00000000000000006
PE_Model4	-0.00000000000000010
WACC_Model5	-0.00000000000000015
Size_Model6	0.00000000000000001

With 5% significance level it shows that all variables possess randomness.That’s why any trend in this data has not been not identified

3.2.3.Vodafone’s shareholder’s profitability analysis

Characteristics	Value/Result
Depend. variable	ROCE
Independ. variable	Time
Expected result	+Positive
Actual indicator	- Negative
R2	1,2 %
T_value	0,4331
p-value related to t-value	0,6711
F-value	0,1880
p-value related to F - value	0,6711

Lower value of R square means that the independent-time variable had not been explained well by included variable. To eliminate this issue a researcher should add additional variable to explain the independent variable more entirely.Because T- Value is low and p-value is very high , the hypothesis established in metdlogy part becomes true,$\beta = 0$.
Because F-value in the regression is too small and p-value is very high , the hypothesis established in metodology part evaluated as true,$\beta = 0$.

Conclusion : According to this regression,it becomes evident that effect of Air Touch acquisition by Vodafone had not any statistically significant profitability on Vodafone's shareholders

3.2.4.Effect of merger over Vodafone's economic profit

Characteristics	Value/Result
Depend. variable	Residual income
Independ. variable	Time
Expected result	Positive
Actual indicator	Positive
R2	1.20%
T_value	0.418
p-value related to t-value	0.682
F-value	0.175
p-value related to F - value	0.682

R2 (square) : Due to high value of R2 of the regression the elucidative power of the model is moderate. That's why independent variable can explain the varity with high degree in the dependent variable.

T- Value and p-value: The t-value of the factor variable is great and the relevant p-value is small with taking significance degree on 5 percent. Along this line, the factor variable is as we want and the null hypothesis that had been established in the methodology part of this research paper does not keep true; $\beta \neq 0$.

F- Value and p-value: The F-value of the model is high and the relevant p-value is small with taking significance level on a 5 percent .That's why, the

used regression equation is relevant to apply and the null hypothesis that had been established in the methodology part of this paper does not keep true; $\beta \neq 0$.
Conclusion : According to statistical results of the used regression, it becomes obvious that the influence of the Air Touch company merger in 1998, had been unsuccessful to provide any significant influence on Vodafone Plc’s sustainable financial profit because the expected and actual beta indicator has become unsuccesful to match.

3.2.5 Influence of merger on sustainable economic profit of Vodafone.

Characteristics	Value/Result
Depend. variable	Residual operating income
Independ. variable	Time
Expected result	Positive
Actual indicator	Negative
R2	54.20%
T_value	-4.217
p-value related to t-value	0.001
F-value	17.78
p-value related to F - value	0.001

3.2.6 Influence of merger on growth potentiality of Vodafone.

Characteristics	Value/Result
Depend. variable	P/E ratio
Independ. variable	Time
Expected result	Positive
Actual indicator	Negative

R2	33.50%
T_value	-2.747
p-value related to t-value	0.015
F-value	7.546
p-value related to F - value	0.015

Beta sign: The expected and the real sign have not coordinated up in this regression model. Along these lines, the fundamental instinct behind structure up the straight regression does not hold and the slant of the regression isn't thoughtfully important and all the regression results are rationally questionable.
R-square: The R-square of the regression model is moderate; so the informative intensity of the regression is moderate. The autonomous variable that is time for this situation can modestly clarify the changes in the reliant variable.
T-Value and p-value: The T_value of the factor variable is high and the related p-value is small if we take significance degree on 5 percent. Along these lines, the factor variable is an attractive one and the hypothesis which had been established in the methodology segment of the examination does not keep true ; $\beta \neq 0$.
F-Value and relevant p-value: The F-value of the regression is relatively high and the related p-value is low on a 5%significance level. In this way, the regression is an alluring one and the hypothesis which had been established in the methgodology segment of the does not keep true; $\beta \neq 0$.
Last remark: According to measurable outcomes of the regression model, it had been obvious that the effect of the Air Touch merger in 1998, had neglected to deliver any noteworthy effect over Vodafone's growth opportunity because the expected and actual beta indicator has neglected to coordinate in this way creating significance results.

3.2.6 Influence of merger on risk exposure of Vodafone

Characteristics	Value/Result
Depend. variable	Cost of capital
Independ. variable	Time
Expected result	Negative
Actual indicator	Positive
R2	2.50%
T_value	0.621
p-value related to t-value	0.544
F-value	0.385
p-value related to F - value	0.544

Beta sign: Beta sign: The expected and the real sign have not coordinated up in this regression model. Along these lines, the fundamental instinct behind building up this regression does not hold and the slant of the regression isn't thoughtfully important and all the regression results are rationally questionable.
R2 : The R-square of this regression equation is relatively low; so elucidative power of the regression is low. The independent variable for this condition can scarcely explain the changes in the reliant variable. So as to expand the explanatory power of the variable, the analyst needed to include some extra data to this model.
T-Value and p-value. The t-value of the factor variable is excessively low and the related p-value is excessively high on a 5% significance level. In this way, the factor variable is definitely not an attractive one and the hypothesis had been created in the methodology section of the exploration holds true ; $\beta = 0$.
F-Value and relative p-value: The F-value of the model is excessively low and the related p-value is excessively high on a 5 percent significance level. In this

way, the our regression is not attractive one and the hypothesis had been established in the methodology section of this paper holds true; β = 0.
Last remark: According to analyzed outcomes, it had been clear that the influence of the Air Touch merger in 1998, had neglected to deliver any critical effect over Vodafone's general cost of capital..

3.2.6 Influence of merger on sales of Vodafone

Characteristics	Value/Result
Depend. variable	Sales volume
Independ. variable	Time
Expected result	Positive
Actual indicator	Positive
R2	77.90%
T_value	7.28
p-value related to t-value	Near to zero
F-value	53
p-value related to F - value	Near to zero

Beta sign: The expected and the actual indicator have coordinated in this regression model. Along these lines, the very simple intuition behind creating the linear regression does hold and the slant of the regression is thoughtfully meaningful.
R^2 : The R-square of the regression model was moderate; so the explanatory ability of the regression is moderate. In this regression,the independent variable can moderately interpret the changes occured in the dependent variable.

The t-value is high and the relative p-value is low.So, the null hypothesis which had bee created in the methodology section of this research does not hold true; $\beta \neq 0$

The F-value of the model is high and the relative p-value is low with 5 percent level of significance. Along this line, the regression model is a attractive one and the null hypothesis had been established in the methodology part of this research doesn't hold true; $\beta \neq 0$.

Last remark: According to statistical results obtained in this analysis, it had been clear that the influence of the Air Touch merger in 1998, had been successful to cause significant influence on Vodafone's average cost of capital.

3.3.Paired t-test results: British Petroleum case

Based on a 5% level of significance, the researcher had conducted paired t-test to examine whether the merger variables have changed statistically significantly across the time or not. 1998-2006 had been framed as a pre-merger period and 2007-2015 had been framed as a post-merger period and the researcher had tested whether these economic variables post-merger average and pre-merger average do vary on a statistically significant basis. Based on a 5% level of significance, the researcher had conducted paired t-test to examine whether the merger variables have changed statistically significantly across the time or not. 1998-2006 had been framed as a pre-merger period and 2007-2014 had been framed as a post-merger period and the researcher had tested whether these economic variables post-merger average and pre-merger average do vary on a statistically significant basis. The common null hypotheses for these paired t-tests are as follows: The average of pre-merger and post merger economic variables are not statistically different. So, μ (pre-merger) = μ (post -merger)

With taking significance level on 5% ,the analyst had implemented Paired T-test to check that any significant changes had been observed in the merger variables over the time or not.Time horizon for pre-merger was taken between 1998 and 2006 and for post-merger it was analyzed between 2007-2015.

The used null hypotheses for these tests is as following: The average economic variables before merger and after merger are not statistically different. So,

μ (pre-M&A) = μ (post -M&A)

Merger paired variable	p-value
Pre-M&A and post-M&A ROCE	0.014
Pre-M&A and post-M&A residual income	0.005
Pre-M&A and post-M&A resiudal operating income	0.357
Pre-M&A and post-M&A P/E multiple	0.053
Pre-M&A and post-M&A WACC	0.304
Pre-M&A and post-M&A sales	0.017

From these hypothesis we can see the pre-M&A shareholder's residual operating income, P/Earning multiple and WACC is not considered statistically different from post-M&A shareholder's residual operating income, P/Earning multiple and WACC.\

3.3.1. Effect of merger on shareholder's profitability of British Petroleum

Characteristics	Value/Result
Depend. variable	ROCE
Independ. variable	Time
Expected result	Positive
Actual indicator	Negative
R2	30.50%
T_value	-2.565
p-value related to t-value	0.022
F-value	6.579
p-value related to F - value	0.022

Beta sign: The predicted and the actual sign have no longer matched up on this regression equation. So, the very number one instinct in the lower back of constructing-up the linear regression does now not keep and the slope of the regression is not conceptually big and all the regression results are coherently dubious.

R-square: The R^2 of the regression equation can be very low; so the explanatory power of the regression is low. The unbiased variable, it clearly is time, in this case can not explain the modifications inside the dependent variable. On the way to increase the explanatory ability of the variable, the researcher had to upload a few variables in the equation.

T-value and p-value: The t value of the variable is excessive and the relative p value is small on 5 percent of significance. So, the element variable is a suitable one and the null speculation which were set in the technique part of the studies does now not maintain true; β ≠ zero

F- value and related p-value: The F-value of the regression is excessive and the related p-vlue is small on a 5 percent degree of significance. Along this line, the regression equation is a attractive one and the null hypothesis which have been established in the methodology part of the research does no longer maintain true ; $\beta \neq$ zero.

Final remark: According to statistical outcomes , it has been clear that the influence of the Amoco M&A back on 1998, had failed to give any significant influence over British Petroleum's shareholder's profitability due to the reality the predicted and actual beta sign has not matched.

3.3.2. Effect of merger on economic profit of British Petroleum

Characteristics	Value/Result
Depend. variable	Residual income
Independ. variable	Time
Expected result	Positive
Actual indicator	Negative
R2	20.60%
T_value	-1.973
p-value related to t-value	0.067
F-value	3.891
p-value related to F - value	0.067

Beta sign: The expected and the actual beta have now not matched up in this regression model. Therefore, the very fundamental intuition behind building-up this linear regression does not longer maintain and the slope of the regression was not conceptually meaningful and all the regression outcomes are coherently questionable .

R-square: The R^2 of the regression equation could be exceptionally low; therefore the explanatory capability of the regression is low. The independent variable, in this example can hardly give an explanation for the changes in the structured variable. with a purpose to increase the explanatory capability of the variable, the analyst should upload a few additional variable to the model.

T- value and p-value: The t-value for the dependent variable is excessively low and the relative p-value is simply too excessive 5 percent degree of significance. Therefore, the factor variable isn't always a suited one and the null hypothesis had been established in the methodology section of this study keeps ; $\beta = 0$.

F value and p value: The F-value of the regression is simply too low and the relative p-value is excessively high with 5 percent degree significance. So, the regression model isn't always a applicable one and the null hypothesis which had been established in the methodology section of the studies keeps true ; β = zero.

Last remark: According to regression based outcomes, it had been clear that the influence of the Amoco merger back on 1998, had neglected to create any noteworthy effect over British Petroleum's economic benefit as the predicted and actual beta sign has neglected to coordinate in this way delivering significance results.

3.3.3. Effect of merger on sustainable economic profit of British Petroleum

Characteristics	Value/Result
Depend. variable	Residual operating income
Independ. variable	Time
Expected result	Positive
Actual indicator	Negative

R2	19.50%
T_value	-0.441
p-value related to t-value	0.076
F-value	3.628
p-value related to F - value	0.076

Beta sign: The expected and the real indicator have not coordinated up in this regression model Along these lines, the extremely essential intiution behind constructing up the linear regrssion does not hold and the slope of the regression isn't adroitly significant and all the regression outcomes are rationally questionable.

R-square: The R^2 of the regression is relatively low; that's why the explanatory capability of the regression is lower. The independent factor- time, for this situation can scarcely clarify the changes in the dependent one. So as to increase explanatory of the variable, the specialist needed to include some extra variable to the model.

T-Value and p-value: The t value of the dependent variable is excessively low and the related p-values excessively high on a 5% dimension of essentialness. In this way, the factor variable is certifiably not an attractive one and the hypothesis had been established in the technique part of exploration remains true; $\beta = 0$

F-Value and p-value: The F-estimation of the regression is excessively low and the related p-value is excessively high on a 5 percent signicance level . In this way, the regression model is certifiably not an attractive one and the invalid theory which had beenestablished in the methodology segment of this exploration remains constant; $\beta = 0$.

Last remark: According to the regression outcomes, it had been obvious that the influence of the Amoco merger back on 1998, had neglected to deliver any huge effect over British Petroleum's sustainable financial as the actual and expected beta sign has neglected to coordinate accordingly in creating significant results.

3.3.4. Effect of merger on sustainable economic profit of British Petroleum

Characteristics	Value/Result
Depend. variable	P/E ratio
Independ. variable	Time
Expected result	Positive
Actual indicator	Negative
R2	12.60%
T_value	-0.356
p-value related to t-value	0.161
F-value	2.172
p-value related to F - value	0.161

Beta sign: The expected and actual sign did not match in this regression equation. Consequently, the underlying intuition underlying linear regression does not hold, and the slope of the regression is not conceptually significant, and all regression results are always skeptical.

R-squared: R2 of the regression equation is very low; therefore, the explanatory capability of the regression is low. In this case, the time argument can hardly explain the changes in the dependent variable. To increase the explanatory power of a variable, it is needed to add some additional variables to the equation.

T value and relative p value: t value of dependent variable is excessively low and corresponding p value is very high at 5 percent significance level.

Therefore, the factor variable is undesirable and the null hypothesis in the methodological part of the study keeps true; β = zero.

F value and p value:According to the regression,F value is excessively low and the corresponding p value is excessively high at 5 percent significance level. Therefore, the regression model is undesirable and the null hypothesis in the methodological section of this paper remains true ; β = zero

Last remark: According to regression based statistical outcomes, it was found that the influence of the Amoco merger in 1998 did not have a significant influence on the growth potential of British , as it did not match the expected and actual beta test symptoms.

3.3.5. Effect of merger on cost of capital of British Petroleum

Characteristics	Value/Result
Depend. variable	Cost of capital
Independ. variable	Time
Expected result	Negative
Actual indicator	Negative
R2	62.20%
T_value	-4.969
p-value related to t-value	Near to zero
F-value	24.696
p-value related to F - value	Near to zero

Beta sign: The predicted and the actual sign matched up in this regression model.Therefore, the most basic intuition behind establishing the linear regression does hold and the slope of the regression equation is rationally meaningful.

R-square: The R^2 of the regression equation is very high; therefore, the explanatory ability of the slope is moderate. The independent variable, the time, in this case can moderately interpret the changes in the dependent variable.
T-value and relative p value : The t value of the factor variable is great and the realtive p value is low with the 5 percent level of significance. Therefore, the factor variable is desirable and the null hypothesis that has been placed in the methodological part of this analysis is not True ; $\beta \neq$ zero.
F- Value and relative p value : According to the regression equation results,the value of F is high and relative p value is low at a 5 percent significance level. Therefore, the regression equation is a desirable and the null hypothesis that has been placed in the systematic part of the research isnot applicable; $\beta \neq$ zero
Final remark: Based on the regression-based statistical results, it has been clear that the influence of the Amoco M&A in 1998 was successful in having a significant impact on the total cost of BP's capital.

3.3.6. Effect of merger on sales of British Petroleum

Characteristics	Value/Result
Depend. variable	Sales volume
Independ. variable	Time
Expected result	Positive
Actual indicator	Positive
R2	86.70%
T_value	0.931
p-value related to t-value	0
F-value	97.478
p-value related to F - value	0

Beta sign: The predicted and the actual sign have observed that matched up in this regression equation. Therefore, the most basic intuition behind establishing the linear regression does hold ,so the slope of the regression equation is rationally meaningful.
R-square: The R^2 of the regression equation is excessively high; so the explanatory ability of the regression is moderate. The independent variable, which is taken as time, in this case can moderately interpret the changes in the dependent variable.
T_value and p_value: It's seen that t-value of the factor variable is high and relative p-value is small with 5 percent level of significance. Therefore, the factor variable is attractive and the null hypothesis had been written in the methodology section of this research doesn't hold true; $\beta \neq$ zero.
F_value and p_value: The F-value of the regression is great and the relative p-value is small if we take 5 percent level of significance. Therefore, the regression model can be considered desirable and the null hypothesis had been created in the methodology section of this thesis doesn't keep true; $\beta \neq$ zero.
Final remark: According to the statistical outcomes of the regression, it is clear that the influence of the Amoco M&A in 1998 can be considered significant over British Petroleum's overall sales.

This regression research reveals that the M&A activity conducted by Vodafone and BP has had been unsuccessful to make the desired influence on the potential improvement of economic profit, sustainable economic income , growth potential and shareholder's value. So far,it has been observed that there had been positive influence on the empire building motives; however the risk exposure did not entirely fall to the desired level.

4.Conclusion

In this finishing up part of the exploration I will show the summary of the major diagnostic findings; I will look at to what degree the examination targets have been accomplished in this research; the actual conclusions of these findings.

4.1.Summary of the major findings

- For both BP and Vodafone the M&A attempt had neglected to deliver the ideal influence on investor's value. It had been clear in the regression based examination that with respect to a 5 percent significance level, the Amoco and Air Touch Company based M&A had neglected to deliver any measurably critical effect over the BP and Vodafone's investor's value.

- For both British Petroleum and Vodafone M&A activity had neglected to deliver the ideal level of effect on economic benefit. It had been apparent in the regression based examination with respect to a 5percent level of significance, the Amoco and Air Touch Company mergers had neglected to deliver any measurably critical effect over the BP and Vodafone's economic benefit .
- For both British Petroleum and Vodafone acquired companies had neglected to create the ideal effect on sustainable financial benefit. It had been clear in the regression based examination with respect to a 5 percent degree significance, the Amoco and Air Touch Company mergers had neglected to deliver any measurably huge effect over the BP and Vodafone's sustainable financial benefit .

- In both British Petroleum and Vodafone merger and acquisition activities had been unsuccessful to make the desired degree of influence on growth potentiality of this companies. It had been clear according to the regression based analysis on a 5 percent level of significance, the Amoco and AirTouch Company M&A had neglected to deliver any factually huge effect over the BP and Vodafone's growth potentiality respectively
- For both British Petroleum and Vodafone the merger and acquisition try had neglected to deliver the ideal level of influence on cost of capital. It had been clear in the regression based examination that with respect to a 5 percent significance level, the Amoco and Air Touch
- Organization based M&A had neglected to deliver any factually huge effect over the BP and Vodafone's cost of capital .
- For both British Petroleum and Vodafone the M&A try had the capacity to deliver the ideal level of influence on corporate sales.. It had been apparent in the regression based examination that with respect to a 5 percent significance level, the Amoco and Air Touch Company mergers had been effective in delivering factually critical influence over the BP and Vodafone's corporate sales.
- From the case study of Vodafone and BP we can make a result that the major factor in the merger and acquisition process is how the merger proccess is executed – the arrangement structure and the assurance of potential sources of synergies in M&A.

4.2 Coverage of the aims and objectives

First research objective – Essential success factor in merger and acquisition: It had been clear that M&A process structure and pricing the valuation premium are the most essential achievement factor in defining the level of success in M&A activity.

Second research objective – Influence of M&A on shareholder's profitability: It had been apparentthat according to the OLS regression examination the relationship of company expansion by merger and the beforementioned influence variable doesn't give statistically significant result both in terms of BP and Vodafone with a 95 percent level of confidence.
Third research objective – Influence of M&A on economic profit: It had been apparent according to the OLS based regression research that the correlation between company expansion by merger and the beforementioned influence variable doesn't give statistically significant result both in terms of BP and Vodafone on a 95 percent level of confidence.
Fourth research objective – Influence of M&A on sustainable economic profit: Research results made it clear that according to the OLS based regression analysis correlation between company expansion with merger and the beforementioned variable doesn't give statistically significant result both in case of BP and Vodafone with a 95 percent level of confidence.
Fifth research objective– Influence of M&A on growth potentiality:From this research it had been clear that according to the OLS based regression research correlation between company expansion by merger and the beforementioned variable doesn't give statistically significant result for both British Petroleum and Vodafone case on a 95 percent of level of confidence.
Sixth research objective – Influence of M&A on empire building: Research shows that relationship between company expansion with merger and the beforementioned variable gives statistically significant result for both case of BP and Vodafone with a 95 percent confidence level.
Last research objective – Influence of M&A activity on risk exposure: From the research it had been clear that relationship between company expansion with merger and the beforementioned variable does not give statistically significant result for both case of BP and Vodafone with a 95% of confidence level.

References :

1. Zheng, W. and Sheng, Z. (2015). Research on the issues and countermeasures of Chinese Automobile Enterprises Transnational Merger and Acquisition. Business and Management Research
2. Xia, B.V. (2014). HiQ International Company: A research of operational effectiveness post-Merger and acquisition
3. Siougle, G. X. , Spyroun, S. and Tsekrekos, A. (2014). Conference calls in merger and acquisition announcements: Do they decrease information asymmetry? UK Evidence.
4. Tierney, B. (2015). Pump industry: M&A . World Pumps, 2010
5. Besembinder, H. and Zang, F. (2015). Overreaction to M&A Announcements. SSRN Electronic Journal.
6. Browers, H., and Miller, R. (2014) 'Decision of Investment Banker and Shareholders' Wealth of Firms involved in acquisitions' Financial management
7. Catfield, H., Dalbour, M. and Ramden, C. (2016). Returns of Merger and Acquisition Activities in the Restaurant Industry. Journal of Foodservice industry Research
8. Chen, T., (2015) 'Critical success factors for various strategies in the banking industry.' International Journal of Bank Marketing
9. Coper, D. & Schindler, P. (2016) Business study Methods. 9th Edition, New Delhi, McGRAW -HILL.
10. Coultarde, F. (2016). Merger but not an acquisition. Circuit World
11. Dahmash, F. (2015). Size impact on Company Profitability: Evidence from Jordan
12. Fanti, L. and Meccheri, N. (2015). Non-rigid wages and merger profitability reversal under convex costs and centralized unionization.

13. J.M. Rmanuj, J. (2016). Introduction of Merger, Acquisition and Divestitures
14. Jensen, A. (2017). Practice of business Seeking a candidate for merger or acquisition. Business Horizons
15. JUN, B. and KIM, J. (2017). PROFITABILITY OF A MERGER ON NETWORKS. The Manchester School
16. Kanval, A., Ahmad, N., Majid, M. and Nadem, M. (2014). The Efficiency of Merger and Acquisition in Telcom Sector of Pakistan. Singaporean Journal of Business
17. Mark, M. and Mirvis, P. (2016). Merge Ahead: A Research Agenda to Increase Merger and Acquisition Success.
18. M&A roundup. (2016). Metal Powder Report
19. Nykiel, R. A. (2017) Handbook of Marketing study Methodologies for Hospitality and Tourism. New York, Routledge]
20. Park, J. and Kim, K. (2014). Strategic Business Cycle Management and Merger and Acquisition Patterns. SSRN Electronic Journal.
21. Poindexter, E. (2014). THE PROFITABILITY OF INDUSTRIAL MERGER*. The Journal of Finance
22. Rovnpor, J. (2017). The relationship between four personal characteristics of (CEOS) and company M&A activity
23. Saedi, B. (2014). Studying the Effect of Electronic Customer Relationship Management on Growth and Profitability of the company
24. SaintOnge, H. & Chatzhkel, J. (2017) Beyond the Deal: M&A which Achieve Breakthrough Performance Gains. McGraw-Hill.
25. Schneidher, F. (2016). Efficiency and profitability: An inverse relationship based on the size of Austrian firm.
26. Sehghal, A. (2014). The Concept of Earn-out in M&A Transactions. SSRN Electronic Journal

27. Patrhick A. Gaugkhan, M&A and Corporate Restructurings, 4th. Ed., Wiley, 2017

28. Lutfi, Muslih and Arsita, Jessi. The Analysis of Factors Affecting P/E Ratio on the Company Shares Registered in Jakarta Islamic Index M. Academic Journal of Economic Studies Vol. 2, No.3, September 2016

29. Cho, Sik Young. - The effect of organizational citizenship behavior on synergy creation in M&A, according to levels of ocb and types of M&A. Academy of Accounting and Financial Studies Journal,2014

30. Gabrilsen, J.F. 2017. Conglomerate Mergers: Vertical Mergers in Disguise? Internatonal Journal of Economics of Business
31. Goldberg, S.R. and Godwin, J.H. 2018. Merger: Will It Really Add Value. Journal of Corporate Accounting & Finance.
32. Hill, C. W. L., & Jones, G. R. (2014). Strategic Management: An Integrated Approach. Houghton Mifflin Company
33. Mergers and Acquisitions from A to Z Hardcover – 2016
34. The Art of M&A, 4th Edition: A Merger Acquisition Buyout Guide
35. M&A s in the Airline Industry: Emotions Flying High by Mark Thomas and Christopher Kummer (2015)
36. Applied Corporate Finance by Aswath Damodaran (2015)
37. The Global Trends in Mergers & Acquisitions (M&A) by Christopher Kummer (2015)
38. Mergers & Acquisition in Malaysia: A Comprehensive Step-by-Step Approach by Christopher Kummer, Franz Ferdinand Eiffe, Wolfgang Mölzer, Andre Gan, Teo Ee Von (2014)

39. Mergers and Acquisitions – A Comprehensive Step-by-Step Approach by Christoper Kummer, Franz Ferdnand Eiffe, Wolfgang Mölzer, Arjya B. Magumdar (2016)
40. Investment Valuation by Aswalth Damodaran (2017)
41. M&A: Strategy, Valuation and Integration by Kamal Gosh Ray (2015)