Market for corporate control and privatised utilities

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1. Introduction

In Europe the public utilities namely, electricity, gas, water and telecommunications were primarily under state ownership particularly after the Second World War (Parker, 2003). However this scenario changed in the 1980s when technological changes allowed for competition in supply where previously monopoly prevailed. This coupled with a growing discontent in the efficiency of service delivery in the public sector led the governments to restructure and privatise their utility industries. With the restructuring of the European utilities during the nineties substantial consolidation has taken place within these industries. The main reason behind this consolidation is to capture "inefficient utilities" if they existed, to be acquired and become part of a more efficient company (Becker-Blease et al, 2007). Another rationale behind these mergers and acquisitions (M&A) as put forward by the managers of these investor-owned utilities is that in a deregulated market, utilities needed to be large to capture efficiencies in procurement, production, marketing and administration and thereby remain competitive (Becker-Blease et al, 2007).

The tendency of mergers to cluster by time and industry is a well-documented pattern among publicly traded companies and evidence suggests that industry shocks are one of the important catalysts for this clustering. For instance, Mitchell and Mulherin (1996), Mulherin and Boone (2000) and Andrade et al (2001) document that during the 1980s and 1990s, merger activity was concentrated in a relatively few industries and that these industries had or were undergoing major economic changes. Although the source of these economic shocks varies, Andrade et al. (2001) conclude that deregulation was the most prominent reason for the merger activity in the 1990s.

To this effect the aim of this study is to examine the impact of M&A in European utilities on shareholder returns both in the short and long run. Furthermore this study also aims to analyse the post merger operating performance of the European utilities following mergers. The rest of this paper is structured as follows. Section 2 provides a broad overview of the privatisation and deregulation process in the European Union. Section 3 provides the literature review where subsections 3.1.1 to 3.1.7 review the theory and empirical evidence of M&A in non regulated industries. The purpose of this section is to review the motives behind M&A and these motives help to increase (or decrease) shareholder value following M&A. Subsection 3.1.8 and 3.1.9 review the empirical literatures on the long run shareholder returns from M&A and post merger operating performance of the companies that were subjected to M&A. Section 3.2 reviews the empirical evidence of M&A in utilities. Specifically subsection 3.2.1 provides the empirical evidence of the changes in shareholder value following M&A of utilities and subsection 3.2.2 reviews the literature that looks into the motives behind the M&A of utilities. This is followed by section 4 which provides a critique of the various extant studies that have been reviewed in section 3. Section 5 identifies the gap in literature identifies the gap in literature and formulates the research questions, section 6 and 7 gives details of proposed data collection and sample selection method section 8 gives an overview of the proposed methodology and finally section 9 conclude.

2. Background

The primary reason behind deregulation of the utilities market was to introduce competition in these network industries (Parker, 2003; Moschel, 2004). Offner (2000) posed “market development in Thacherite political ideology and fragile syncretism of the Europen Union” as the reason behind deregulation of public utilities in Europe. These network industries are unique and essential facilities with characteristics of a natural monopoly. Therefore it is difficult to introduce competition in the network industries due to a number of reasons. Green (2007) posited that in a network industry with a natural monopoly characteristic it is too expensive to duplicate the transmission and distribution networks. Therefore the industry’s cost will be minimised if there is only one network operator within a given area. Another difficulty of introducing competition as pointed by Moschel (2004) in the context of deregulation of the telecommunications in the European market is that the new entrants in these markets often have to depend on the upstream services or equipment of the incumbent. The incumbent’s will always have the opportunity to obstruct the competitors. Thus it is important to have some form of regulation so as to provide the competitors a level playing field. Parker (2003) posits that regulation should involve a balance between advancing the interests of consumers and investors as well as generating competition within the industry. This study found that in assessing the impact of privatisation on economic performance it is difficult to separate out the effects of ownership, competition, regulation and technological change. Therefore it is difficult to assess how far privatisation rather than other factors is responsible for the efficiency gains.

2.1 Privatisation process in the European Union

Parker (1998) posits that there are two principal economic pressures that led to the privatisation activity in Europe which are liberalisation of the markets at the EU level and government budgetary difficulties. Moreover this study identified that EU confronts with a dilemma as far as the privatisation process in Europe is concerned. This arose from the need of the EU to accommodate different countries with different level of state ownership and also from the belief that state monopolies were necessary in the public utility sectors to ensure a universal service and network economies. However this study shows that in the case of utilities a new interest has developed towards liberalisation and competition in different parts of EU. This is due to the influence of the economists who have pointed to technological change thereby undermining network monopoly characteristics. Following this study and ABS energy research (2006) the information that has been obtained on the level of privatisation and deregulation of public utilities namely electricity, gas, water and telecommunication in some of the major EU countries have been summarised in the following table.

Table 1

	Electricity	Gas	Water	Telecommunication
UK	Full	Full	Full	Full
Germany	Partial	Full	Partial	Full
Italy	Partial	Full	Partial	Partial
France	Partial	Closed	Closed	Partial
Greece	Partial	Closed	Partial	Partial
Austria	Partial	Full	Closed	Closed

Belgium	Partial	Full	Closed	Partial
Netherlands	Partial	Full	Closed	Partial
Spain	Full	Partial	Partial	Full
Portugal	Partial	Partial	Closed	

Full = Less than 25% government ownership
Partial = Between 25% and 75% government ownership
Closed = More than 75% government ownership

2.2 Gains from deregulation

This subsection discusses some of the empirical evidence of performance of utilities following deregulation and privatisation in Europe. Performance here refers to both the efficiency gains of the utility companies following deregulation as well as stock market gains of these companies. Parker (1997) aimed to find whether the UK efficiency gains in the price cap mechanism are equitably distributed between shareholders in terms of higher profits and consumers in terms of lower prices. This paper considers the operation of price cap by reviewing the profits made by a number of principal regulated companies and the returns earned by their investors since privatisation. The results showed that following privatisation the regulated companies initially earned supernormal profits, which later declined to normal levels as prices were lowered. This was also reflected in the higher shareholder returns to the investors in each of the regulated utilities, especially in the early years after privatisation. Higher shareholder returns are also reflected in the study of Dnes et al (1998). In this study the stock-market returns for the RECs has been compared with the general stock-market returns for the post privatisation period following a conventional event study methodology. The result indicated that overall the regulatory impact on shareholder returns were positive although it is a minor contributor to the persistent abnormal returns observed. This study attributed these high returns in terms of government's underestimation of the scope for cost savings following privatisation. Boardman and Laurin (1998) attributed these higher returns to the companies exploiting their market power following lax regulation in the post privatisation period. Robinson and Taylor (1999) undertook an event study methodology to study the impact of regulation in UK electricity industry with expectations of investors in the shares of RECs. In this paper the movement of RECs' returns are compared to movements in the stock market as a whole. The results gave no evidence of regulatory capture in the ESI but suggest that regulatory risk does exist. Parker (2003) drawing evidence from UK further showed that although the investors were the main beneficiaries in the UK but with the development of competition and effective regulation some gains were moved on to the consumers. This study also posited that regulation is essential following privatisation in the network industries in order to guarantee efficiency gains. From the above review it is evident that overall privatisation and deregulation have generated gains both to the producers as well as the consumers.

In the context of European deregulation of utilities Heritier (2001) found European policy making for restructuring of utilities is in favour of competition and market integration. Thomas (2004) on the other hand found that in the context of British model of deregulation of electric utilities, this industry in still falling into oligopoly. Moreover this study concluded that the original regulatory objective failed to increase competition in this sector. Furthermore this study concluded that the original regulatory objective of providing 'light' or mild regulation has not been fulfilled. Instead this study found that the size of regulatory body almost doubled in the context of UK electric utility.

The empirical studies on the gains from deregulation in Europe are mostly concentrated in the UK. Empirical evidence on the performance of the utilities following deregulation is mixed. However overall the results suggest that deregulation helped to increase efficiency in the utilities sector in the form of lower prices to consumers and higher returns to the shareholders (Parker, 1997; Dnes et al, 1998; Boardman and Laurin, 1998; Robinson and Taylor, 1999; Parker 2003).

3. Literature Review

The transformation of the utilities market has been subject of research from wide range of academic interests such as public policy, industrial economics, regulatory economics, financial economics, benchmarking and technical efficiency, and strategic management. Therefore, the literature on network utilities is quite diverse and still flourishing. This review of research however will particularly focus on the empirical evidence of M&A in utilities as well as general empirical studies on M&A in non regulated industries. The reason behind reviewing this particular strand of literature is to seek potential gaps in the study of M&A in utilities and thereby to formulate research question and hypothesis on the basis of that gap.

This section has been divided into the following subsections. Section 3.1 reviews the theory and empirical evidence on the stock market performance following M&A of non-regulated industries. The objective of this section is look into the motives behind the M&A in non regulated industries and also to examine the stock price performance following these M&A so that these arguments can be extended in the light of M&A in utilities. This section is further divided into eight subsections and these sections have reviewed different empirical motives behind M&A and also the short and long term stock price performance following M&A. Section 3.2 reviewed the literatures that have looked into the M&A of utilities in particular. The purpose is to see the evidence of M&A in utilities that exist empirically and thereby to seek potential gaps that exist for future research. This section is further divided into two subsections. Section 3.2.1 specifically looked into the empirical evidence on the stock market reactions following M&A in utilities and section 3.2.2 reviewed the extant studies on the motives behind the utilities' M&A.

3.1 Stock market performance following mergers and acquisitions: Theory and empirical evidence

The aim of this section is to review the theory and empirical evidence surrounding the motives behind M&A and the different findings on how M&A had an impact on shareholder wealth. This review is important since central to any M&A research lays the question of how the M&A has affected the shareholders (Sudarsanam, 2003). This section is divided in different subsection and each of these subsections review the motives behind M&A and how it had an impact on shareholder value creation. The final subsection 3.1.8 reviews the long run empirical evidence on M&A.

3.1.1 The Synergy hypothesis

The synergy hypothesis proposes that acquisitions take place when the value of the combined firm is greater than the sum of the individual firms (Bradley, Desai and Kim, 1988; Seth, 1990a). The additional value or synergistic gain is derived from an increase in market power, an increase in operational efficiency, or some form of financial gain (Singh and Montgomery, 1987; Seth 1990b). Operating synergy postulates economies of scope and scale and posits that mergers help achieve levels of activities at which these can be obtained. It includes the concept of complementarities of capabilities (Weston et al, 2004). Financial synergy on the other hand hypothesises complementarities between merging firms not in management capabilities, but in matching the availability of investment opportunities and internal cash flows. Another source of synergistic gains in case of cross border acquisitions focuses on market development opportunities (Seth, 2000).

U.S evidence of synergy motive behind M&A

The early event study evidence on M&A has been provided by Jensen and Ruback (1983). They have reviewed 13 studies with sample data ending mostly in the late 70s. The summary table showed a 30% positive return to target shareholders in successful tender offers and a lower return of 20% to targets on successful mergers. Excess return to bidders for successful tender offers on the other hand was only a positive 4% and zero for mergers. This evidence was generally taken to indicate that mergers create wealth for shareholders. However since this paper has reviewed studies with sample data more than 30 years old so it is important to make a similar kind of analysis with recent data set and also with recent phenomenon affecting the market for corporate control like the privatization and subsequent deregulation of the utilities industries.

Bradley et al (1988) used event study methodology to estimate the magnitude of synergistic gains that result from successful acquisitions achieved through tender offers[1]. Synergistic gains from a successful tender offer have been defined as sum of the changes in the wealth of the stockholders of the target and the acquiring firms. This study used a sample of 236 tender offers that occurred in the period 1963 to 1984. Using an event window of 5 days before the announcement of the first bid through 5 days after the announcement of the ultimately successful bid, they found that target shareholders gain 31.77% and bidder shareholders gain .97% at the announcement of the tender offer. The value weighted portfolio of matched targets and bidders gains is 7.43%. This study concluded that tender offers generate synergistic gains and lead to a more efficient allocation of corporate resources.

Seth (1990a) empirically examined how value is created in different acquisition types. This study employed a two-tiered approach to examine the sources of value creation in acquisitions. Firstly it involved partitioning the relative importance of value creation from changes in operating or financing decisions versus changes from financial diversification. Secondly a cross-sectional multiple regression analysis was conducted to distinguish between value creation from changes in operating decisions and from changes in financing decisions. However this study should have defended about the robustness of its methodology used. Taking a sample of 102 tender offers

[1] Tender offer is a takeover bid in the form of a public invitation to shareholders to sell their stock, generally at a price above the market price.

from 1962 to 1979 this study concluded that decreases in systematic risk (financial diversification) do not play a major role in value creation. Moreover the author also concluded that in case of related acquisitions synergistic gains are primarily associated with large relative size of the target to the bidder. This study finally concluded that different sources of value creation operating in related and unrelated acquisitions create similar magnitudes of synergy. In this paper synergy in an acquisition is said to exist when the value of the combined entity exceeds the sum of the values of the two combining firms. Clearly this study also reveals synergy from the market for corporate control.

Seth (1990b) provided a conceptual framework to assess the extent of value creation in acquisitions. In this study each pair of combining firms was considered as single entity. The time series of combined returns were used to estimate pre-acquisition market model coefficients for each pair of combined firms. Synergy gains are measured in terms of the difference between the values of the combined firm after all gains are incorporated into stock prices and (hypothetical) combined values of the two firms had there been no acquisitions. The empirical results indicate that related acquisitions create more value than unrelated acquisitions on average. However it can be argued that this result may not be generalised since it might be limited to only the data set included in this study.

Andrade et al (2001) performed a comprehensive analysis of the target, bidder and combined returns in a sample of 3688 U.S. mergers from the period 1973 to 1998. The evidence shows that target shareholders are winners (earned positive returns) in M&A and their returns are fairly stable across all decades. The target shareholders gain both in the 3 day event window around the merger date as well on the event window which expands 20 days prior to merger announcement and end on the merger closing date. However the evidence on bidder shareholders is not clear. Both the 3 days and the 21 days event window give negative returns to bidder shareholders which is however not statistically significant. Therefore the results indicate that bidder shareholders may not be losers in M&A but clearly they are not as big winners as the target shareholders. The combined return to target and bidder shareholders is roughly 2 percent across both the event windows. This study therefore concluded that overall M&A create value to the shareholders. The results from this study are quite consistent with the empirical evidence of Jensen and Ruback (1983) discussed above.

From the empirical evidence obtained so far it is found that target shareholders gain significantly and wealth is created at the announcement of takeovers. However the empirical evidence on bidder returns is ambiguous. Fuller et al (2002), used a sample of takeovers from 1990 to 2000 in the US to study how the returns to bidders making bids for public, private and subsidiary targets, using cash and stock, vary by these characteristics. This study controlled for acquirer characteristics which imply that the same bidder will often choose to acquire targets with varying ownership status and with different payment methods. The purpose was to examine the variation in acquirer returns as a function of these bid characteristics. Using traditional event study methodology the results show that shareholders of the acquiring firms gain when acquiring a private firm or a subsidiary of a public firm and lose when buying a public firm. Moreover the gain or loss is greater in absolute value when the target is larger and when the bidder uses stock. The authors attributed these findings to the fact that when bidders acquire private firms or subsidiaries, they are purchasing assets in a relative illiquid market. Thus higher returns to bidder shareholders reflect a liquidity discount. Furthermore this study interpreted the higher bidder returns for stock due to the fact that when the targets receive stock compensation it delays their tax liability and so they may even accept a lower price. So even in this paper we find the gains to bidder shareholders are not unanimous

U.K. empirical evidence of synergy motive behind M&A

While the studies reviewed above looked into the US M&A Frank and Harris (1989) studied the effects of takeovers on shareholder wealth in the period 1955-1985 in the UK. The data was collected from London Share Price Database. Using the event study methodology this study calculated monthly abnormal returns for the bidders and targets firms over a six-month period (-4 months, +1month) around the merger date. The results showed that around merger announcement date target company shareholders gain 25 to 30 percent and bidder earns zero or modest gain. Moreover target shareholder gains and merger benefits appear to be higher in revised or contested bids. The study finds higher target wealth gains when bidders hold a pre-merger equity interest. There is no strong evidence however, that revised bids, contested bids, or pre-merger equity interests affect bidder gains around the merger date. Thus we can see that the UK results are quite similar to the US studies of Bradley et al (1988) reviewed above..

In summary all the empirical evidence reviewed above shows that M&A on average generates wealth for the combined target and bidder shareholders. This evidence supports the synergy and efficiency theory of mergers. None of the studies reviewed in this section however have classified their sample in terms of regulated and non regulated industries. This classification and subsequently the comparison of the results obtained, is important since after 1990 increasing number of utility companies across the globe is entering into the market for corporate control. This study therefore proposes to address this gap in literature.

3.1.2 Agency or the managerialism hypothesis

The managerialism hypothesis or agency hypothesis posits that managers knowingly overpay in takeovers as they embark on acquisitions to maximise their own utility at the expense of their firm's shareholders (Seth et al, 2000; Berkovitch and Narayanan, 1993; Fernandez and Baixauli, 2003). Managerial compensation is frequently tied to the amount of assets under their control so they like to seek higher rates of growth in assets rather than profits (Marris, 1964). The review of extant literature show several motives for agency or managerialism. The important motives are diversification of management's personal portfolio (Amihud and Lev, 1981), use of free cash flow to increase the size of the firm (Jensen, 1986), and acquiring assets that increase the firm's dependence on the management (Shleifer and Vishny, 1989). It will be interesting to see whether this motive is present behind the M&A of utilities.

3.1.3 Free Cash Flow Hypothesis

Jensen's (1996) free cash flow motive assumes that managers and owners have a conflicting interest. Managers may attempt to maximise their personal utility at the expense of the shareholders' wealth through the accumulation of free cash flows. They may retain these free cash flows within the firm to advance their personal goals.

To eliminate inefficiencies from retaining these cash flows, a bidder firm takes over the target firm and distributes the free cash flows back to owners, or invests them in positive net present value projects elsewhere. Thus, the takeover serves as a market mechanism to resolve, or at least reduce, the manager-owner conflict of interest in Jensen's paradigm. It will be interesting to see whether this motive is present behind M&A of utilities which are subjected to economic regulation

3.1.4 Winner's curse or hubris hypothesis

The hubris hypothesis first coined by Roll (1986) maintains that acquisitions are motivated by managers' mistakes due to overconfidence and that there is no synergy gain from takeovers. Managers of the bidding firms engage in takeovers because they overestimate the target firm's assets. Roll (1986) attempted to interpret the empirical results from various extant literatures in terms of hubris hypothesis. This study took previous empirical evidence about target firms, total gains and bidder firms to draw support of the hubris hypothesis. Evidence of target firms displaying increases in value and later falling back to original level in case of unsuccessful mergers (Bradley et al, 1983b, Asquith, 1983) are consistent with the hubris hypothesis. Moreover this study posits that empirical evidence about gain of the combined firms are small and insignificant (Bradley et al, 1982, 1983a; Firth, 1980; Varaiya, 1985). This mixed evidence casts doubt on synergy and gives support to hubris hypothesis. Furthermore various empirical papers viz. Eckbo, 1983; Malatesta, 1983; Dodd, 1980; Eger, 1983; show fall in share price of the bidding firms following merger announcement. This again is consistent with hubris hypothesis. The extant studies provide a number of empirical evidence on the presence of hubris motive behind corporate control and therefore it is important to extend this argument in regulated industries in order to test whether it is present even in this sector.

The empirical evidence reviewed in section 3.2 so far is depicted in the following table.

Table 2

Empirical evidence of M&A

Research Paper	Results
Jensen and Ruback (1983)	Target shareholders gain and bidder shareholders roughly break-even
Bradley et al (1988)	Target shareholder gain is 31.77%, bidder gain is 0.97% and the combined gain is 7.43%
Seth (1990a)	There is synergy gain from M&A
Seth (1990b)	Related acquisitions create more value than unrelated acquisitions on average
Andrade et al (2001)	Target shareholders' return is positive and very high while bidder return is very small and negative and the combined return is positive and roughly 2%
Frank and Harris (1989)	Target shareholders' gain is positive while bidders just break-even
Fuller et al (2002)	Bidders gain when they acquire a private firm or a subsidiary of a public firm and lose when the buy a public firm. Moreover the gain or loss

	is larger in absolute value when the target firm is larger and when the bidder uses stock as the method of payment
Amihud and Lev (1981)	Managerialism or agency motive is a result of diversification of management's personal portfolio
Jensen (1986)	Agency motive is a result of the use of free cash flow to increase the size of the firm
Shleifer and Vishny (1989)	Managerialism motive is a result of acquiring assets that increase the firm's dependence on the management
Jensen's (1996)	Takeover serves as a market mechanism to resolve, or at least reduce, the manager-owner conflict of interest by transferring the free cash flows held by the managers to the target firm or to invest in positive net present value projects
Roll (1986)	Acquisitions are motivated by managers' mistakes and that there is no synergy gains from takeovers

3.1.5 Synergy, Agency or Hubris?

In the last three sections the extant studies reviewed have either studied the synergy or agency or the hubris theory of corporate takeovers. This section reviews studies that distinguish between these three theories on M&A.

Berkovitch and Narayanan (1993) distinguished the three major motives for takeovers: synergy, agency and hubris. The data involved were a sample of U.S. tender offers between 1963 and 1988. Seth (2000) looked into these three motives by studying the cross border M&A, specifically foreign acquisitions of US firms. The agency motive termed by Berkovitch and Narayanan (1993) is referred to in this study as "managerialism". Both these studies have used event study methodology to estimate the abnormal returns of the acquirer and target firms. These studies looked into the correlation between target, acquirer and total gains to examine whether a takeover is motivated by synergy, agency or hubris. Synergy hypothesis implied positive correlation between target and total gains, the agency hypothesis implied a negative correlation while the hubris hypothesis implied a zero correlation. Due to large size discrepancies between acquirers and targets cumulative abnormal returns (CARs) could not be used to estimate the relationship between gains to target and acquirers or gains to targets and to the combined firm. Therefore both these studies have used dollar gains to estimate these relationships. The study of domestic M&A by Berkovitch and Narayanan (1993) and cross border study of M&A by Seth (2000) showed that synergy hypothesis dominates both the types of M&A. Moreover both these studies also found the presence of agency/ managerialism and hubris motive behind M&A subsample of negative total gains. However Berkovitch and Narayanan (1993) found that in takeovers with positive total gains, the total gain increases with competition (that is multiple bid) for the target while in takeovers with negative total gains, the total gain decreases with competition. The authors interpreted this result by the fact that competition is motivated by agency rather than by true synergy. Quite contrary to this finding Seth (2000) found that positive total gains or negative total gains are independent of whether a bid is characterised by a bidding contest or not. This study further found that competition between the different bidders to acquire a particular target does not have a significant impact in the market for corporate control on total dollar gains and gains to acquirers and targets. Therefore acquisitions that are motivated by synergy are equally likely to be subject to bidding contests as those motivated by managerialism. Furthermore the result shows a positive impact of competition on the magnitude of total gains. The author attributed this to synergy rather than hubris hypothesis. The difference in result between these two studies under multiple bids might be due to the difference in sample selection as Berkovitch and Narayanan (1993) looked into domestic M&A while Seth (2000) looked into cross border M&A. Therefore it can be interpreted that the result for multiple bids is not generic and it is more country specific.

The result about the pattern of gains from takeovers as revealed by the above two studies can be shown as follows

Table 3

	(1)	(2)	(3)
	Total Gains	*Gains to Target*	*Gains to Acquirer*
Efficiency or synergy	+	+	+
Hubris (winner's curse, overpay)	0	+	-
Agency or managerialism	-	+	-

Fernandez and Baixauli (2003) identified the main motives for inter-firm investment in the Spanish Stock Market. In particular this study tests the hypothesis that the main motivation for a partial acquisition corresponds to one of the three types similar to synergy, agency and hubris. This study has calculated abnormal returns to determine the gains derived from the announcement of partial control and their distribution between the acquiring firms' and target firms' shareholders The correlation between the gains are calculated by means of traditional statistic and bootstrap simulations. Moreover this study has also made an individual analysis of the acquisitions made by banks. The results showed that synergy motive predominated in the sample of investments analysed, especially in operations that produce total positive gains. Hubris motive is present in the investments with negative total gains. The results for the acquisitions made by banks are analogous and same motives appeared to predominate. Moreover the result showed that investments where more than 5% of target equity has been purchased, synergy motive is predominant while investments giving less than 5% control no clear motive could be identified. However agency motive did not appear in this study because internal control mechanisms predominated in the Spanish corporate control market.

From the three studies above it is evident that synergy was the dominant motive for M&A although agency or hubris motives have not been completely ruled out. This empirical evidence is also interesting since this result is not limited to U.S. M&A alone. This is because apart from the study of Berkovitch and Narayanan (1993), which has used only U.S data the other two studies by Seth (2000) and Fernandez and

Baixauli (2003) have used non U.S data as well. The studies reviewed in this section are quite effective in showing how the relation between target returns and acquirer returns can be interpreted in terms of the three prominent motives/hypotheses behind M&A. It is however imperative to examine whether these results also holds true in regulated industries. This is because regulated industries were subjected to M&A in Europe only in the last decade and therefore it is important to analyse the motives behind these M&A. This research aims to address this important gap.

3.1.6 The internalisation hypothesis

The internalisation theory states that in case of cross border mergers and acquisitions direct foreign investment will flow from a technologically more advanced to a less advanced country (forward internationalisation) (Eun et al, 1996). The reverse is called backward internalisation. Eun et al (1996) tested the synergy and internalisation hypothesis for international acquisitions using a sample of foreign acquisitions of U.S. firms during the period 1979-90. This study looked into the effects of foreign acquisitions of U.S. firms on the shareholder wealth of both acquiring and acquired firms. This study used an event study analysis to look into the abnormal returns of the targets and acquirers across different event windows. This study found that cross-border acquisitions are generally value creating corporate activities. Shareholders of most of the U.S targets and foreign acquirers experienced significant positive wealth gains supporting the synergy hypothesis. The magnitude of wealth gains however varied substantially across countries of acquirers. The Japanese acquisitions generated largest wealth gains. In contrast the British acquisitions of U.S. firms produced no net wealth gains on average and involved a transfer of wealth from acquirer shareholders to target shareholders. The synergy hypothesis was thus rejected for the British subsample. This study attributed this difference in result to the different R&D/sales ratios. Moreover this study cited previous studies to suggest that a firm's R&D /sales ratio may indicate not only the firm's R&D intensity but also the quality of management. This study interpreted that Japanese firms are likely to face positive investment opportunities (high R&D/sales ratio) and hence their decision to acquire U.S targets were viewed positively by the stock market. Conversely the poorly managed (low R&D/ sales) British firms, which tend to acquire less R&D intensive targets, are likely to face limited investment opportunities and thus undertake negative NPV projects. Hence their decision to acquire U.S targets was viewed negatively in the stock market. Furthermore the results of the cross-sectional regression are consistent with the premise that one source of synergy for the acquirers was the reverse-internalization (internalization hypothesis) of the R&D capabilities of the U.S targets. The internalisation hypothesis posited in this paper is an important contribution in the M&A theory and this thesis aims to test this theory in the context of M&A in utilities.

3.1.7 Diversification Motives

Diversification may be sought by managers and other employees for preservation of organizational capital and for financial and tax advantages (Weston et al, 1998). Singh and Montgomery (1987) investigated whether corporate acquisitions which are related in product/market or technological terms generate higher value than unrelated acquisitions. The hypotheses posited in this study reflect that related acquisitions will generate higher synergies than unrelated acquisitions. This study used the event study methodology to calculate the abnormal returns of the target and the bidding firms surrounding the acquisition announcement. Synergistic gains have been estimated by calculating the sum of the abnormal dollar value change of the acquiring and the bidding firms as a result of acquisition announcement. The results confirm the hypotheses that related acquisitions generate more synergies than unrelated acquisitions. The authors attributed this result to the fact that related acquisitions generate superior economic performance through a combination of supplementary or complementary resources. However this study also provided a caveat to the managers of acquiring firms by stating that unless they set an appropriate pricing mechanism much of the gains of the acquiring firms may get transferred to the target firms in the bidding process. This thesis therefore aims to test this motive in the context of European utilities.

3.1.8 Long run stock price performance following mergers

The event study evidence that has been reviewed so far is based on narrow windows around merger announcement dates. This is so because the efficient market hypothesis maintains that any new information tied to an event such as a merger announcement will be incorporated into market prices quickly and accurately. However as Agrawal et al (1992) state that any long run underperformance following mergers is inconsistent with the efficient market hypothesis. A burgeoning body of empirical research has applied event study techniques over much longer periods of time. Agrawal et al (1992) provided a long term stock market analysis of the post merger performance of acquiring firms in US from 1955 to 1987. They presented evidence on effects of firm size effect and beta risk. The methodology adopted in this paper follows the methodology of (1) Demson and Marsh (1986) and Lakonishok and Vermaelen (1990) and (2) the Ibbotson (1975) RATS model. The first methodology involves calculation of abnormal returns by first calculating abnormal performance for individual stocks, then averaging the abnormal performance for all firms in an event month, and finally adding the monthly performance over 60 months. This procedure gives equal weight to all firms. The second method combines the returns across time and securities with an adjustment for firm size. The performance of long-run returns over several years can be significantly affected by firm-size effect. The above methodology have taken into account this issue unlike Fama et al (1969) event study, which measure stock performance after subtracting a benchmark return based on beta risk. The results showed that stockholders of acquiring firms suffer a statistically significant wealth loss of about 10% over the five years following the merger completion. Thus from this result it can be interpreted that bidder returns which are either negative or zero in short run event study around the announcement period returns is also true in the long run. Moreover from this study it is also clear that post acquisition abnormal returns are inconsistent with the efficient market hypothesis which states that long term price performance following a merger is insignificantly different from zero (Jensen and Ruback, 1983).

Loughran and Vijh (1997) examined the long run post acquisition returns in the context of shareholder wealth gains from 947 acquisitions. The methodology adopted in this study is equally weighted buy and hold returns. This study argues that the monthly rebalancing of portfolios adopted in Agrawal et al (1992) discussed above, may not be a good estimate of how a buy-and-hold strategy performs over five years. Therefore this study measures abnormal return by the difference between five-year holding period returns of sample stocks and matching stocks (chosen to control for size and book-to-market effects). This study also reports abnormal returns realized by an annual rebalancing strategy. The result indicates that acquirer stock returns are greater than matching stock returns in case of tender offers and where cash is used as a method of payment. On the other hand acquirer returns are smaller than matching stock returns in case of mergers and where stock is used as a method of payment. This result is also significant. The study attributed this result to the fact that since tender offers are hostile to incumbent managers so post merger wealth gain takes place by appointment of efficient managers. From the evidence on acquirer returns it is evident that the efficient market anomaly stated by Jensen and Ruback (1983) is not resolved. Moreover acquirers are likely to use cash payment when their stock is undervalued compared to their industry peers and stock payment when they are overvalued compared to their industry peers. This study has also examined the wealth gains of target shareholders from stock mergers by combining the pre-acquisition and post-acquisition returns. The result shows that target shareholders gains when they sell out soon after acquisition effective date but lose if they hold on to acquirer's stock received as payment. This evidence is quite new and contradictory to the vast financial literature on M&A which states that target shareholders gain from all acquisition types. However this paper did not provide an answer as to why the market does not react efficiently to the likely wealth gains on the acquisition effective date.

From the review of the study above it can be observed that both Agrawal et al, (1992) and Loughran and Vijh (1997) questioned the consistency of the efficient market hypothesis. In similar lines Shleifer and Vishny (2003) presented a model of M&A based on stock market mis-valuations of the combining firms. The fundamental assumption made in this model is that financial markets are inefficient, so some firms are valued incorrectly. In contrast, managers are completely rational, understand stock market inefficiencies, and take advantage of them, in part through merger decisions. Mergers in this model are a form of arbitrage by rational managers operating in inefficient markets. This theory is in a way the opposite of Roll's (1986) hubris hypothesis of corporate takeovers discussed above, in which financial markets are rational, but corporate managers are not. In this paper synergy gain of the target and bidder firms from the merger is defined in terms of the difference between combined equity per unit of capital of the merged firm with the market capitalisation of the target and bidder firms in the pre merger period. This study uses a simple model of acquisitions, which incorporated the choice of medium of payment, the valuation consequences of mergers and merger gains to understand the synergy gains from mergers. A key aspect of the theory is the bidder's choice of cash versus stock. Cash is used when the target is undervalued, and stock is used when the bidder is overvalued. An implication of the theory is that the long term stock price performance following a cash-financed acquisition will be positive, and the long-term price performance following a stock acquisition will be negative. This is an important contribution of this study to the long run empirical evidence on M&A. It is important however to extend this study to the theory of M&A in regulated industries and this is one of the aims of this research.

The long run post merger returns reviewed in this section has been summarised in the following table

Table 4

Long run stock price performance following mergers

Research Paper	Results
Agrawal et al, 1992	Bidder shareholders suffer significant wealth loss of about 10% over the five years following the merger completion
Loughran and Vijh, 1997	Acquirer stock returns are greater than matching stock returns in case of tender offers and where cash is used as a method of payment. Acquirer stock returns are smaller than matching stock returns in case of mergers and where stock is used as a method of payment
Shleifer and Vishny, 2003	Long term stock price performance following a cash-financed acquisition will be positive, and the long-term price performance following a stock acquisition will be negative

The empirical studies on the long run stock price performance show that whether shareholders gain in the long run or not depends on acquisition type (merger or tender offer) and method of payment Loughran and Vijh (1997), Shleifer and Vishny (2003). Therefore it can be argued that the reason why the long run study was conducted at the outset which was to question the validity of the efficient market hypothesis (Agrawal et al, 1992) is no longer viable. Moreover he three studies reviewed in this section have either taken sample from non regulated industries (Agrawal et al, 1992 and Loughran and Vijh, 1997) or have provided general theoretical framework of M&A (Shleifer and Vishny, 2003). Therefore an important scope for further research is to examine long run stock price performance in industries which are subjected to economic regulation and this is one of the objectives of this research.

3.2 Mergers and Acquisitions of utilities

The previous section reviewed the empirical evidence of M&A and their motives both in the short and long run. However the data used in all of the above studies come from industries which are not subjected to any kind of economic regulation. It is difficult to assume therefore that the results of the studies reviewed above will also hold true in industries which are economically regulated such as utilities sector. Therefore in this light this section aims to review empirical evidence on the impact of M&A of utilities on shareholder wealth. Literature on M&A in utilities can be broadly classified into two groups. The first group studies the stock market reaction following M&A in utilities and the second group looks into the motives behind these M&A

3.2.1 Empirical evidence on stock market reaction following M&A in utilities

This section reviews the empirical literatures on the stock market performance following M&A in utilities. The review shows that studies on M&A in utilities were mostly focused on U.S data and it is limited to only a few industries like electricity and gas industry.

Mergers and acquisitions (M&A) of utilities are unique in the sense that these firms are under regulatory scrutiny and therefore managers of these firms have to demonstrate tangible economic benefits for customers in order to obtain appropriate regulatory approval (Bertunek et al, 1993). Moreover this study also posits that due to the regulatory influence acquisitions are more complicated and slower for utilities than for unregulated companies. Furthermore Norris (1990) identified that realized savings and efficiencies (value enhancement) resulting from acquisition are more often passed on to ratepayers, through rate reductions and the utility companies are seldom allowed to retain them and thereby increase their shareholder value. Utilities also have substantial cash obligations in the form of common stock dividends and hence they have less free cash flow to purchase marginal targets (Berry, 2000). Thus shareholder reaction to acquisitions by public utilities could be less pronounced than for acquisitions by non-regulated firms since shareholders may not expect to share the expected benefits resulting from the acquisition. The following studies have looked into the stock market reaction of the utility companies which were involved in M&A.

The empirical evidence of M&A in utilities suggest that in line with empirical evidence of M&A in non regulatory industries target shareholders gained from M&A while bidder shareholders suffered losses (Bertunek et al, 1993; Berry, 2000; Leggio and Lien , 2000). Bertunek et al (1993) further showed that stock prices of the regulatory companies engaged in M&A did not perform well compared to firms in non regulatory environment. The target shareholders gained but it was less than the firms in non regulatory industry. The acquiring shareholders suffered losses and these losses were greater than the losses incurred by the acquired firms in industries that are not subjected to any economic regulation. However the combined gains were positive. This result is due to the unique characteristics of the utility companies which are always under regulatory scrutiny (Bertunek et al, 1993; Leggio and Lien, 2000). Another implication of this result is attributed to the fact that M&A in utilities take place for the ratepayers' best interest rather than the interest of the shareholders (Leggio and Lien, 2000).

Literatures on industries that are not subjected to any economic regulations, report that corporate diversification through M&A reduces the value of the shareholders while corporate focus increases shareholder value (Healy, Palepu and Ruback, 1992; Lang and Stulz, 1994; Berger and Ofek, 1995; and Jarrell, 1995; Singh and Montgomery, 1987). Studies in M&A of utilities however showed that the market reacted more positively for diversifying M&A of utilities compared to non-diversifying M&A of utilities (Bertunek et al, 1993; Burns et al, 1998; Berry, 2000; Leggio and Lien, 2000). A number of interpretations of this result have been provided in empirical literature on M&A in utilities. Firstly the empirical evidence attributed this corporate focus anomaly to the fact that regulations placed on utilities force value maximising managers to seek out acquisitions of other utilities outside their own primary business rather than horizontal acquisitions (Burn et al, 1998). Secondly these gains primarily occur because of attractiveness of "one-stop" shopping for energy services, overlap in distribution territories, and opportunities for electric utilities to learn from deregulated experiences of natural gas utilities (Berry, 2000). Leggio and Lien (2000) further found that the nature of a regulatory industry and the fact that mergers requires approval from regulators as well as shareholders also contribute to this result.

The empirical literature on M&A of utilities showed that the combined gains of the utility firms were positive (Ray and Thompson, 1990; Bertunek et al, 1993; Burns et al, 1998; Berry, 2000; Becker-Blease et al, 2007). However Leggio and Lien (2000) found that although the target shareholders gained under diversifying acquisitions but these gains were dwarfed by the losses incurred by the acquirer shareholders. As a result this study showed that the total gains were negative for utilities engaged in diversifying acquisitions. This study also looked into the long run stock price performance of utility companies from 1992 to 2002 to explore the connections between merger activity and deregulation by examining M&A that followed the deregulation of the U.S. electric utility industry in the 1990s. The result showed that the long run post-merger buy and hold returns of the utility companies are either same or worse than control sample. Long run operating performance also shows similar result. This result is quite in line with the empirical evidence of long run stock price performance in non regulatory sector reviewed in section 3.1.8 (Agrawal et al, 1992; Loughran and Vijh, 1997; Shleifer and Vishny, 2003).

While the above authors studied a sample of U.S. utilities and investigated the stock market reactions to M&A Parisi and Yanez (2000) made a case study on the effect of the announcement of the tender offer by Endesa Espana, the bidding company, on the stocks of the Chispa[2] companies, the target companies holding controlling interest in Enersis. This announcement is the most controversial case of takeovers to occur in Chile after the privatisation process that took place during the 1980s. Event study methodology has been applied to calculate the abnormal returns of the target firms. The event study results in M&A of U.S utilities reviewed above showed that target companies always have gained from M&A. This result is also consistent with the studies of M&A in non regulatory industries in the UK and US (Dodd and Ruback, 1977; Jarrell and Poulsen, 1994; Jensen and Ruback, 1983; Bradley et al., 1988, Jarrell et al., 1988;, and Schwert, 1996). However in this study the result showed absence of positive cumulative abnormal returns for Chispa stockholders during the takeover bidding event window. Furthermore, there are cumulative abnormal losses during a period of 49 days, around the preparation of the tender offer by Endesa Espana for the Chispa companies. This resulted in an absolute equity loss for Chispa, Enersis and Endesa Chile stockholders for the period of the event. The authors attributed this anomaly in the results to the governance structure of the target firm. Moreover the authors also concluded from this result that the theory and expectations of corporate control and governance structure derived from research in the UK and US are different from that of the developing countries. However from the study of one emerging economy is it difficult to ascertain the case of other emerging economies.

The empirical studies reviewed in this section has been summarised in the following table. The first column represents the names of the author, the second column represents the country which the sample included and the third column gives the result.

[1]Chispa companies" is a generic name given by the Chilean market to five Chilean investment companies whose main investments at the time of the takeover were in Enersis stocks

Table 5

M&A in utilities

Research Paper	Country	Results
Bertunek et al (1993)	U.S.	Combined wealth effect positive and significant
Berry (2000)	U.S.	Targets gain and acquirers losses but net gain positive
Burns et al (1998)	U.S.	Diversifying acquisitions gain more than non diversifying acquisitions
Leggio and Lien (2000)	U.S.	Diversifying acquisitions gain less than non diversifying acquisitions
Becker Blease et al (2007)	U.S.	Shareholders gain in the short run but the long run shareholder gain and long run operating performance are same or worse than the control sample
Parisi and Yanez (2000)	Chile	Both the target and acquirer shareholders earned negative returns following acquisition announcement

From the empirical evidence obtained in this section it is clear that there are very few studies of M&A in utilities outside U.S. The U.S. result suggests that target gains from M&A in utilities are large and significant while acquirers gains are either minimal or zero (Bertunek et al, 1993; Berry, 2000; Burns et al, 1998). However the empirical evidence of shareholder gains in Chilean market is quite contrary to the U.S. result as reported above by Parisi and Yanez (2000). Moreover from the study of long run post merger performance of Becker-Blease et al (2007) it is evident that although there are short run synergy gains from utility M&A the long run post-merger buy and hold returns of the utility companies are either same or worse than control sample. Long run operating performance also shows similar result. Furthermore the empirical studies showed mixed evidence on the shareholder performance of utility companies that acquired firms in a different line of business. While the empirical studies of Bertunek et al, 1993; Burns et al, 1998; Berry, 2000 showed that capital markets assessed diversifying acquisitions more favourably in utility industry the studies by Leggio and Lien (2000) and Becker-Blease et el (2007) showed that the returns are more favourable for non diversifying acquisitions than for diversifying acquisitions. However, considering that most of the literature reviewed provides evidence on US and other non-European markets, it leaves a gap in empirical examination of the shareholder wealth impact following M&A in utilities in Europe. The research question that follows from this gap is how the M&A of European utilities will affect on the shareholder wealth. This research therefore proposes to address this gap. Moreover this research also will help to make comparison between the impact of M&A in utilities in the US and Europe which will surely have important policy implications.

3.2.2 Motives behind utilities' mergers and acquisitions

This section presents the empirical literature on the motives behind the M&A of utilities. Takeovers among electric utilities are usually justified by the management as a means of effecting increased efficiency, through operative synergetic effects resulting from economies of scale and scope (Eckbo, 1983). Empirical evidence suggests that synergy is one of the predominant motives behind M&A of utilities (Ray and Thompson, 1990). This study used four U.S. case studies of electric utility mergers. The effects on the ratepayers in most cases were either favourable or neutral but in no cases were the potential gains to ratepayers enormous. The authors attributed this result to the fact that much of the economic benefits of mergers were transferred to the ratepayers in the form of lower rates. The study concludes that given the variety of motives for merging and the distribution of the economic effects of mergers, the regulatory system serve as a good control on preventing undesirable mergers. This study however has not provided any argument on how the motives behind utility mergers are affected by the regulatory environment. This is particularly important in the context of M&A of utilities since these industries were once considered natural monopolies. The aim of this study will be therefore to interpret the results of stock market reactions following M&A in terms of regulatory environment in which it operates.

Empirical evidence on the study of takeovers of UK regional electricity companies (RECs) by US utilities suggests that the principal motivations for the US companies to enter into the UK electricity market were growth strategy and revenue generation, market entry, organizational and financial synergy and the risk of diversification (Ghobadian et al, 1999). This study also found a variety of disincentives that deterred some of the US companies to enter into the UK electricity market. Ghobadian and Viney (2000) further analysed the reasons for the retreat of some of the US companies from the UK electricity market. Drawing data from archival sources they concluded that the main reason for the retreat of these US companies is the failure of the UK market to live up to the expectations of these investing companies. This failure is attributed to external factors, market failures and actions of competitors. External factors here refer to the then Labour Party's levy of 'windfall tax' upon the monopoly profits of the companies of the ESI which the US companies' argue have prevented a level playing field for business in the UK. In this paper the authors refer to market failure as the fall in consumption of electricity, which in turn prevented the creation of real market opportunities to the US companies. The action of the competitors here is the failure of these US companies to form synergistic unions with other US companies in the UK market. The authors have also argued that some of the US companies were unable to defend a global presence and also some of the UK acquired companies were resistant to the precise strategies that the US companies were seeking to develop.

Literature on M&A of utilities in continental Europe showed that a considerable number of utility companies are consolidating in Europe's utility market in order to strengthen its geographic position, gain a fast entry in a new market and to gain access to end customers (Allas, 2001). This study suggested that most of the M&A deals were overpriced. The reasons cited for these premiums were mostly associated with strengthening of geographic position, fast entry into a new market and access to end customers. Freytag et al (2005) found that the primary motive behind M&A of utilities is to increase the market power. This study looked into the M&A of utilities by taking 70 takeovers of US and 69 takeovers of German energy utilities between 1990 and 2002. The market value of the acquiring firms and their competitors rose on the day of the takeover merger announcement suggesting that competitors perceived the takeover as a potential to increase market power.

The studies reviewed in this section has been summarised in Table 3.

Table 6

Motives behind M&A in utilities

Research Paper	Country	Results
Ray and Thompson (1990)	U.S.	Primary motive is synergy although managerialism motive is also prominent for some mergers
Ghobadian et al (1999)	U.K.	Principal motivations were growth strategy and revenue generation, market entry, organizational and financial synergy, risk diversification
Ghobadian and Viney (2000)	U.K.	Reasons for retreat were external factors, market failures and actions of competitors
Allas (2001)	Europe	Strengthen of geographic position, gain a fast entry in a new market and to gain access to end customers
Freytag et al (2005)	U.S. and Germany	German energy market has a higher potential to increase market power compare to the US market through M&A

From the review of the empirical literature in this subsection it can be seen that synergy is one of the important motive for M&A in the utilities although presence of other motives like managerialism, growth strategy, revenue generation and risk diversification are also evident (Ray and Thomson, 1990; Ghobadian et al 1999). The study of Allas (2001) and Freytag et al (2005) shed some light on the effect of M&A in utilities in continental Europe. Freytag et al (2005) also brings forth another important motive behind M&A, which is market power. However the empirical literature reviewed in this section does not make any comparison of the motive behind the M&A of utilities with motives of general M&A in other non regulated industries. This is an important gap in the empirical literature which this research aims to address. This comparison is important in order to see whether the mergers in regulated industries are taking place due to the same reasons as in the non-regulated industries. This research aims to address this gap.

3. Critique of the extant studies

Section 3 reviewed the different theories and empirical evidence on M&A in general and M&A of utilities in particular. This section provides a critique of the studies discussed in Section 3 and identifies the gap in empirical literature within this area of research.

In section 3.1 the empirical evidence on the motives behind the M&A has been reviewed. Some of the literatures only looked into any one motive like synergy (Bradey et al, 1988; Seth 1990a; Seth, 1990b; Franks and Harris, 1989; Andrade, 2001; Fuller, 2002) or hubris (Roll, 1986), while some other studies like Berkovitch and Narayanan, 1993, Seth 2000, and Fernandez and Baixauli, 2003 looked into all the predominant motives viz, synergy, hubris and managerialism. Moreover from the review of the studies in section 3.1 it is seen that the empirical literature is unanimous in its conclusion that takeovers create value for the target and bidder shareholders combined, with the majority of gains accruing to the target shareholders. Generally, these studies have found that shareholders of target firms invariably receive large premiums relative to the pre-announcement share price (Moeller et al, 2004; Asquith and Kim, 1982; Jensen and Ruback, 1983). For Instance Jarrell and Poulsen (1989) and Mulherin and Boone (2000) report average U.S. target abnormal returns of 29% (for 1963-1986) and 21% (for 1990-1999), respectively. Similar to their U.S. counterparts U.K. and Continental European targets gain average announcement returns of 24% during the period 1955-85 (Franks and Harris, 1989) and 13% in 1990-2001 (Goegren and Renneboog, 2004). The empirical evidence also shows considerable contrast between the large share price return of target firms and the frequently negligible returns of bidding firms. The returns to bidder companies are either negative or zero (Moeller et al, 2004; Jensen and Ruback, 1983; Malatesta, 1983). With regard to the combined returns being positive or negative, Mulherin and Boone (2000) find that the average dollar returns around the announcement date slightly offset the negative dollar returns to bidders in other words mergers create value for diversified investors. Bradley, Desai and Kim (1988) also report similar results.

The extant studies also revealed that shareholder gains in the long run depend on the method of payment and acquisition type (Loughran and Vijh 1997; Shleifer and Vishny 2003). However none of these studies have looked into the long term shareholder value performance of the European utilities that were subjected to M&A. Thus one potential gap is to study the long run share price performance these European utilities.

The review of literature has shown that while there is a plethora of academic research on the M&A, little financial literature is found that examines M&A phenomenon in utility industries. The empirical evidence in section 3.2.1 has shown that target gains from M&A in utilities are large and significant while acquirers gains are either minimal or zero (Bertunek et al, 1993; Berry, 2000; Burns et al, 1998). From the study of long run post merger performance of Becker-Blease et al (2007) it is evident that although there are short run synergy gains from utility M&A the long run post-merger buy and hold returns of the utility companies are either the same or worse than the control sample. Long run operating performance also shows similar results. This result is quite contrary to the result obtained by Healy et al (1992) and Andrade et al (2001) using a sample of general M&A which was reviewed in section 3.1.8. Moreover the empirical studies showed mixed evidence on the shareholder performance of utility companies that acquired firms in a different line of business. Furthermore from the literature reviewed in section 3.2.2 it is evident that synergy is one of the important motive for M&A in the utilities although presence of other motives like managerialism, growth strategy, revenue generation and risk diversification are also evident (Ray and Thomson, 1990; Ghobadian et al 1999). It is also evident from section 3.2 that most of the empirical literatures on M&A in utilities are U.S. studies with only one study of non U.S. found so far. However during the 1990s utilities in the U.K. and Continental Europe were subjected to deregulation and privatisation. This has brought a wave of consolidation in the European utilities.

Therefore one potential and significant gap in literature is the study of shareholder value improvement following the M&A of the European utilities.

From the review of the literature it is also evident that none of these studies explicitly considered mergers in a post deregulation setting where an industry has undergone structural changes. This structural distinction is important because restructuring may make it possible to obtain efficiencies through mergers that were discouraged or prohibited under regulation. With restructuring these protections and restrictions were removed to a great extent making it possible for potential efficiencies if they existed, to be captured and "inefficient" utilities if they existed to be acquired and become part of a more efficient company.

4. Research Questions

A potential gap that has evolved from the review of the literature is that both the short run and long run performance of the European utilities that were subjected to M&A have not been researched in earlier studies. Performance here refers to the short and long run shareholder value creation following M&A in utilities as well as long run post operating performance of the utility companies following the M&A. It is widely believed that the introduction of the Euro, the globalisation process, technological innovation, deregulation and privatisation, as well as the financial market boom spurred European companies to take part in M&A during the 1990s (Martynova and Renneboog, 2006). It was during this period that utilities (electricity, gas, water and telecom) both in the U.K and Continental Europe were subjected to privatisation and deregulation. This led to massive consolidation of this industry.

Therefore the research questions that this study aims to examine are as follows:
(i) What is the short run wealth effect of the European utility firms engaged in M&A?

Wealth effect here refers to the gains (or losses) to the target and the acquiring firm shareholders following the announcement of a merger. This will be gauged by calculating the short event window abnormal returns surrounding the announcement of an M&A deal. The logic behind using a short event window is the efficient market hypothesis Fama (1969), which states that capital markets are efficient and hence stock prices will incorporate any new information very quickly and effectively such that the stock price of a company at any time will reflect the market's best estimate. The abnormal returns obtained from the short event windows will show the change in value of the target and acquirer shareholders following the announcement of the M&A. The result thus obtained can be compared to the existing empirical evidence to see whether the results support or refute existing theory.

By looking at the combined gain (target plus bidder) following an acquisition announcement and comparing them to the individual gains of target and bidder prior to the announcement date (following the methodology of Berkovitch and Narayanan, 1993; and Seth et al, 2000) it will also be possible to analyse the motives behind a particular M&A. Following Berkovitch and Narayanan, (1993) a positive correlation between target and total gain will imply synergy motive, negative correlation will imply agency or managerialism motive and a zero correlation will imply hubris motive. However an important distinction of this study from Berkovitch and

Narayanan (1993) and Seth et al (2000) is that unlike these studies which analysed firms in a non-regulated industry this study will follow this methodology on European utilities which are subjected to economic regulation.

(ii) To what extent is the long run stock price performance of the merged European utility companies different from those European utility firms that chose not to, or were unable to restructure via mergers?

Mergers represent massive allocation of resources within the economy, both within and across industries. Consequently, measuring value creation (or destruction) resulting from M&A and determining how this incremental value is distributed among merger participants are two of the central objectives in finance and industrial organisation merger research (as reviewed in section 3.1). Short window event studies are most common empirical tool to gauge whether M&A create value for shareholders. However it is often argued that short event windows do not always capture the overall benefits from M&A (Loughran and Vijh, 1997). Although the three day announcement returns are positive, the evidence from the deal-to-close abnormal returns suggest that companies that pursued M&A strategies may have destroyed shareholder wealth by the time the deals were completed. On the other hand investors might be wrong about the potential efficiency gains or they might have failed to price out the gains prior to the merger actually taking place. In both these cases as information about the actual post-merger performance of the completed deals emerged, market participants may have revised their initial assessments about the potential benefits of the mergers. Therefore it is important to examine the post completion long-run stock price of the firms that have been subjected to M&A.

This study therefore aims to examine the short run and the long run stock price performance of the European utilities engaged in M&A and also to analyse the long term operating performance of the European utility companies following M&A.

5. Data Collection

Data on M&A of European utilities will be collected from Securities Data Corporation Mergers and Acquisition database (SDC hereafter). SDC provides detailed quantitative information about M&A worldwide. It is the most comprehensive source of M&A worldwide and a major source of data for acquisition related empirical studies Rau and Vermaelan (1998), Sudarsanam (2003) and Conn et al (2005). However SDC does not provide information about firm name changes following acquisitions. To obtain this Financial Analysis Made Easy (FAME) database will be used to track for firm name change history.
The stock price data and accounting data will be collected from Ecowin database. Ecowin contains a vast number of economic, company and financial data for global companies. Moreover to obtain specific news on a particular M&A this study also proposes to use Lexis Nexis and Hemscott Company Guru Academic databases.

6. Sample Selection

The sample will consist of all the European utilities that have been subjected to M&A after 1990. Moreover the sample should also meet the following criteria:
1. Only completed deals will be included in the sample

2. Both the target and acquirer should be listed companies with stock price data available in Ecowin database
3. The acquirer nation should be any of the European countries
4. The target and acquirer should belong to any of the utilities industry like electricity, gas, water and telecommunications.
5. Only those deals were selected from the SDC where percentage of shares owned after transaction by the acquirers is at least 50 percent.
6. The merger announcement date ranges from 1st Jan 1990 to 31st Dec 2006.

With the above criteria of sample selection 151 mergers and acquisitions announcement data of the utilities companies were collected from the SDC database.

7. Methodology

(i) Measurement of short run stock price performance

To address the first research question standard event study methodology will be used to estimate the short run abnormal returns of the acquirer and the target firms. Daily stock price data for a period of 230 days prior to the announcement date to 130 days after the announcement will be compiled from the Ecowin database for both the target and the acquiring firms in the sample. The market model is assumed to be a valid representation of the stochastic process generating security returns (Seth et al, 2000). In standard event study methodology the market model is expressed as

$$R_{j,t} = \alpha_j + \beta_j R_{m,t} + \varepsilon_{j,t} \qquad (1)$$

Where $R_{m,t}$ is the rate of return on the equally weighted market portfolio on day *t*; $R_{j,t}$ is the rate of return for event *j* on day *t*; a_j and b_j are the intercept and slope parameter for event *j* respectively; and $\varepsilon_{j,t}$ is the error term for event *j* on day *t*. The market terms (α_j and β_j) for each event (j) will be calculated using appropriate market indices for a 200-day period, termed the estimation period. If the event date is day 0, then this period will be taken from day –230 to day –30. The estimation period is cut off at 30 days before the announcement to search for possible leakages of information prior to the announcement (Bertunek et al, 1993). Abnormal return for each event ($A_{j,t}$) will be calculated for each day in a window around the announcement, by subtracting the expected returns based on the market from actual return observed for that day ($R_{j,t}$):

$$A_{j,t} = R_{j,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t}) \qquad (2)$$

$A_{j,t}$ is the abnormal return for the common stock of the jth firm on day t and $\hat{\alpha}_i$ and $\hat{\beta}_i$ are ordinary least squares estimate from daily data.

The cumulative abnormal returns (CAR) will be calculated taking different event windows across the announcement date. This is given by

$$CAR_{b,e} = \sum_{t=b}^{e} AR_t \qquad (3)$$

Where the interval is beginning on day t=b and ending on day t=e. A test statistic will be used to assess the significance of the CAR. The statistical significance of the CAR will be examined to see whether they have the desirable statistical properties and are appropriate for the tests that involve examining the mean level of gains to acquirers, targets and the combined firm.

However as Berkovitch and Narayanan (1993) and Seth et al (2000) states, CAR cannot be used to estimate the relationship between target gains and total gains or between target gains and acquirer gains. This is because there may be large size discrepancies between acquirers and targets which may interfere with the meaningful interpretation of the relationships of interest. Therefore following Berkovitch and Narayanan (1993) and Seth et al (2000) target gains, acquirer gains and total gains will be calculated in terms of the currencies of their respective countries. To analyse the motives behind a particular M&A target gains will be regressed against total gain and acquirer gain separately using two 2 variable regression models.

(ii)Measurement of long run stock price performance

The long run stock price performance will be calculated following the event time analysis of Barber and Lyon (1997). The event-time approach is based on either three-year or five-year buy-and-hold abnormal returns. The event window in this study will be 3 years after the acquisition effective month, 0. The reason for taking a 3 year horizon is that acquisitions have a strong and extended impact and this can be reflected in multi year firm performances. Five year window will not be used since the longer the horizon the more sensitive is the long-term performance test to the methodology employed and more controversial is the reliability of the results (Sudarsanam, 2003). In this method for each sample firm a matching firm will be selected based on industry, size and book to market ratio. The buy-and-hold abnormal return (BHAR) is calculated as the difference between buy-and-hold return (BHR) of the sample firm and the buy-and-hold return of the matching firm over the same period.

$BHAR_i = BHR_i - BHR_{match}$

Following Barber and Lyon (1997) BHAR for the portfolio of sample firms will then be calculated as

$$ABHAR_T = \frac{1}{N}\sum_{i=1}^{N} BHAR_{i,T}$$

Where $ABHAR_T$ is the equally weighted BHARs for firm *i* for time period T. N is the total number of stocks in the portfolio.

The significance of the ABHAR will be examined by a suitable statistical test.

(iii) Measurement of post merger operating performance

Empirical evidence from U.S and U.K studies suggest that different studies have used different measure of post merger operating performance. For instance among U.S. studies Ravenscraft and Scherer (1988) used operating income before interest, tax and extraordinary item/ total assets as a measure of operating performance while Healy et al (1992) and Ghosh (2001) used pre-tax operating cash flow to market value of assets to measure operating performance. Among U.K studies Cosh et al, (1980) and

Manson et al (1994) used operating cash flow to market value of firm as a measure of operating performance. However empirical evidence suggests that accounting based performance measures are less reliable than cash flow measures. This is because cash flow measures avoid many distortions caused by discretionary accounting rue choices many companies can make (Sudarsanam (2003). Moreover cash flow measures are also conceptually better related to valuation since value of a company is the present value of its future cash flows, as the evidence of positive and significant relation between operating cash flow changes and abnormal returns in Healy et al.'s study suggests. Therefore following Healy et al. (1992) this study propose to use pre-tax operating cash flow to market value of assets as the measure of post merger operating performance.

9. Conclusion

This research is unique in a number of ways. Firstly, this research will be an important contribution to the study of latest wave of M&A which started in the 1990s and in this wave for the first time; both the UK and the Continental Europe participated at similar levels to their U.S. counterpart (Martynova and Renneboog, 2006). Secondly, this research will also be a good contribution to the M&A in utility which is the latest sector to involve into the M&A activity particularly after the deregulation of this sector in the 1990s (Andrade et al, 2001). Thirdly, to the best of knowledge of this researcher this will be the first study to analyse shareholder wealth effects and post merger operating performance following the M&A of the European utilities. Finally, this research will provide some insight as to whether regulatory environment of the European utilities will produce benefits to M&A that are similar to those achieved by conglomerates in non-regulated industries. Moreover the empirical results from this analysis will be compared to those of prior studies on U.S. utilities as reviewed in section 2 in order to develop implications for acquisitions by European utilities.

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