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Mergers and Acquisitions in the Energy Industry following the Market Liberalization: the Italian Case

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Abstract

E Starting from 1996 (electricity) and 1998 (gas), the first liberalisation directives in the European energy markets have slowly opened up new competitive scenarios. In Italy, the change in the regulatory framework, transposed during the 2000s, has deeply modified the industrial organization of the energy sector. In fact, the energy companies have implemented new competitive strategies in order to exploit the potential benefits arising from the new regulatory framework. In particular, many companies have carried out mergers and acquisitions (M&As) in order to achieve the benefits related to the exploitation of several potential synergies in economic, financial and organizational aspects.

The purpose of this paper is to analyze the M&As carried out in the Italian energy industry in the five years following the market liberalization (2006-2010).

Furthermore, this paper investigates how the market structure has changed following the concentration of the energy retail sector. For this purpose, we apply the Herfindahl–Hirschman Index and the Concentration Ratio to estimate the market concentration in the electricity and gas retail sector.

Keywords: *Company geographical position; the Italian energy market liberalization; economic and financial performances*

1. Introduction

The last 10 years have seen significant structural change in the Italian energy markets. In particular, policies of liberalization and restructuring were implemented with the goal of enhancing competitiveness in the energy sector.

Following the opening of the liberalization process, energy companies have undertaken strategies to exploit new market opportunities. Among these, an important role is given by merger and acquisitions. In particular, companies have tried to exploit the synergies resulting from the diversification of the business, carrying out mainly horizontal or conglomerate M&As. The reasons which have stimulated this phenomenon are mainly two. The first cause is the increasing convergence between the energy markets of different network industries. In the production phase, electricity companies aim to obtain economic advantages and higher security of supply when buying natural gas to run their gas-fired plants; on the other hand, gas companies aim to obtain access to the electricity market and to increase their demand, in order to better satisfy take or pay (TOP) clauses in import contracts and to ensure a lower uncertainty on their demand (Verde, 2008). The second reason is to be found in the downstream opportunities to avoid costs duplications: following the deregulation of retail activities, companies are able to offer a wide range of services to users, by promoting, for example, bundled offers “dual fuel”.

The new opportunities deriving from liberalization process also arise, since 2004, from the Italian Power Exchange (IPEX), which is an essential tool for the creation of a competitive market for electricity in Italy. In fact, the Italian Power Exchange is an electronic marketplace in which equilibrium prices are formed efficiently, ensuring greater competition in the supply phase.

The management of the Electricity Market is entrusted to the Energy Markets Operator (Gestore dei Mercati Energetici S.p.A. - GME) under principles of neutrality, transparency, objectivity and competition between producers.

In the natural gas sector, the launch of an electronic market has followed a longer timing. In particular, the first spot gas market, established in 2006, was only virtual and not physical, known as Virtual Trading Point (Punto di Scambio Virtuale or PSV) and managed by Snam Rete Gas, which is the leading natural gas transporter and dispatcher in Italy. The primary aim of the PSV is that of providing the users with a platform where bilateral over-the-counter (OTC) transactions of natural gas take place on a daily basis, with the objective of facilitating negotiations, reducing transaction costs, and hence improving the overall efficiency of the system (Regulatory Authority for Electricity and Gas - AEEG, 2004).

However, the Gas Exchange has been launched only in September 2013 by decree issued by the Ministry for Economic Development (MED, 2013) and is managed by GME, as for the other energy markets. The Gas Exchange is a tool for efficient trading, responding to the supply needs not only of short term but also of medium term. The benefits of this new market are the

possibility for operators to conclude transactions on wider time horizons, the hedging against price fluctuations and the secure supplies, defined according to the specific needs of each operator.

Therefore, ten years after the opening of the energy markets, two opposing trends take shape: on the one hand, the wave of M&As causes a higher concentration of natural gas and electricity sectors, on the other hand, the opening of the Power Exchange and Virtual Trading Point stimulate greater competition among firms already in the market and the entry of new operators.

These new market conditions beg the following questions: What is the structure of the energy markets following the deep change resulting from the liberalization? Is the concentration in these markets increasing or decreasing? What are the differences between the natural gas and the electricity sectors?

The purpose of this paper is to answer the above questions. To that aim, we analyze the M&As carried out during a period of five years after the start of liberalization (2006-2010), and subjected to authorization by the Italian Competition Authority (Autorità Garante della Concorrenza e del Mercato - AGCM). This analysis is performed with respect to the main features of buying company/surviving corporation: business sector, business location, ownership structure and the strategic aim. Only with regard to acquisitions, the analysis is performed also considering the percentage of control achieved by the buying company post acquisition, in order to better understand the motivation of purchase. Furthermore, we analyze the change in the concentration of Italian energy markets over the period 2006 to 2010 using the most frequently applied measures of concentrations; namely the concentration ratio (CR_n) and Herfindahl-Hirschman Index (HHI).

The rest of the paper has the following structure: Section 2 provides a regulatory framework of the energy markets in Italy. Section 3 analyzes M&As of energy sectors with respect to their main features (business sector, business location, ownership structure, strategic aims). Section 4 discusses measures of market structure and concentration, highlighting the differences between natural gas and electricity sectors. The final section concludes.

2. Regulatory framework

The process leading to the creation of a EU single market through the liberalization and opening up of national markets, started in 1996 with the first energy directive, n. 96/92/CE (European Parliament and Council, 1996). This directive has imposed the respect of some fundamental principles, such as: *(i)* the prohibition to grant exclusive rights to the production, import and export of electricity, the use and construction of transmission lines; *(ii)* the freedom of access to transmission networks; *(iii)* the gradual opening of the market, thanks to which the customers are free to choose their supplier. The objective of the Community rules was to create an internal market for electricity in conditions of free competition, so as to increase the efficiency of

production, transmission and distribution, while increasing the security of supply and competitiveness.

The Italian Government has transposed the EU Directive 96/92 for the liberalization of the electricity sector by means of legislative decree n. 79 of 16 March 1999 (the "Bersani Decree").

This decree has innovated the Italian regulatory and institutional framework. In particular, the reorganization of the Italian electricity industry has resulted in a distinction between production phases: while the activities of generation, import, export and sale have been liberalized because potentially competitive, the transmission and the dispatching remain under national monopoly and the distribution is entrusted to the exclusive management by the Ministry of Economic Development.

Despite the liberalization process was started in 1999, the opening of the domestic market occurred only in 2007, the year in which all end users are free to choose their supplier.

The European liberalization of the natural gas industry has been launched through the first gas directive (Directive 98/30/EC), which established common rules on the transmission, storage, supply and distribution of natural gas. In Italy the process of liberalizing the gas market was carried out by means of Legislative Decree N. 164 of 23 May 2000, known as the Letta Decree (Ministry of Economic Development, 2000), which laid out important guidelines concerning the definition of eligible customers, competition, and conditions of reciprocity. The Letta Decree also imposed the unbundling of the distribution companies from those in retail, thus allowing the latter to operate in a more competitive market. The system was then divided into companies dealing with the raw material (producers, importers, wholesalers, retailers) and companies providing the system with infrastructure and services (transporters, distributors, LNG plant operators, and storage).

Another crucial point is that the Letta Decree imposes, with effect from 1st January 2003, the full liberalization of the market: all customers become eligible, meaning they can choose the provider that offers the most convenient conditions.

A significant difference between the natural gas liberalization and the electricity one refers to the management of the transmission grid. In fact, in the electricity sector, the Italian government has chosen, from the start of liberalization, the ownership unbundling between former monopolist (Enel) and the transmission system operator (Terna), in order to provide transparent and non-discriminatory access conditions, and to stimulate a policy of investment aimed at expanding the market. On the contrary, in the natural gas sector, the Italian government has opted for a weaker form of separation, only corporate, by virtue of which the property of the network (Snam Rete Gas) remain to former incumbent (Eni) which is also able to nominate the top corporate management. The obligations of separate accounting, corporate and physical independence, and the prohibition of exchanging data remain in force, in order to ensure full compliance with the constraints of impartiality. Only in recent times, with more than ten years of delay with respect to the electricity sector, the Decree of Competition and

Liberalization (Italian Government, 2012) establishes that ownership unbundling should enter into force. This Decree has been converted into the Law no. 27/2012, "Urgent provisions for competition, infrastructure development and competitiveness" (Italian Parliament, 2012). In particular, article 15 indicates the provisions relating to ownership unbundling which will be defined within 18 months from the date of entry into force of the law.

3. Analysis of M&As

In the main literature, the study of the effects of M&As is a very consolidated topic (Lewellen, 1971; Teece, 1980; Bradley et al., 1988; Rajan et al., 2000; Devos et al., 2009). However, to our knowledge, it seems to be only few studies on these operations as part of a radical change, due to liberalization and privatization of the sector and made more complex by the regulatory implications suitable for the protection of end-users. Our work aims to fill this lack in the Italian energy markets.

The period considered for the analysis is the five year period 2006-2010. We have chosen this period because before 2006 few operations are recorded, even considering the fact that domestic market liberalization occurred in the natural gas sector in 2003, and in the electricity sector only in 2007.

The sample chosen for the analysis consists of the concentrations for which there is an obligation of prior communication to the Italian Competition Authority (AGCM). These operations include both mergers (in the strict sense and by incorporation) and the acquisition of control of the target company, as defined in Article 7 of the Law on protection of competition and market (Italian Parliament, 1990). In particular, the acquisition of control is not linked to the formal parameters and includes all the circumstances through which occurs the possibility of exercising decisive influence over the commercial policy of a company, by virtue of rights, contracts or any other means.

Pursuant to Article 16 of Law no. 287/90, must be notified in advance to the AGCM all mergers and acquisitions of firms that exceed certain turnover thresholds, updated annually based on the GDP Price Deflator. As regards the study period of our work, there are the thresholds indicated in Table 1, where the first column refers to the turnover on national territory of all undertakings involved in the merger or acquisition and the second column refers to the turnover on national territory of the target company.

Table 1: Turnover thresholds requiring a prior communication of an M&A

	Total turnover (€ x 1,000,000)	Target turnover (€ x 1,000,000)
2006	432	43
2007	440	44
2008	448	45
2009	461	46
2010	472	47

In the five years analyzed, numerous M&AS occur. In general, the acquisitions are much more numerous than the mergers, as these latter are more complex operations, profoundly changing the legal entity of the company.

As regards the acquisitions are recorded 29 transactions in 2006, 10 in 2007, 13 in 2008, 21 in 2009 and 16 in 2010 (see Table 2), while the mergers made during the five years have been a total of 12. By analyzing Table 2, we can observe that the majority of acquirers are multi-business companies aimed at further diversifying its portfolio of services, or at entering new geographical markets. It should be noted two exceptions: one in 2006, year in which the companies belonging to natural gas sector achieve the highest number of acquisitions and in 2010, in which the majority is represented by the electric companies. This latter year shows an increase of acquisitions of companies operating in the sector of renewable energy, stimulated also by the subsidized regulatory framework for the electricity production of photovoltaic systems came into operation until December 31, 2010 (MED, 2007; Italian Government, 2010).

The item “other buyers” includes industrial companies which operate in global service and facility management sectors, financial holdings (national and international) and private equity firms.

With regard to the geografical location of the acquirer we highlight a high percentage of foreign firms over the period examined, with the exception of the year 2007. Indeed, some energy international groups have entered the Italian market through the acquisitions of small and medium sized companies, for example the acquisition of Italcogim by french Gaz de France and Dalmine Energie by german E.ON. As concerns the ownership structure of buying company, only a small percentage are listed companies.

Table 2: Distribution of acquisitions according to the features of the buying company

	Business Sector				Business Location		Ownership Structure
	Electricity	Natural Gas	Multibusiness	Other	Domestic	Foreign	Listed
2006	6	13	9	1	20	9	5
2007	0	0	8	2	8	2	6
2008	1	2	8	2	7	6	6
2009	4	2	14	1	14	7	9
2010	12	0	1	3	9	7	1

Throughout the study period, the acquisitions have been more horizontal, aimed at achieving economies of scale and expanding the market share (see Table 3). There have been numerous conglomerate acquisitions designed to diversify the business and reduce the overall risk.

By analyzing Table 4, we can observe that the percentage of equity owned by the acquirer after the acquisition is generally very high. In fact, throughout the study period the majority of the acquiring undertakings has performed acquisitions of 100% of ownership equity, or however, has maintained a high control, more than 75% of the equity. This result shows that the buying company pursues industrial purposes, by controlling de facto or de jure the acquired company.

Table 3: Distribution of acquisitions according to their strategic aim

	Strategic aim		
	Horizontal	Vertical	Conglomerate
2006	20	0	9
2007	4	4	2
2008	9	0	4
2009	14	1	7
2010	12	0	4

Table 4: Distribution of acquisitions according to percentage of control obtained from the buying company post-acquisition

	Percentage of control obtained from the buying company post-acquisition				
	X<25%	25%≤X<50%	50%≤X<75%	75%≤X<100%	X=100%
2006	0	1	3	8	17
2007	1	2	3	1	3
2008	0	0	1	4	8
2009	0	4	4	1	12
2010	0	2	3	1	10

From Table 5 we observe that the majority of mergers was carried out between multi-business firms. The development of multi-business companies in the sectors of natural gas and electricity allows obtaining several advantages. Firstly multi-business firms can enter new markets and exploit the scope economies. In addition, the expansion of commercial offer, through dual fuel promotions, increases customer loyalty and brand visibility.

The diversification of the asset portfolio also allows to reduce the overall risk of company, and in particular the regulatory one, typical of infrastructural sectors.

The advantages in the supply phase are numerous. The provision of both energy services (natural gas and electricity) allows to obtain benefits that result in a virtuous circle. Indeed, the importance of natural gas between the fuels used in electricity generation is greater than before and the trend seems to persist; as a consequence, securing a supply of natural gas on competitive terms is imperative for the generation of electricity. Furthermore, for an electricity company only the purchase of large volumes gives access to the best supply conditions of natural gas (both from pipe and LNG). As regards the natural gas firms, the purchase of large volumes of natural gas means the possibility:

- to access to the 'take or pay' contracts deriving from a greater assurance of optimal employ of the purchased volumes;
- to make better use of transport capacity on the network and storage capacity;
- to make significant investments with less risk;
- to reduce the variation in seasonal uplifts.

The benefits obtained by multi-business companies also affect the sale and distribution, in which some synergies occur. Firstly, advanced technologies in remote meter reading: from an economic viewpoint the higher the number of remote meter reading, the more convenient is the remote reading. We can underline another important benefit, that is the centralization of call centers and emergency services.

As regards the strategic aim of mergers, all 12 operations are of the horizontal type. This data derives from the principle of unbundling, which aims to keep the disintegration of production-distribution-sales chain. As a result of this new regulatory principle applied in Italy, many companies reacted by making horizontal mergers.

In addition, since natural gas and electricity sectors are capital intensive, horizontal mergers allow companies to make new investments, otherwise economically unsustainable.

Indeed, in order to make new investments, companies need an economic force that small ones do not have.

Finally, it is interesting to note that mergers carried out during the study period were performed by domestic firms and that half of them involving listed companies. The reasons why mergers have been only national can be explained by the defensive approach of energy companies against foreign hostile takeovers and also by the possibility of a company creation with a higher

bargaining power to negotiate favourable terms with strong European suppliers and competitors. Indeed, the creation of a single European market gives incentives to create bigger national players able to survive in a widened and global environment.

Table 5: Distribution of mergers according to the features of the surviving corporation and to the strategic aim

	Business Sector				Business Location	Ownership Structure	Strategic aim
	Electricity	Natural Gas	Multibusiness	Other	Domestic	Listed	Horizontal
2006-2010	0	2	10	0	12	6	12

4. Market Concentration

The market concentration of the Italian energy sector is influenced by two opposing trends. On the one hand, the liberalization of the sector is spurring the market entry of new players and breaking down the old monopolies also thanks to the opening of the Italian Power Exchange and of VTP. On the other hand, the "huge wave" of M&As is contributing to increase the market concentration. Therefore it is interesting to analyze which of the two trends prevailed over the other and how the market concentration has changed during the period of examination.

There are different approaches to measure market concentration. In this study two different methodologies were applied.

Firstly, the analysis is carried out to identify the different market Concentration Ratios (CR) levels. The Concentration Ratio CR_n is defined as the sum of market shares of the *n* largest companies competing on the market:

$$CR_n = \sum_{i=1}^{n} S_i$$

S_i is the firm i's market share, where there are *n* firms in the market. The index gives equal importance to the *n* leading companies, but neglects the many small firms in the market. The concentration ratio may be considered as one point on the concentration curve, and it assumes a one-dimensional measure that varies between zero and one. The index approaches zero for an infinite number of equally sized companies and it equals to one if there is just one firm in the entire industry.

There is no rule for the choice of the value of *n*, so that the number of companies included in the concentration ratio is a somewhat arbitrary decision (Al-Muharrami et al., 2006). In this work, we test the concentration ratio considering a variable number of leading companies. We consider the concentration ratio with a single firm (CR1), with three companies (CR3) and five companies (CR5).

Secondly, the Herfindahl-Hirschman Index (HHI) is another widely accepted indicator for market concentration which takes into account the relative size and distribution of the companies in a market (Demesetz, 1973). It is defined as follows:

$$HHI = \sum_{i=1}^{n} (S_i)^2$$

If a market consists of a single firm, the HHI would be 10,000 (i.e., the square of 100 per cent), a classic example of a monopoly (Viscusi et al., 2005). Overall, fewer firms lead to a more concentrated market according to HHI. On the contrary, if the market is divided equally between virtually countless small companies, the HHI will be close to 0. HHI will therefore vary between 0 and 10,000.

The ranges considered dangerous differ depending on the nationality of the regulator. For example, according to the current screening guidelines in USA, the industry is regarded to be competitive market if the HHI is less than 1,000, moderately concentrated market if the HHI lies between 1,500 and 2,500, and highly concentrated market if HHI is more than 2,500 (US Department of Justice and Federal Trade Commission, 2010).

However the European Commission, in its guidelines on the assessment of horizontal mergers, identify competition concerns when the HHI exceeds 2,000. Vice versa markets do not require extensive analysis when HHI is below 1,000 (article 19). The Commission is also unlikely to identify horizontal competition concerns when HHI is between 1,000 and 2,000 (article 20) (European Commission, 2004).

By analyzing Figure 1, we observe that the biggest competitive issues are present in the natural gas sector, in the early years following the liberalization. Indeed, HHI exceeds 2,000 until 2008, and then showed a significant reduction in the next two years. Even in the electricity sector there is a decrease of the HHI index, although it is always below 2,000. This result highlights the greater level of competition in the electricity sector. Indeed, in the Italian energy market, liberalization policies have had different timing and effectiveness. In the natural gas sector there are elements of distortion caused by the position of dominance by the incumbent Eni. By analyzing CR1 (see Figure 2), we observe the market leadership of ENI and the significant differences between the two sectors, at least until the year 2008. After 2008, the indicator is almost the same for the two sectors. The slower start of liberalization in the natural gas sector was partly due to the lack of the ownership unbundling between Eni and the national network of gas transmission.

Figure 1 HHI in Electricity and Natural Gas Sectors in Italy

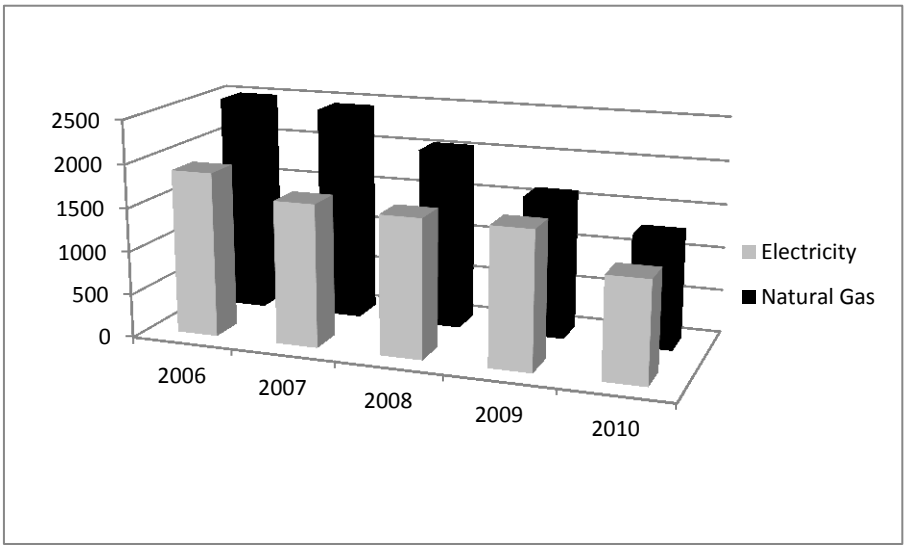
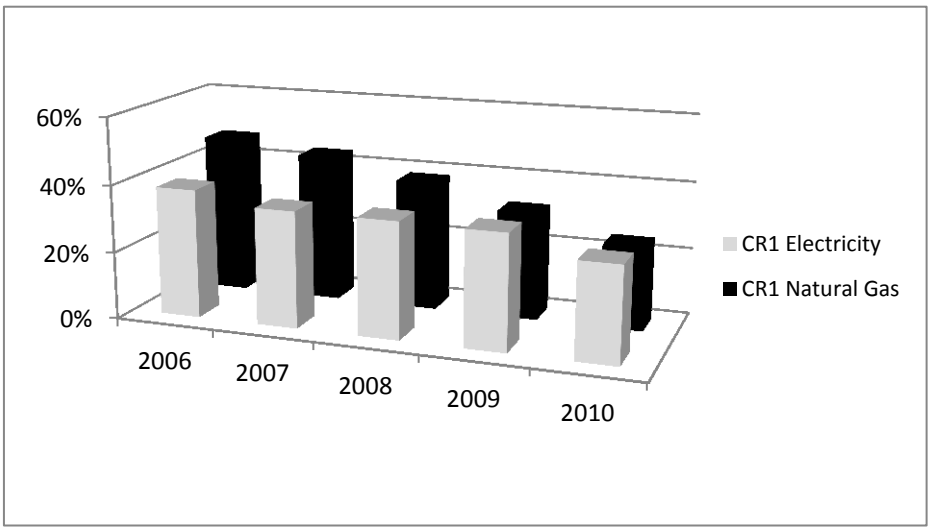


Figure 2 CR1 in Electricity and Natural Gas Sectors in Italy



The lack of independence of the essential facility is not only a significant source of information asymmetries between Eni and its competitors, but has also been used as a mean to perform anti-competitive behaviour aimed at damaging the main competitors of the incumbent. Non discriminatory access is essential for the extension and deepening of competition (Pollitt, 2008).

Since 2006, the electricity sector shows a positive opening to competition. This is largely due to two reasons. The first concerns the effective implementation of the essential facility doctrine: the National Electricity Transmission Network has been unbundled both at legal and ownership

level from the incumbent Enel and given to an independent company, which operates only in the transmission business.

The second reason is structural: each firm in the electricity sector can build a power plant and generate electricity without particular regulatory restrictions or geographical constraints. Therefore, the production is naturally open to competition, and this has stimulated investments in efficient production processes. The retail companies are not forced to get in contact with the incumbent, but they deal with producers in competition with each other.

However, by analyzing CR3 and CR5 (see Figures 3 and 4) we note that the electricity sector has been characterized by oligopolistic competition, at least in the early years following the liberalization. In this sector, as opposed to the natural gas sector, follower firms (from second to fifth) have similar market shares, showing a more balanced competition. Even the CR5 of the electricity sector is higher for all years of the study compared to the natural gas sector. Therefore, we can highlight that the main difference in the competitive framework is represented by the strong leadership of Eni in the gas sector and by an oligopolistic competition with not more than five companies in the electricity sector.

We underline that all the indicators (HHI, CR1, CR3, CR5) of the two sectors decrease during the five years period. In particular, as regards the HHI, its reduction is more marked in the natural gas sector (-49%) compared to the electricity sector (-38%). The same consideration can be made for the indicators CR1 (natural gas -48% vs. electricity -26%) and CR3 (natural gas -23% vs. electricity -16%). On the contrary, the CR5 undergoes a greater reduction in the electricity sector (-21%), compared to the natural gas sector (-11%).

The reduction of all indicators during the study period denotes the effectiveness of the liberalization process that encourages the competition. The increased competition is also due to the more active demand, especially thanks to the opening of the retail market and to the role of new entrants which, due to competitive pressure, have an incentive to introduce new commercial policies and to provide competitive prices compared to those of the former monopolist.

Figure 3 CR3 in Electricity and Natural Gas Sectors in Italy

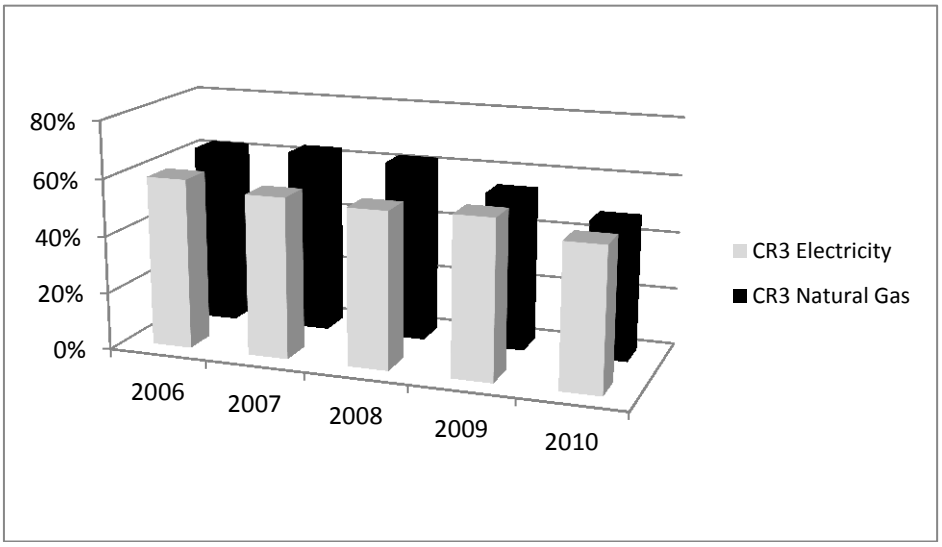
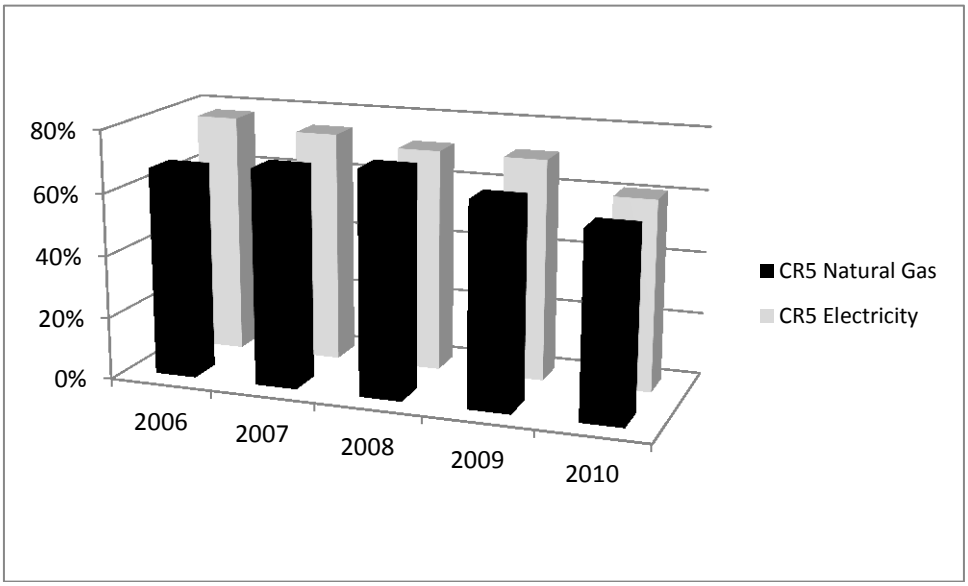


Figure 4 CR5 in Electricity and Natural Gas Sectors in Italy



5. Conclusions

The liberalization of the Italian energy sectors has caused a twofold effect on the competitive structure of the market: on the one hand, a wave of M&As increases concentration, on the other hand, the opening of IPEX and VTP enhances competition and facilitates the entry of new operators.

This paper analyzes the structure of the energy markets following this deep change resulting from the liberalization.

The first phase of the analysis has focused on the study of M&As for which there is an obligation of prior communication to the AGCM during the five year period 2006-2010. The analysis shows that the majority of acquirers are multi-business companies aimed at further diversifying its portfolio of services, or at entering new geographical markets. Moreover, acquisitions have been mainly horizontal or conglomerate aimed at exploiting economies of scale and scope, expanding the market share and reducing the overall risk.

Another interesting finding is that the majority of the acquiring companies has carried out acquisitions of 100% of ownership equity, or however, has maintained a high control, more than 75% of the equity. Therefore, we underline that the acquirer firm pursues industrial purposes, by controlling de facto or de jure the acquired company.

As regards mergers, the majority of these occurred between multi-business firms in order to expand the commercial offer, through dual fuel promotions. These strategies allow to increase customer loyalty and brand visibility. Furthermore, the provision of both energy services (natural gas and electricity) allows to obtain many advantages in the supply phase.

Another interesting result is that all mergers carried out during the study period were performed by domestic firms due to the defensive approach of energy companies against foreign hostile takeovers and also to the possibility of owning a greater bargaining power to negotiate favourable terms with strong European suppliers.

With regard to the market structure, measured using concentration indices (CR1, CR3, CR5) and the Herfindahl-Hirshman Index (HHI), there is more competition in the electricity sector compared to the natural gas sector, mainly due to the homogeneous growth of smaller operators.

The analysis shows that all the indicators of the two sectors decrease during the five years period.

One of the reasons of continuous improvement is due to the regulatory environment strongly oriented towards competition and the existence of an independent regulatory authority (AEEG), which stimulates the transparency and protects the interests of consumers.

Furthermore, the increased competitiveness is affected by the opening of the retail market. In fact, the new companies, due to competitive pressure, have an incentive to introduce new technologies and to set competitive prices compared to those of leader.

This improvement should not lead to consider the liberalization process completed, because deep changes are still needed, mainly within the supply and transport. In particular, in the natural gas sector, it needs to implement the ownership unbundling of transmission, which is a key part of energy market reform. To this end, in the next years, it will be interesting to evaluate the effects of the new decree on liberalization (Italian Government, 2012), which is aimed to

realize the future ownership separation of Snam Rete Gas from Eni, therefore reforming the entire industry.

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