Barriers to a Real Competitive Business Environment on the Liberalised Energy Market

ÁGNES KÁDÁR HORVÁTH
ASSOCIATE PROFESSOR

e-mail: vgthagi@uni-miskolc.hu

SUMMARY

Liberalised efforts targeting opening public utility markets and emphasising the beneficial effects of creating a competitive business environment have been increasing in the past few decades. A number of strategically important sectors have already been liberalised (e.g., energy, telecommunication, postal services, railway services, etc.); thus, the circle of strategic sectors to be liberalised is gradually shrinking. The energy market has become completely market-oriented, which has brought about several changes. Liberalised processes have created new opportunities in purchasing energy. The experience gained in this process highlights some unfavourable impacts of liberalisation. The effective competition expected from structural changes in the energy sector has only partially been achieved. This study aims at analysing the main reasons for the evolved situation.
Keywords: demonopolisation, liberalisation of the energy market, market concentration, natural monopoly, network-based public utilities.
Journal of Economic Literature (JEL) code: Q41, Q49

INTRODUCTION TO ENERGY SECTOR LIBERALISATION IN HUNGARY

A transition situation had developed in the energy market in Hungary by the end of 2009, when full liberalisation of the energy sector was achieved. The Hungarian electricity and natural gas markets were characterised by a hybrid market model. This meant the co-existence of a public utility segment and a competitive market segment. Customers entering the competitive market, the so-called eligible customers, were able to choose a supplier. Although they negotiated a market price, the charges paid for the system used were administrative. The administrative charges for system use were passed on to end-users and the terms of payment were specified in contracts. Thus, eligible customers faced two options. They were able either to enter the competitive market or remain within the framework of public utility services. Public utility companies supplied consumers who were either not entitled or were entitled but chose not to enter the competitive market. These customers purchased the product by paying administrative prices.

When the market was fully opened, the public utility service ceased to exist. It was replaced by a universal service provision. The related Act obliged universal service providers to conclude sales contracts. Authorities that set prices in line with a definite price regulatory scheme regulated the universal service prices. It is important to note that the circle of customers entitled to universal service provision became much narrower compared to those who used public utility services. Only consumers who lacked any real bargaining power (residential customers and several small consumers) and found themselves in a defenceless situation were entitled to universal service provision. The others had to enter the competitive market. However, both residential and small consumers were able to purchase the required amount of energy on the competitive market. In this case, competitive market terms and conditions were applied to them.

MAJOR BARRIERS TO A TRULY COMPETITIVE ENVIRONMENT IN THE LIBERALISED ENERGY MARKET

All market players cherished huge hopes regarding the implementation of liberalisation of the energy market and its full benefits. Proponents of liberalisation expected that the shift to full competition would result in creating a competitive environment, eliminating monopolistic profit, falling energy prices, increasing efficiency, improving the competitiveness of energy- intensive industries, raising the employment rate and eliminating cross subsidies.

However, liberalisation brought about several negative impacts. Dickhaus and Dietz (2004), in their study "Public Services under Privatisation Pressure: Impacts of Privatisation and Liberalisation of Public Services in Europe" evaluated the experience gained in the liberalisation of the British energy sector. The opening of the markets had a favourable impact: a clear reduction in electricity prices and considerable improvement in the supply guarantee and quality of services. The objectives set in the environmental policy were achieved and the emission of hazardous materials was reduced. However, the authors claimed that systematic analyses of the consequences of privatisation were neglected. The issues of efficiency and social security were not examined. The authors' analysis highlighted some drawbacks of liberalisation that cannot be neglected. It was international oligopolies and not national monopolies that started to dominate the market. Transnational multi-sector (multi-utility) companies took up the dominant position in the market. A real competitive environment did not evolve. As for employment, massive staff reductions occurred. The employed were exploited since they had to work longer hours, their overtime increased and their wages were reduced. Price reductions were thus financed by the aforementioned ways (for example by staff reduction and reduction of wages). However, liberalisation in other countries failed to reduce prices. More and more articles about the

unfavourable impacts of liberalisation have been published recently. Stiglitz (2005) considers rapid liberalisation to be harmful. When conducting the analysis of liberalisation processes in the USA, he pointed out that liberalisation processes failed to promote fair competition and led to monopolistic practices. Senior managers gained considerable unfair benefits from liberalisation processes.

These adverse effects of liberalisation result from factors that form barriers to creating a competitive environment. This paper further investigates the most important barriers to competition.

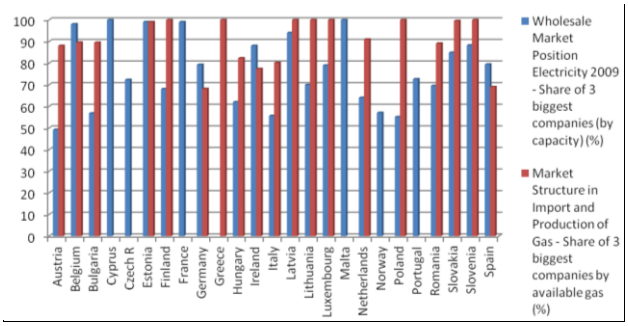
HIGH LEVEL OF MARKET CONCENTRATION AND THE DOMINANT POSITION OF VERTICALLY INTEGRATED TRANSNATIONAL COMPANIES

One of the highest barriers to creating an environment of real competition is vertical integration encompassing the whole value chain of the sector, that is, the emergence of dominant market players. Although it is true that the opportunities for utilising potential savings accumulated in economies of scales depend on the size of the market players, the size of the players creates barriers to competition, which results in generating extra profit for these players in the energy market. Although the market concentration has slightly decreased in the past few years, its rate remains high and hinders competition.

Any evaluation of the market concentration should be performed on manufacturing, wholesale and retail markets separately in order to avoid distortion of analysis of the overall market.

Market Concentration in Energy Production

The market concentration in energy production and wholesale remains high. Figure 1 illustrates the market concentration in energy production in the European Union on the basis of electricity and gas data from 2009.



There are 6 countries that have no gas market data, and one with no electricity market data. The data was not available for these countries. Source: the author's own construction on the basis of the data taken from the European Commission (2011) pp. 13 and 16.

Figure 1. Energy production market concentration in EU electricity (left column) and gas markets (right column) by market share of the three largest market players (2009)

Figure 1 clearly shows that the market share of the three major market players both on the electricity and gas markets is of determining character. Their market share exceeded 60% in both sectors in almost every EU member state in 2009. Moreover, there were countries where their dominance amounted to over 80%. In most countries the market concentration in the gas sector was the highest. This is rooted in the past. Before the liberalisation processes started, vertically integrated major national companies, which were in a monopoly position, had ensured energy production, supply and distribution as well as the whole spectrum of services. Although liberalisation promoted unbundling activities, delivered greater competition among activities separated from the grid, and encouraged privatisation, competition failed to evolve. The fact that dominant market players in particular countries expanded their activities in other countries also contributed to the increase in the market concentration level. Moreover, not only vertically integrated transnational cross-border companies took up the dominant position in the market, but multi-sector (multi-utility) companies as well. A report from the European Parliament (2010) points out that six major companies dominate the market in the EU. They are as follows: the French company EdF, the German Enel, the Italian Enel, the Swedish Vattenfal, the German RWE, and the French GdF Suez. They operate both in the EU and outside the EU.

The Herfindahl-Hirschman index, a commonly accepted measure of market concentration, can be applied for conducting concentration analyses. Herfindahl-Hirschman index is actually the sum of squared shares of individual market players. The value of the index ranges from 0 to 10,000. The higher the index value is, the higher the market concentration is. The index would equal 10,000 points, indicating a monopoly, if there were only one market player in an industry. If this value exceeds 5,000 points, the market concentration is considered to be extremely high. A value over 1,800 points also indicates a high market concentration. It is a threshold value above which a danger of discrimination and abuse of dominant market position may occur. Markets with HHI between 1,000 and 1,800 points are considered to be moderately concentrated. If the HHI is under 1,000 points the market is said to be deconcentrated (Kovács, 2011).

The table clearly indicates that market concentration in the Hungarian energy production industries have relatively more favourable indicators than in many other EU member states. However, the market share of the aforementioned three major market players is still considerable. As for the degree of concentration in electricity market by capacity, this figure amounted to 62% (in 2010 it was 66% by production). On the natural gas market this figure exceeded 80%.

Table 1
Degree of market concentration in EU electricity and gas generation and wholesale markets

2009	Electricity	Gas
Very highly concentrated (HHI>5000)	Belgium, France, Greece, Latvia, Luxembourg, Slovakia	Belgium, Greece, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Slovakia, Slovenia
Highly concentrated (HHI=1800-5000)	Lithuania, Portugal, Romania, Slovenia, Spain	Austria, France, Germany, Hungary, Ireland, Italy, Spain
Moderately concentrated (HHI =1000-1800)	Germany, Hungary, Italy, Netherlands, Norway, Poland, UK	
Deconcentrated (HHI<1000)		UK

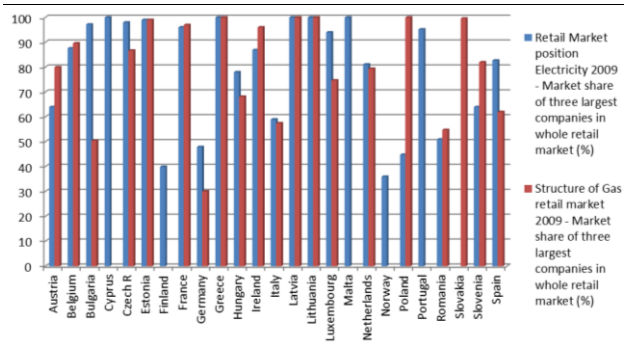
Source: the author's own construction on the basis of the data taken from European Commission (2011) pp. 13 and 16.

Wholesale Market Concentration

It is apparent that the high market concentration in energy manufacturing industries has an impact on wholesale markets and results in high market concentration in most EU member states. As for Hungary, both electricity and gas wholesale markets had a higher market concentration in 2009 than the market of energy production industries. The market share of the most dominant player accounted for 80% in both sectors in the previous years. In order to change this distorted and dominant situation, national regulators and authorities had to intervene. Firstly, the Hungarian Energy Office (HEO) upgraded the major market players to players with a considerable market share and ordered them to create conditions for fair competition. In addition, the European Commission ordered the early termination of all long-term electric power generation and generator capacity booking arrangements and reimbursement of illegal state subsidies by the power plants concerned. The structure of the wholesale power market also showed an interesting picture when universal service providers and wholesalers were analysed separately. As for the purchases by universal service providers, MVM (MVM Hungarian Electricity Private Limited Company) dominance remained unchallenged with 71.6%, whereas purchases by other service providers amounted only to 29.2%. As far as the decrease in the market concentration in the natural gas sector is concerned, the so-called 'Contract Release' and 'Gas Release' programmes were launched. As a result of the aforementioned initiatives, the market share of major companies decreased to 55% in 2011. However, these players still hold a dominant position in the market. (See further details in HEO publications and in Vince 2010a,b studies).

Retail Market Concentration

The most frequently used indicators are taken into account in the analyses of retail markets. Figure 2 illustrates the market share of the three largest companies dominating the electricity energy and natural gas markets in 2009.

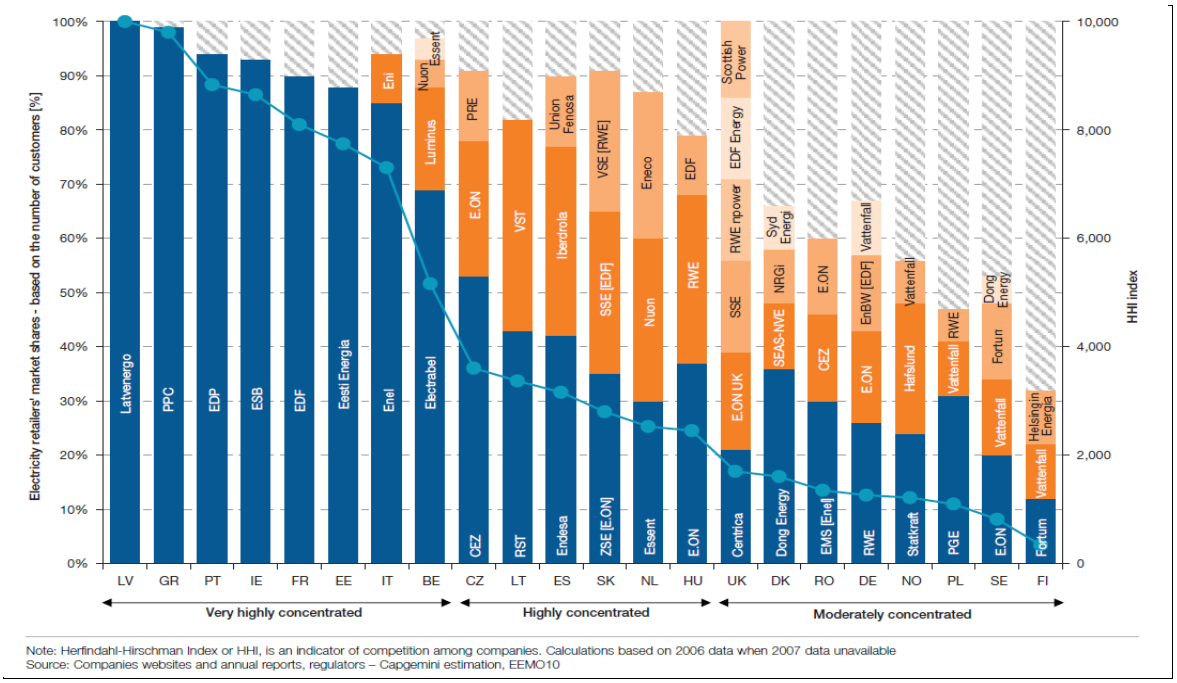


Source: the author's own construction on the basis of the data taken from European Commission (2011) pp. 15 and 17.

Figure 2. Degree of market concentration in EU electricity and gas retail markets (2009)

On the retail market the competition slightly improved compared to previous years, but the market share of the three major retail service providers on both the electricity and gas markets was still high (Figure 2). Their concentration amounted to over 70% in most countries.

Figure 3 shows the market concentration in the electricity sector from another approach, indicating both the names of the major companies and the HHI index. The figure clearly illustrates that the cross-border activities of dominant players significantly contribute to market concentration (the same players are present in several countries). The same players can be identified in data on concentration in the gas retail market (see also Capgemini 2008, p. 50). Several studies and reports conduct analyses of market concentration in the energy industry. The majority of energy analysts confirm a lack of competition in energy retail markets (see among them Vince (2010, 2011, 2012))

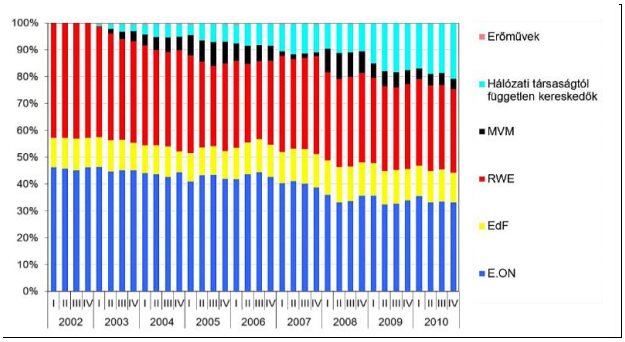


Source: Capgemini (2008) p. 31

Figure 3. Electricity retailers' market concentration (2007). market shares based on the number of customers [%] and the HHI index

Figure 4 shows the market concentration in Hungary in the period between 2002 and 2010. When market concentration in energy retail markets is analysed, its double character should also be taken into account: universal service and competitive market.

There are three multinational company groups that hold universal service provider licences in Hungary: E.ON, RWE and EdF. They also conduct free trading activities with a market share of 90% (calculated by the number of customers). In addition, they have subsidiaries and affiliates, associated companies which have interests in operating distribution networks (HEO, 2011b). It is clearly seen in Figure 4 that their market share in retail markets was still considerable and amounted to 77% in 2010. The market share of thirty traders which had no proprietary relations to domestic distribution system operators on the retail market accounted for only 19% in 2010.



Source: HEO, 2011c, p. 23

Figure 4. Changes in shares of the respective investment groups on the Hungarian electricity retail market (2002-2010)

When the market concentration of the three service providers and traders was calculated by the annual consumption volumes and not by the number of customers, their share on the free market was 64%. Consequently, the new entrant traders competed for the supply of large consumers (HEO, 2011b).

On the gas retail market, a regional distribution has experienced in terms of universal service provision and universal service providers occured in the monopoly position in their own regions. There was a high market concentration on the free natural gas market in Hungary, which compared favourably with other EU member states. A large portion of consumers who were entitled to universal service provision did not purchase on the free market. However, their number increased in 2010. This can be explained by the fact that only one company entered the free market (EMFESZ) and an investigation procedure was initiated against it. It is essential to note that consumers having district heat generation licences are no longer entitled to universal service provision from 30 July 2011.

DEFICIENCIES IN UNBUNDLING OF OPERATIONS

This section unveils deficiencies in the operation and system control of basic and distribution networks as well as in insufficient unbundling of production, supply and trading practices.

Mozsár (2002) formulated the essence of liberalisation. According to him, liberalisation is the opening up of particular sectors of industry for regulated competition. This definition reflects both activities for opening up to competition and the need for additional regulation of 'core activities' remaining in the natural monopoly status. In order to create an environment of economic competition, the company operating the network (a natural monopoly) is required to give competitors fair access to their networks. Considering the fact that network operators opposed this move, additional regulation was required. In the course of unbundling of operations the first level of liberalisation was to ensure fair access to networks (Network Access). In order to avoid any abuse of dominance, regulated network access tariffs were introduced. Later, unbundling of accounts was required to promote a more favourable competitive environment. Regulations adopted later required legal unbundling when a complete separation of network organisations was performed. However, even this move was insufficient to eliminate cross subsidies and to ensure third-party access to networks on a non-discriminatory and cost-reflective basis. In addition, it failed to promote network investments. The aforementioned requirements are fundamental requirements for ensuring fair and undistorted competition. The European Commission formulated requirements regarding full ownership unbundling. The Directive stipulates that neither the network owner nor its associated companies are allowed to perform any other activities on the energy market, that is, networks have to be operated by independent market players. Since there are hidden interrelated conflicts of interest, opposition began to mount in a number of EU member states regarding ownership unbundling. Consequently, the Commission softened its stance and elaborated three theoretical models regarding fair access to the energy networks and their operation. In the three models the requirements applied to system operation were not consistent and varied. The models shifted from the most favourable to the least favourable ones:

- ownership unbundling: the system operator is the owner of the network and has interests in generation, distribution and trade operations in the energy sector,
- Independent System Operator (ISO): the Independent System Operator only operates the system and does not exercise ownership rights over it.
- Independent Transmission Operator (ITO): The system operator and controller is a member of a vertically integrated business organisation that performs business activities in the energy sector (See MEH (HEO) 2011b and Vince (2011)).

Table 2 shows the degree of unbundling of DSOs and TSOs in some countries.

Table 2
Unbundling of DSOs and TSOs in the EU (2009)

	Electricity					Gas				
Country	Number of TSOs	Number of TSOs Ownership Unbundled	Number of DSOs	Number of DSOs Ownership Unbundled	Number of DSOs Legally Unbundled	Number of TSOs	Number of TSOs Ownership Unbundled	Number of DSOs	Number of DSOs Ownership Unbundled	Number of DSOs Legally Unbundled
Austria	3	0	129	0	11	7	0	20	0	9
Belgium	1	0	26	11	26	1	0	18	5	18
Bulgaria	1	0	4	4	4	1	0	28		0
Cyprus	1	0	1	0	0					
Czech R	1	1	3	0	3	1	0	79	0	6
Denmark	1	1	84	0	84	1	1	3	0	3
Estonia	1	0	38	na	1	1	0	26		1
Finland	1	1	88	1	50	1	0	23	0	0
France	1	0	148	0	5	2	0	25	0	3
Germany	4	2	866	0	171	18	1	695		167
Greece	1	0	1	0	0	1	0	3	0	0
Hungary	1	0	6	0	6	1	0	10	0	5
Ireland	1	1	1	0	1	1	0	1	0	1
Italy	9	1	144	121	11	3	1	263	140	260
Latvia	1	0	11	10	1	1	0	1	0	0
Lithuania	1	0	2	0	2	1	0	6	0	0
Luxembourg	1	0	6	0	1	1	0	4	0	0
Malta	0	0	1	0	0					
Netherlands	1	1	8	6	8	1	1	10	8	10
Norway	1	1	152	7	38					
Poland	1	1	20	0	14	1	1	6	0	6
Portugal	3	1	13	10	11	1	1	11	0	4
Romania	1	1	36	5	8	1	1	38	2	38
Slovakia	1	1	3	0	3	1	0	46	0	1
Slovenia	1	1	1	0	1	1	0	18	0	0
Spain	1	1	351	0	351	14	1	22	0	22
Sweden	1	1	170	0	170	2	2	5	0	5
UK	1	1	19	10	9	1	1	18	15	3

Source: the author's own construction on the basis of the data taken from European Commission (2011) pp. 36-39

It is clearly seen that more than half of the EU member states met the ownership unbundling requirements in terms of TSOs. However, on the natural gas market two-thirds of the member states only partially met the requirements or even failed altogether to meet them. As for the unbundling of DSOs, there are countries where legal unbundling was not performed. In distribution networks where neither ownership nor legal unbundling was conducted, only the lowest level of unbundling, the unbundling of accounts, was carried out.

Unbundling of Transmission System Operators in Hungary

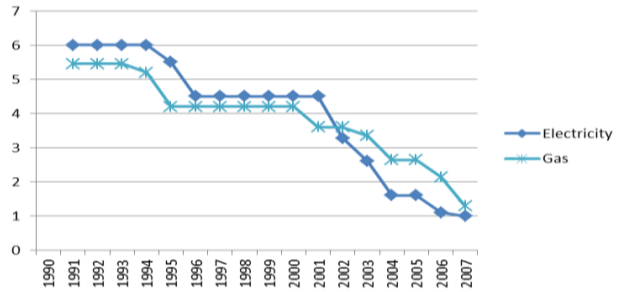
Only the model of independent transmission operator has been implemented in the Hungarian energy and gas markets so far. The requirements for it are the least strict, compared to the other three models. MAVIR Zrt. and Földgázszállító Zrt. are vertically integrated company groups of MVM Zrt. and MOL Rt., respectively, which operate as subsidiaries. It is true that unbundling of accounts and ownership and legal unbundling are required, but the requirement related to ensuring third-party access to networks on a non-discriminatory and cost-reflective basis and to creating fair competition cannot be met because of conflicts of interest. HEO pays special attention to overcoming barriers which prevent fair competition (HEO, 2011b).

Unbundling of Distribution System Operators in Hungary

There are six licenced distribution system operators in the electricity industry and ten in the gas industry in Hungary. They are groups belonging to vertically integrated business organisations which are in line with full legal unbundling. Only five out of ten major gas distribution companies have legally been unbundled. The network companies exercise ownership rights over network assets. The licensed distributors perform very limited network activities (MEH, 2011b).

ASSESSMENT OF ENERGY MARKET LIBERALISATION WITH OECD METHODOLOGY

A broad assessment of liberalisation processes can be performed by using the OECD indicators of regulation in energy, transport and communications (ETCR). The energy, transport and communications database contains data on seven sectors: post and telecommunications, electricity and gas, air, rail and road transport. The indicators allow us to measure qualitative factors of the legal and regulatory requirement system and to compare country data. This study attempts to focus on the degree of market liberalisation and the barriers to fair competition. The indicators take values between 0 and 6. The higher the value is, the higher the barriers to fair competition are. Several factors are evaluated in each sector; however, there are divergences in terms of the number and types of factors. Different computing methodology is applied in each sector. The indicators can be interpreted by each sector separately or in an aggregated form. The structure and methodology of these indicators are described in detail by Conway and Nicoletti (2006). This study deals only with indicators of the two energy sectors. For the energy market, the four factors considered in performing assessment are: entry barriers (terms and conditions for third-party access to networks and market regulations restricting competition), the proportion of state ownership and control, the degree of vertical integration (degree of unbundling operation) and market structure (only in the gas market). Figure 5 illustrates the evolution of the quantified ETCR indicators of electricity and gas in Hungary.

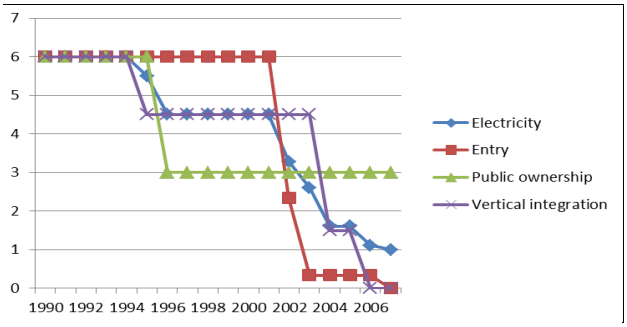


Source: the author's own construction on the basis of the OECD database

Figure 5. ETCR indicators of the electricity and gas sectors in Hungary (1990-2007)

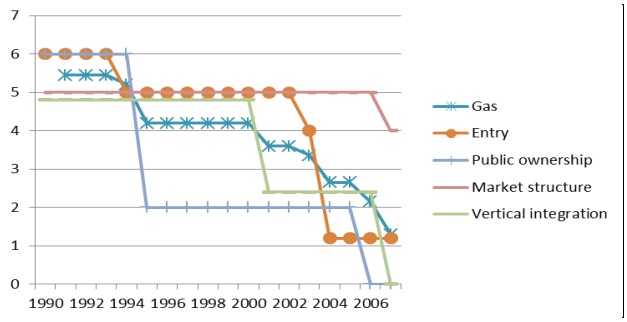
The decrease in the indicators shows gradual market liberalisation and the establishment of terms and conditions for a competitive environment. It is clearly seen that administrative and regulatory hurdles preventing market opening considerably decreased by 2007. In an international aspect the figures for Hungary compare well with other EU countries.

Figures 6 and 7 illustrate ETCR internal structure on gas and electricity markets in Hungary. The evaluation and comparison of indicators is problematic because of lack of detailed country-specific information about the markets. The description of markets requires more detailed information in order to avoid distortions of generous and superficial analysis.



Source: the author's own construction on the basis of the OECD database

Figure 6. Internal structure of ETCR indicators for the electricity market in Hungary



Source: the author's own construction on the basis of the OECD database

Figure 7. Internal structure of ETCR indicators for the gas market in Hungary

INAPPROPRIATE PLANNING OF PRIVATISATION PROCESSES

The idea of liberalisation often occurs in the context of privatisation, or more precisely, privatisation is considered to be a prerequisite for performing liberalisation and facilitating effective competition. Thus, it is not mere chance that while liberalisation is unfolding and taking pace, privatisation efforts are also increasing. Gál et al. (2005) analysed privatisation trends in Europe. In their study they highlighted that privatisation waves occurred in different stages of liberalisation. There is no consensus regarding privatisation of public services. Proponents of privatisation argue that competition triggers further efficiency gains in particular public service provision, further promotes cost reductions and becomes the potential for lower regulated prices. In addition, they think that the standard of services considerably improves, public expenses decrease, and revenues generated from privatisation can cover the expenditures of other public services. Financial resources for further investment, expansion and funding are generated. Public bureaucracies and red tape are replaced by a new and more flexible behaviour. On the other hand, a number of experts on privatisation (Osborne and Gaebler (1994), Baar (1999), Illés (2000), Stiglitz (2005), Osborne and Hutchinson (2006), Scheiring and Boda (2008), among others), back competition while sounding a note of caution about privatisation. They argue that there are public activities that belong to the scope of activities of national governments and their privatisation is an irreversible process that endangers the sustainability of public service provision. They point out that transfer of ownership and control by the state to private owners does not pave the way to competition. Privatisation itself does not trigger competition. It is the difference lying between monopoly and competition forms and not the state or private ownership that matters. They note that if private capital is involved, profit-related issues occur, which result in further increases in service provision prices. It is apparent that there are cases when privatisation seems to be the right move. Thus, complete rejection of privatisation cannot be approved. Decision makers are expected to carefully consider the impact of privatisation.

Table 3 shows the ownership distribution of companies holding licenses for the electricity and gas markets by registered capital in Hungary at the end of 2010.

The analyses of energy market players clearly show that both the electricity and natural gas markets are characterised by a strong ownership structure, and the market share of foreign investors amounts to 75%. The analysis of each market player separately shows a different picture. For generators and system operators, the Hungarian share capital is high (in the case of gas suppliers and system operators, the capital structure was defined on the basis of the ownership structure of MOL). As for distributors, universal service providers and traders, the invested foreign capital is higher. In addition, the hidden or agenda setting ownership power in the background significantly contributes to the adverse situation. What make things worse is that a high ratio of foreign capital is concentrated in just a few hands.

Table 3
Ownership distribution of electricity and gas licensees

	Ownership distribution of electricity licensees by registered capital on 31 December 2010 (%)					
Owners	Generators	Transmission system operators	Distributors	Universal service providers	Traders	Total
Hungarian equity interests	59.8	100.0	0.0	12.2	14.8	24.0
Majority-owned by foreign investors	40.2	0.0	100.0	87.7	82.5	75.1
	Ownership distribution of gas licensees by registered capital on 31 December 2010 (%)					
Owners	Generators	Transmission system operators	Distributors	Universal service providers	Traders	Total
Hungarian equity interests	77.2	21.6	3.9	23.1	12.7	12.6
Majority-owned by foreign investors	22.8	78.5	96.2	76.9	74.3	74.5

Note: the values missing from 100% refer to itemized and unregistered ownership)
Source: HEO, 2011a, pp. 58 and p. 64

CONCLUSION

The analysis of market concentration justifies the fact that the effective competition expected from structural changes in the energy sector has partially been achieved. One of the main barriers preventing real competition is the appearance of vertically integrated transnational cross-border and even cross-sector players encompassing the value chain of the whole sector. They dominate the market. Apart from high market concentration, there is another factor significantly hindering competition, namely the insufficient unbundling of network operation, since it has created bases for hidden cross-financing opportunities, limits fair access to energy networks and allows dominant market players to generate additional profit.

What gives rise to optimism is that market concentration has been decreasing in the past few years. In addition, the international economic and financial organisations, which have been putting increasing pressure on national governments to free their public services in the last few decades, admit that liberalisation has some adverse impacts. They argue that there are several barriers that prevent competition and need eliminating.

Acknowledgements

The described work was carried out as part of the TÁMOP-4.2.2/B-10/1-2010-0008 project in the framework of the New Hungarian Development Plan. The realization of this project is supported by the European Union, co-financed by the European Social Fund.

REFERENCES

BAAR, K.K. (1999): Települési közszolgáltatások vállalkozásba adása: átláthatóság, beszerzés és ármegállapítási kérdések. (Privatization of Municipal Public Services: transparency, sourcing and pricing issues) Magyar Közigazgatás

CAPGEMINI (2008): European Energy Markets Observatory. 2007 and Winter 2007/2008 Data Set. Tenth Edition, November 2008. http://www.at.capgemini.com/m/at/tl/European_Energy_Markets_Observatory_2008.pdf

CONWAY, P.-NICOLETTI, G. (2006): Product Market Regulation in the Non-Manufacturing Sectors of OECD Countries: Measurement and Highlights. Economics Department Working Papers.No.530.http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=eco/wkp(2006)58

DICKHAUS, B.–DIETZ, K. (2004): Öffentliche Dienstleistungen unter Privatisierungsdruck. Folgen von Privatisierung und Liberalisierung öffentlicher Dienstleistungen in Europa. (Public Services under Privatisation Pressure: Impacts of Privatisation and Liberalisation of Public Services in Europe) Studie des Projekts "Privatisierung und öffentliche Güter im Globalisierungsprozess" in Kooperation mit weed, der Rosa-Luxemburg Stiftung und dem wissenschaftlichen Beirat von Attac.
http://www2.weed-online.org/uploads/EU-Studie-Privatisierung-DL-final.pdf.

European Commission (2011): Commission staff working paper, 2009-2010 Report on Progress in Creating the Internal Gas and Electricity Market. Technical Annex, Brussels, 9 June 2011. http://ec.europa.eu/energy/gas_electricity/legislation/doc/20100609_internal_market_report_2009_2010_annex.pdf

European Parliament (2010): Directorate General for Internal Policies Policy Department A: Economic and Scientific Policy. Industry, Research and Energy. EU Energy Markets in Gas and Electricity.– State of Play of Implementation and Transposition
http://www.europarl.europa.eu/meetdocs/2009_2014/documents/itre/dv/a_itre_st_2009_14_eu_energy_markets_/a_itre_st_2009_14_eu_energy_markets_en.pdf

GÁL, P.-MOLDICZ, Cs.-NOVÁK, T. (2005): Privatizációs trendek Európában. (Privatization trends in Europe) Magyar Fejlesztési Bank Zrt. Makrogazdasági elemzések. https://www.mfb.hu/aktualis/makrogazdasagi-elemzesek/10161-0cdb

ILLÉS, M. (2000): A közszolgáltató vállalatok gazdasági szabályozása. (The economic regulation of public utility companies) AULA Kiadó, Budapest

KOVÁCS, N. (2011): A piaci erő közvetett mérése a biztosítási piacon. (Measuring Market Power Indirectly in the Insurance Market) PhD dissertation, Széchenyi István University, Győr.
http://rgdi.sze.hu/files/Ertekezesek,%20tezisek/kovacs_norbert_disszertacio.pdf

HEO (2011a): Tájékoztató a Magyar Energia Hivatal 2010. évi tevékenységéről. (Information on the Hungarian Energy Office activities for the year 2010) Budapest, 2011. http://www.eh.gov.hu/gcpdocs/201111/meh_tajekoztato010_m_6.pdf

HEO (2011b): A Magyar Energia Hivatal 2010. évi jelentése az Európai Bizottság részére (Hungarian Energy Office Annual report to the European Commission), Budapest, 2011. augusztus.
http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/NATIONAL_REPORTS/National%20Reporting%202011/NR_nl/C11_NR_Hungary-LL.pdf

HEO (2011c): Hungarian Energy Office Annual report to the European Commission, Budapest, August 2011. http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/NATIONAL_REPORTS/National%20Reporting%202011/NR_En/C11_NR_Hungary-EN.pdf

MOZSÁR, F. (2002): A közszolgáltató szervezetek monopol-helyzete. (The monopoly position of public service organizations) In: E. Hetesi (Ed.) A közszolgáltatások marketingje és menedzsmentje. SZTE Gazdaságtudományi Kar Közleményei. JATEPress, Szeged, pp. 33-49

OECD.StatExtracts. Complete databases available via OECD's iLibrary: http://stats.oecd.org/Index.aspx?DataSetCode=ETCR

OECD: Regulation in energy, transport and communications (ETCR).
http://www.oecd.org/regreform/regulatoryreformandcompetitionpolicy/44754663.pdf

OSBORNE, D.–GAEBLER, F. (1994): Új utak a közigazgatásban. Vállalkozói szellem a közösségi szektorban. (Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector) Kossuth Könyvkiadó, Budapest

OSBORNE, D.–HUTCHINSON, P. (2006): A kormányzás ára. Hatékonyabb közszolgáltatások megszorítások idején. (The Price of Government: Getting the Results We Need in an Age of Permanent Fiscal Crisis) Alinea Kiadó-IFUA Horváth&Partners, Budapest

SCHEIRING, G.–BODA, Zs. (szerk.) (2008): Gazdálkodj okosan! A privatizáció és a közszolgáltatások politikája. (Resources as efficiently wisely! The policy of privatization and public services) Védegylet és az Új Mandátum Kiadó, Budapest

STIGLITZ, J.E. (2005): A viharos kilencvenes évek. A világ eddig legprosperálóbb tíz évének története. (The Roaring Nineties: A New History of the World's Most Prosperous Decade) Napvilág Kiadó, Budapest

VINCE, P. (2010a): Piaci verseny és piacszerkezet a villamosenergia-szektorban. In: P. Valentiny, F.L. Kiss, and I. Nagy Csongor (Eds.): Verseny és szabályozás 2009 (Competition and Regulation, 2009). pp. 325-339. Budapest: MTA Közgazdaságtudományi Intézet.

VINCE, P. (2010b): Piaci verseny és piacszerkezet a földgázszektorban. In: P. Valentiny, F.L. Kiss, and I. Nagy Csongor (Eds.): Verseny és szabályozás 2009 (Competition and Regulation, 2009). pp. 340-352. Budapest: MTA Közgazdaságtudományi Intézet.

VINCE, P. (2011): Versenyélénkítés erőfölény korlátozással. Szabályozás és vállalatiszerkezet-átalakítás az Európai Unió energiapiacán. In: P. Valentiny, F.L. Kiss, and I. Nagy Csongor (Eds.): Verseny és szabályozás 2010 (Competition and Regulation, 2010). pp. 329-353. Budapest: MTA Közgazdaságtudományi Intézet.

VINCE, P. (2012): Árszabályozás és versenyhelyzet a magyarországi energiapiaci nyitás után. In: P. Valentiny, F.L. Kiss, and I. Nagy Csongor (Eds.): Verseny és szabályozás 2011 (Competition and Regulation, 2011). pp. 303-326. Budapest: MTA Közgazdaságtudományi Intézet.