



Institute of
Public Finance

FISCUS

Prudent and responsible public
sector financial management

The Gas Sector in the Republic of Croatia - Liberalisation and Financial Operations

No. 3 | October 2016
doi: [10.3326/efiscus.2016.3](https://doi.org/10.3326/efiscus.2016.3)
ISSN 1849-9317

Anto Bajo
Marko Primorac
Dijana Jurinec

The Gas Sector in the Republic of Croatia - Liberalisation and Financial Operations

In parallel with the process of joining the European Union, Croatia has gradually liberalised the market for gas – especially supply and distribution where currently operate around 90 firms. The aim of liberalisation was abolishing state monopolies, introduction of the market pricing mechanisms, and ensuring higher standards of service as well as more secure gas supply. Due to liberalisation of the gas supply, the market share of private firms has increased, whereas firms with minority state ownership have gradually been squeezed out of the market. Market processes and changes in Croatian gas sector should be observed within the scope of wider – geopolitical relations and global competition for market positioning of big stakeholders.

Introduction

Like other countries who in the process of joining the EU liberalised their markets for gas, so Croatia too, from 2007, gradually began to apply EU guidelines and has since joining the Union in 2013 at a greater pace carried out liberalisation, which will end by 2017 in the abolition of any monopoly on gas supply. By 2015 the supply and distribution sectors have on the whole liberalised. This created conditions for improving competition, reducing purchase price of gas and for reducing transport costs (by the building of new gas pipelines and an LNG terminal) as well as the development of a local market, if a major find of gas should be made in the Adriatic. Today in the gas industry in Croatia 99 corporations are operating. These firms were founded as joint stock or limited liability companies, and are privately owned or else owned by central or local government.

The main objective of this paper is to analyse financial reports of the firms in the gas sector from 2010 to 2015 and so to determine the changes in the size and structure of the market and the degree of liberalisation of the market for gas in Croatia. The results of the analyses reveal that

the liberalisation has *changed the structure of the gas market, particularly in the context of supply and distribution where it is gradually changing to oligopoly*. The liberalisation has been conducted in order to open the market to increased number of firms and their exposure to market competition. However, it is questionable to what extent is the current market structure the result of liberalisation. Instead of opening the market to significantly higher number of equally strong market participants, so far, the liberalisation processes have resulted only with the switch in the ownership structure of the dominant market player. The gas market therefore remains highly concentrated, but dominated now by private instead of partially-state-owned firms.

Application of EU guidelines on the liberalisation of the gas market in Croatia

Since 1998, the market for natural gas has been gradually liberalised in the European Union. In that year Directive 98/30/EC was adopted, the object of which was to open up the market by giving consumers (retail and corporate) freedom of choice in gas supply service providers. An additional objective of the Directive was the creation of an institutional groundwork for the creation of new business opportunities and the strengthening of cross-border trade, price competitiveness, ensuring higher standards of service and security of supply. The Directive laid down the rules for gas wholesale supply, transport, storage, distribution and retail supply.

The Directive established the foundations for further liberalisation and reform of the gas market (Banovac, 2006). States made it imperative for integrated gas undertakings to keep separate accounts for their different gas activities to weaken any potential monopoly, to make sure of non-discriminatory rules for the development of new gas infrastructure systems as well as access to the transport pipelines.

Liberalisation and opening up of the gas market was continued and improved in the second Directive, 2003/55/EU. This directive laid stress on the importance of complete legal opening of national markets for gas in the EU. It advised member states to carry out deregulation, that is, the determination of the criteria for the attainment of the status of privileged consumer, to step up the implementation of the book-keeping and legal separation, increase the powers of the regulatory bodies and address the application of a regulated system for third parties to access transport and distribution network, LNG and storage systems, with clearly defined tariffs, the objective being to prevent discrimination.

Privileged customers were defined in the liberalisation process. These customers had the freedom to purchase gas and to select their suppliers. Directive 2003/55/EC (in article 23) recommended states to keep the status of privileged customers until July 1, 2004, with the note that they annually (up to January 31) publish criteria for saying who the privileged customers are. Since the directive came into force, the threshold for entry into the group of privileged customers has gradually been lowered from 25 million to 15 million cubic metres a year in a period of five years, and 5 million cubic metres in a period of 10 years. So as to avoid disequilibrium in the opening of the gas market, contracts to supply privileged customers in the system of a second member state were not to be forbidden, and they became privileged customers in both states.



Further efforts of the EC to liberalise the gas market can be seen in the adoption of the third Directive, EC 2009/73/EC, concerning common rules for the internal market in natural gas. In the new directive, it was stressed that national regulators could adopt decisions about all regulatory issues so that the internal market for natural gas should function properly. Such authorities were assigned to the regulator, for the internal market of natural gas of member states can sometimes be exposed to the risk of weak transparency and illiquidity.

Implementation of the guidelines in Croatia

Directive 2009/73/EC was implemented into Croatian legislation through the Gas Market Act (OG 28/13, 14/14). The gas market was organised in such a way that customers became able to freely select their gas supplier. The law defined the legal and accounting separation of entities in the different gas activities. The activity of the gas storage system operator, the LNG terminal operator and the distribution system operator, including an operator that is part of a vertically integrated entity, has to be organised in an independent legal entity, independently of other activities in the gas sector. The law lays down the rules and measures for safe and reliable production, transport, storage, LNG terminal management, gas distribution and supply, and the organisation of a gas market that is part of the overall gas market of the European Union.

By government decisions, relationships on the wholesale gas market were defined. The government defined the obligations of producers to natural gas in the sale of gas to a supplier on the wholesale gas market (OG 29/14). In a decision defining suppliers on the wholesale market (OG 27/14), the government confided this role to a single state owned corporation – Hrvatska elektroprivreda d.d. (HEP)¹. HEP is bound to sell gas according to regulated conditions to suppliers in the public service of the needs of buyers from the household category and to ensure a reliable and safe supply, including the import of gas into Croatia. The government decision restricted the entry of other participants onto the market and confirmed the HEP monopoly on the wholesale gas market down to March 31, 2017. The government adopts a Decision on the price of gas according to which the producer of natural gas produced in Croatia is bound to sell to a supplier on the wholesale gas market (OG 27/16). This decision also regulates the price of gas according to which the supplier on the wholesale market is bound to sell gas to suppliers in the public service of gas supply to buyers in the household category.

The Gas Market Act prescribed the nature of energy activities in the gas sector: they are carried out as public services and as market services².

The Croatian Energy Regulatory Agency (CERA) issues, extends and transfers licenses for the performance of energy activities, withdraws licenses temporarily or permanently and supervises energy entities in the performance of their energy activities. CERA has, until 2016, issued 100 licenses for performing energy activities in the gas market. Most of the licenses were given in gas supply (56) and the gas distribution (35). From 2010 to 2016, there was a significant rise in the number of licenses issued for the performance of an activity.

¹ HEP took over this role from INA prirodni plin d.o.o. and became the chief supplier and an essential link in the Croatian gas market.

² *Public services* are the transport of gas, distribution, organisation of the gas market, supply of gas (except for supply of gas to end users), storage of gas and management of the LNG terminal. *Market services* are the production of gas, production of natural gas, commerce in gas, supply of gas to end users (except for gas supply in the public service) and the guaranteed supply of gas, storage of gas and management of the LNG terminal.

The main participants in the Croatian gas market

In parallel with the process of joining the EU, from 2007 onwards, there was a gradual liberalisation of the gas market and the introduction of prices formed on the market. Liberalisation of the market created the conditions for increasing competition, reducing the procurement price for gas and the lowering of transport costs (the development of new gas lines, LNG terminals). The government has had a powerful influence on the gas market and its liberalisation, particularly to do with setting the “rules of the game”.

Today 100 firms are engaged in the gas business in Croatia. These firms were established as joint stock or limited liability companies. There are companies that are owned by private interests, the national government or local government units and obtained a license for the conduct of this activity (for 3, 5, 7 or 15 years) from the regulatory agency. Up to 2016, the supply and distribution of gas were liberalised.

Table 1 Status and kind of firm on the gas market

Kind	2015	2016
Total	96	99
Private	33	37
State	49	49
Mixed	14	14
Licenses per activities		
Supply	45	55
Distribution	37	35
Production	1	1
Delivery and sale from own production	1	1
Wholesale supply of natural gas	1	1
Storage	1	1
Transport	1	1
Commerce	2	5 ³
LNG terminal management	0	1
Total	88	100

Note: The number of firms per market segment is listed, and so there is some possibility that the same firms are listed several times (if they deal with activities within different segments).

Source: Drawn up by the authors on the basis of CERA data

Since there are some indications that the operations of a firm depended a great deal on ownership structure, firms covered by the analysis were divided according to ownership type into state owned, mixed (minority state owned) and private.

According to the Gas Market Act (OG 28/13, 14/14), *gas production* means the production, delivery and sale of gas, excluding the production of natural gas. INA – Industrija nafte d.d. is the only *producer of natural gas in Croatia*. A new licence for the production of natural gas was issued to INA on December 10, 2014, and it will be good for the subsequent seven years.⁴

³ In 2015 two companies (KV and Alpiq) obtained a license to trade in gas, and in 2016 licenses were obtained also by 3 more foreign firms (GEOPLIN, Ljubljana; RWE – Germany, and gaSolutions-Austria).

⁴ According to the decision on the price of gas at which a producer of natural gas has to sell the natural gas produced in Croatia to a supplier on the wholesale gas market (OG 27/16), INA d.d. sells natural gas to HEP d.d. at a price of 0.1369 kn/kWh. The decision will be in force from April 1, 2016 to March 31, 2017.



Pursuant to a contract with HEP d.d., the company HEP-Opsrkba plinom d.o.o. carries out in the name and for the account of HEP d.d. operations of *supplier on the wholesale market*. In professional circles it is therefore called the “supplier of suppliers”. The decision determining the obligation of the producer of natural gas to sell natural gas to the supplier on the wholesale market (OG 29/14) defines the annual and daily quantities that INA d.d. has to sell to the wholesale market supplier (HEP d.d.). The supplier is allowed an annual deviation in the range of +/-10% and a daily of +/-15%. The place for the delivery is a virtual point⁵ that is defined by the Rules on the organisation of the gas market (HROTE, 12/2014) and the Network rules for of the transport system (PLINACRO, 2/2016).

Fifty five companies carry out gas supply. Most of the companies have five-year licenses, while 8 firms have 15-year licenses. Of the total of 55 firms, 21 are privately owned, 23 state owned, and 8 are in mixed ownership. According to the Gas Market Act (OG 28/13, 14/14), *supply* is the sale or re-sale of gas to a customer, including LNG. Supply in the obligation of public service is the supply of gas that is carried out under regulated conditions to households and supply of gas to those energy entities, legal and natural persons, through which thermal energy produced from gas is supplied to households.

When the Croatian market was liberalised, new players got into the game. In the next three years all local gas distributors had to buy gas for households at regulated prices that were lower than market prices. Three new competitors to HEP (GEN-I, RWE Energija and MET Croatia Energy Trade d.o.o.) obtained licenses from CERA to supply gas, but not until 2017 will they be able to supply the household sector (at the moment they can only supply corporate users).

Particularly standing out among the suppliers is Prvo plinarsko drustvo d.o.o. (PPD d.o.o.). The considerable advance made by this company in its operations can be ascribed to the signing of a binding agreement between PPD d.o.o. and E.ON. Ruhrgas Group (below, E.ON), which will deliver natural gas to PPD d.o.o. This competition has called the years-long INA (via Prirodni plin d.o.o.) monopoly into question. Later, contracts were signed with Gazprom, MVM and other European partners. The possibility of a change of gas supplier in the corporate users sector in Croatia has lasted several years, and has been made use of by more than 500 big companies. The major savings that can be made in gas consumption bills are increasingly being recognised by small and medium-sized firms. *Because of the current legislation, only business users can be supplied on the market, since the gas supply for households is regulated up to 2017 making supply according to market principles impossible.*

Gas distribution is a regulated energy activity that is carried out as a public service. Thirty five companies have obtained a license for gas distribution from CERA, 22 of them owned by the state, 6 in mixed and 7 in private ownership.

Trade in gas has since 2016 been conducted by two foreign companies (the Slovene Geoplin d.o.o. and the German RWE Supply and Trading GmbH), given three –year licenses by CERA. Natural gas transport is a regulated energy activity that is carried out as a public service. The operator of the gas transport system of Croatia is the firm Plinacro d.o.o., owned by the state.

⁵ Favouring the development of the gas market, the wholesale in particular, is the introduction of gas trading at the virtual trading point. This is a virtual place within the gas system determined for trading. Transactions are agreed on bilaterally and carried out by a system that is provided by the operator of the gas market, HROTE d.o.o. With respect to the development of the retail market, the system of exchange of data has been improved, and since February 2014, an electronic platform for the exchange of data between participants in the gas supply came into force.

The total length of the gas transport system in Croatia at the end of 2014 came to 2,964 km. The price of gas transport for an individual user of the transport system is defined in accordance with an established methodology, according to previous lease and real use of the capacities of the transport system in a given year. ⁶

Natural gas storage is carried out as a public service. Since 2009 the operator of the gas storage system is Podzemno skladište plina d.o.o. Since April 2014, besides the state-owned firm Prirodni plin d.o.o., new users have appeared – Hrvatska elektroprivreda d.d., Prvo plinarsko društvo d.o.o. and MET Croatian Energy Trade d.o.o. The ability to use storage capacity enables flexibility in gas retailing and wholesaling. In 2009 the government adopted its Rules on the Use of the Gas Storage System (OG 50/00).

Size and structure of the market

Below the size and structure of the gas structure are analysed. Included in the scope are all the firms that have obtained from CERA a license to carry out an activity (according to Table 1), apart from the firms INA d.d., HEP d.d., Vetropack Straza d.d., Radnik d.d., Petrokemija d.d. and Elektrometal d.d. These are firms that deal dominantly with other activities (unrelated to the gas sector), which makes them incomparable with other firms in the group. Instead of INA d.d., the analysis takes in the firm Prirodni plin d.o.o. (up to 2014, for then it was merged with INA d.d. and their financial reports were consolidated). Inside the HEP d.d. group, HEP trgovina d.o.o., HEP PLIN d.o.o. and HEP opskrba plinom d.o.o. are analysed.

Almost four thousand people are employed in the gas market. Most of the employees are in the state owned firms and the mixed ownership firms sector, although the number of employees in firms in mixed and state ownership is being sharply reduced, and the number employed in the private firms is rising. From a look at individual segments of the gas market it is easy to conclude that the largest number of employees are in the gas supply and distribution part.

Table 2 Number of employed in the gas market from 2012 to 2015

Segment	2012	2013	2014	2015
Supply	2,019	2,029	1,908	1,842
Distribution	1,542	1,506	1,475	1,471
Trade/Commerce	2	2	1	1
Storage	65	63	62	61
Transport	267	277	275	277
Gas market organisation	24	28	28	36
Total	3,919	3,905	3,749	3,736
Kind of ownership				
Private	451	489	517	517
State	2,508	2,481	2,373	2,344
Mixed	960	935	859	875

Source: Financial Reports of firms for the period from 2012 to 2015

⁶ In 2004 the total average price of gas transport for all users of the transport system was 0.0226 kn/kWh.



In 2015 firms in the gas sector made over 13.6 bn kuna revenue, only a minor part of which does not refer to revenue from sales (table 3). Total expenses came to 12.8 bn kuna, and the aggregate net profit was 0.65bn kuna. HEP d.d. as the supplier of suppliers made on average earnings of 0.5bn kuna, and if it were included in the analysis the total earnings would be far higher.

Table 3 Size and structure of the market (in bn kuna)

	2010	2011	2012	2013	2014	2015
Total revenue	12.92	14.81	16.10	16.21	11.96	13.62
Revenue from sales	12.28	14.03	15.48	15.37	11.33	12.94
Total expenditures	13.10	14.69	16.94	16.63	11.52	12.83
Net profit/loss	-0.23	0.08	-0.89	-0.47	0.35	0.65
Total assets	15.42	15.78	16.66	16.52	15.33	15.57
Liabilities	8.64	9.15	10.95	11.05	7.61	7.42
Financial liabilities (loans)	3.36	3.56	3.57	3.81	3.96	3.94
Total capital and reserves	4.56	4.57	3.69	3.23	6.10	6.63

Source: Financial reports of firms for the period from 2010 to 2015

Total revenue and revenue from sale rose from 2010 to 2013, and yet in 2014 a sharp fall was recorded because of the merger of Prirodni plin d.o.o. with INA d.d. Changes resulting from this transaction are reflected in other observed aggregate categories from the liabilities of the balance sheet (assets, liabilities and capital).

In 2015 the asset value of firms in the gas section was 15.6bn kuna. Total aggregate liabilities of the firms were about 7.5bn kuna, of which a bit less than 4bn kuna related to financial liabilities (mainly loans). Capital and reserves were constantly on the rise, and in 2015 came to about 6.6bn kuna.

The Size and structure of the gas supply and distribution sector

Although in Croatia firms are currently operating in various sub-sectors (activities) of the gas sector, only the gas supply and distribution sectors can really be characterised as sectors. On the whole it is just a single firm (a monopolist) that deals with the other activities, and an insight into the operation of these activities can be acquired in individual examinations of the financial reports of the companies that deal with them. Because the objective of the paper is to analyse changes in the size and structure of the market as a result of the liberalisation of the gas market in Croatia, sectoral analysis is carried out below only for the activities of gas supply and distribution, which were in the period under observation (2010-2015) caught up in the currents of liberalisation. In 2016, 90 firms are operating in these two sectors.

Figure 1 Sales revenues from firms from the gas supply sector from 2010 to 2015 (in bn kuna)



Source: Financial reports of firms for the period from 2010 to 2015

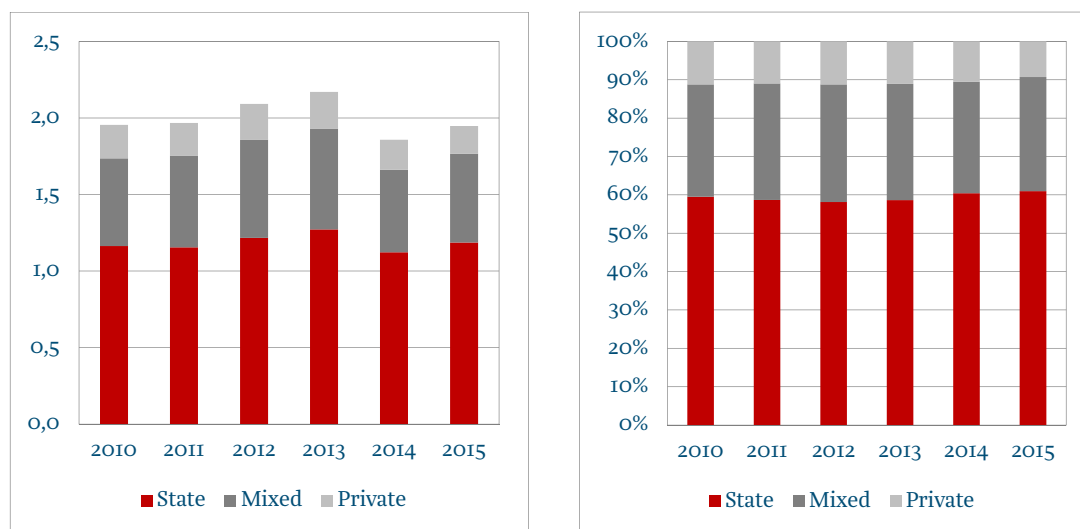
Firms in the supply of gas had in the period 2010-2015 average annual revenue of 11bn kuna. From an examination of the gas supply market structure, it is obvious that liberalisation has increased the share of private firms, while firms in which the state has a minority shareholding are gradually being forced out of the market (figure 1). While in 2010 private companies had a less than 10% market share, in 2015 about 70% of the market was in the hands of the private sector. Responsible for such an about turn in the structure of the market was the firm Prvo plinarsko drustvo d.o.o. (First gas co. Ltd.), whose sales revenues rose from 51 million kuna in 2011 to almost 4bn kuna in 2015. This made the firm the dominant market player, controlling more than a third of the whole gas supply market in Croatia.

Other important market participants in this part are the firm Prirodni plin d.o.o. which in 2014 had 2.6bn kuna revenue from sales, and Gradska plinara Zagreb – opskrba, with a revenue of 1.2bn kuna, Crodux plin d.o.o. with 821 million kuna and GEN-I Zagreb d.o.o. with 764 million kuna revenue from sales in 2014.

In 2013 a dominant role in the wholesale gas market, accounting for 80% of all quantities of gas sold, was taken by Prirodni plin d.o.o., and the remaining 20% was accounted for by the other seven suppliers. In the first quarter of 2014 the share of Prirodni plin d.o.o. was reduced to 68%, and then in the same year it fell to 55% and finally came to about 39%. The reduction of the share of Prirodni plin coincided with its merger with its parent firm, from which period it is not possible to track its financial operations, which are now integrated with INA-Mol.

The opening of the gas market is also clear at the retail level. During 2014, 1,825 changes of gas suppliers were noted (as against 2013, the rate of change had risen by about 250%). Because changes of suppliers were stepped up, there was a downward pressure on prices, and a rise in the number of companies dealing with gas supply is almost obvious.

Figure 2 Sales revenues of companies from the gas distribution sector from 2010 to 2015 (in bn kuna)



Source: Financial reports of firms for the period from 2010 to 2015

In the gas distribution sector, the market structure in the given period was much more stable (figure 2). Total sales revenues ranged around 2bn kuna, with the private sector taking about a 10% market share, the public sector 60%, with 30% going to private firms in which the state had a certain amount of equity.

The largest market share in 2015 was taken by HEP-Plin d.o.o., with 392 million kuna sales revenue, after which came Termoplin d.d., Gradska plinara Zagreb d.o.o. and Medimurje plin d.o.o., which had sales revenues of between 200 and 250 million kuna.

After this analysis of the market structure comes a detail description of the financial position and operations of firms from the gas supply and distribution sector.

Analysis of the operations of companies in the gas supply and distribution sector

Total assets of firms in gas supply fell from 7bn kuna in 2013 to 5.9bn kuna in 2015 (table 4). The reason for this reduction was mostly brought about by the reduction of current assets, to wit, in the inventories segment, as well as of short-term receivables. The firm Prirodni plin d.o.o. alone reduced its inventories from 2013 to 2014 (on the whole relating to domestic natural gas) from 950 to 40 million kuna, and short term receivables from 731 to 278 million kuna.

Table 4 Assets of firms from the gas supply sector from 2010 to 2015 (in million kuna)

	Year	Fixed assets	Current assets	Prepaid expenses of future period and accrued revenue	Total assets
State owned	2010	1,407	761	0	2,169
	2011	1,500	732	0	2,232
	2014	1,572	850	0	2,423
	2013	1,636	795	0	2,431
	2014	1,172	818	1	1,991
	2015	1,188	807	1	1,997
Mixed	2010	720	2,135	3	2,858
	2011	720	2,106	6	2,832
	2014	718	2,697	7	3,422
	2013	728	2,075	9	2,812
	2014	663	647	3	1,312
	2015	636	218	2	856
Private	2010	648	226	1	876
	2011	777	378	5	1,160
	2014	800	509	17	1,326
	2013	889	884	15	1,788
	2014	951	1,800	40	2,791
	2015	1,014	2,031	22	3,067
Total	2010	2,776	3,122	5	5,903
	2011	2,997	3,215	12	6,224
	2014	3,091	4,056	24	7,170
	2013	3,253	3,753	25	7,031
	2014	2,785	3,265	43	6,094
	2015	2,839	3,056	26	5,920

Source: Financial reports of firms for the 2010 to 2015 period

From April 1, 2014, Prirodni plin d.o.o. had a smaller gas storage capacity, since the public service distributor for customers from the household category (HEP d.d.) had the right to 70% of the storage space. Since it had no obligation to supply householders, Prirodni plin d.o.o. had no need for additional imports and storage.

It is worth recalling that figures for Prirodni plin d.o.o. relate to the period up to November 2014, for at the end of that year the company was merged with INA d.d. and their reports were consolidated, after which there are no publicly accessible figures about the operations of the gas business within the Ina Group.

The total assets of firms from the distribution sector grew and in 2015 came to almost 4bn kuna, of which the biggest part consisted of the fixed assets of firms owned by the state (table 5).

Table 5 Assets of firms from the gas distribution sector from 2010 to 2015 (in million kuna)

	Year	Fixed assets	Current assets	Prepaid expenses of future period and accrued revenue	Total assets
State	2010	2,045	425	1	2,471
	2011	1,998	420	1	2,418
	2014	1,978	453	1	2,432
	2013	2,010	435	1	2,446
	2014	1,976	491	1	2,468
	2015	2,000	539	1	2,540
Mixed	2010	641	192	2	835
	2011	637	201	2	840
	2014	631	242	2	874
	2013	637	213	2	851
	2014	643	211	2	857
	2015	617	204	1	823
Private	2010	313	84	0	397
	2011	357	101	0	458
	2014	363	107	0	471
	2013	406	224	0	630
	2014	528	122	0	650
	2015	502	96	0	598
Total	2010	3,000	701	3	3,703
	2011	2,992	721	3	3,716
	2014	2,972	802	3	3,777
	2013	3,053	872	3	3,927
	2014	3,148	824	3	3,975
	2015	3,119	839	3	3,962

Source: Financial reports of firms for the 2010 to 2015 period

Total capital of firms from the gas supply sector in 2014 was negative and came to about -1.6bn kuna. This means that the sector made a loss above equity value (table 6). This indicates the strong turbulence that in recent times has overtaken the gas supply sector. A cumulative loss above equity value was made in the mixed ownership firms sector. An examination of analytical records (per entity) reveals that this situation was caused almost entirely by the loss-making operations of the firm Prirodni plin d.o.o., which in 2014 made a loss above equity value of 3.2bn kuna.

If it covered all its liabilities out of assets, the firm would still be 3.2bn kuna in debt. Most of these liabilities consist of short term liabilities (about 3.6bn kuna) most of which consist of liabilities to associated companies, i.e. to INA d.d., in the amount of 2.9bn kuna for purchase of natural gas. On May 25, 2011, the company had entered into a contract with INA d.d. about a loan worth 700 million kuna (at an interest of three-month ZIBOR plus 4%) and short term liabilities on this basis in 2014 came to about 685 million kuna.

In 2015, Prirodni plin d.o.o. was removed from the analysis (because data, after the consolidation with INA d.d., were no longer available), which was reflected in the aggregate value of capital that for all other firms in the supply sector was positive and stood at 1.8bn kuna (table 6).

Table 6 Liabilities and capital/equity of firms from the gas supply sector from 2010 to 2015 (in million kuna)

	Year	Capital and reserves	Provisions	Long term liabilities	Short term liabilities	Accrued expenses and deferred revenue	Total - liabilities
State owned	2010	558	6	229	930	445	2,169
	2011	547	7	256	922	500	2,232
	2014	550	7	285	1,052	530	2,423
	2013	619	9	318	685	801	2,431
	2014	602	11	384	683	311	1,991
	2015	672	13	393	627	292	1,997
Mixed	2010	-375	129	117	2,781	206	2,858
	2011	-387	16	743	2,253	207	2,832
	2014	-1,429	16	811	3,815	208	3,422
	2013	-2,233	15	660	4,158	212	2,812
	2014	-2,787	14	106	3,843	136	1,312
	2015	402	13	99	213	129	856
Private	2010	318	7	323	212	16	876
	2011	348	1	441	364	7	1,160
	2014	426	1	457	425	16	1,326
	2013	494	2	579	684	29	1,788
	2014	578	1	611	1,560	41	2,791
	2015	752	2	548	1,704	62	3,067
Total	2010	502	142	670	3,923	666	5,903
	2011	508	23	1,440	3,539	714	6,224
	2014	-453	23	1,554	5,292	754	7,170
	2013	-1,121	26	1,558	5,527	1,042	7,031
	2014	-1,607	25	1,101	6,086	489	6,094
	2015	1,825	28	1,039	2,544	483	5,920

Source: Financial reports of firms for the 2010 to 2015 period

Total capital of firms from the distribution sector in 2015 came to 1.6bn kuna (table 7). The structure of liabilities in the distribution sector is not significantly affected by turbulence although a considerable rise in long-term liabilities can be observed. Notwithstanding this, the rise in total liabilities has been accompanied by a growth in equity and from just the review of the balance sheet no very significant operational problems can be seen. From this point of view what is interesting is nevertheless the fairly large amount of deferred income, which is constantly on the decline, and yet in 2015 still came to about 900 million kuna. On the whole this is composed of the deferred income of Gradska plinara Zagreb d.o.o. in the amount of 565 million kuna. This deferred income relates to income from the gas pipeline, connections, regulators by connections and gas meters the procurement and building of which was financed by the city of Zagreb and others. Abolition of deferred income for the sake of income is carried out in the amount of the calculated depreciation of these assets.



Table 7 Liabilities and capital of firms from the gas distribution sector from 2010 to 2015 (in million kuna)

	Year	Capital and reserves	Provisions	Long-term liabilities	Short-term liabilities	Accrued costs and deferred revenue	Total – liabilities
State owned	2010	682	49	203	361	1.175	2.471
	2011	677	52	229	360	1.101	2.418
	2014	675	59	257	422	1.019	2.432
	2013	755	68	302	386	935	2.446
	2014	773	75	355	401	865	2.468
	2015	938	76	381	369	776	2.540
Mixed	2010	406	16	108	163	142	835
	2011	393	15	106	186	140	840
	2014	385	16	107	229	138	874
	2013	390	15	102	214	130	851
	2014	401	14	101	217	125	857
	2015	396	13	94	201	118	823
Private	2010	183	0	118	95	1	397
	2011	217	1	135	105	1	458
	2014	230	1	118	122	1	471
	2013	212	1	265	149	3	630
	2014	286	1	248	112	4	650
	2015	300	2	203	88	5	598
Total	2010	1.271	65	429	620	1.318	3.703
	2011	1.287	68	469	651	1.242	3.716
	2014	1.290	75	482	773	1.158	3.777
	2013	1.357	84	669	749	1.068	3.927
	2014	1.459	89	704	730	994	3.975
	2015	1.635	91	679	658	899	3.962

Source: Financial reports of firms for the 2010 to 2015 period

Total revenue of firms from the gas supply sector in 2015 came to 10.4bn kuna (table 8). Most of the revenue (99%) was accounted for by operating revenue, and other categories of income were not analysed in detail. Something similar applies to the structure of total expenses. The net result at the whole-sector level is negative in all the years given (except in 2015), which might suggest an erroneous and premature conclusion that gas supply is an unprofitable operation. A more detailed analysis of the structure, with respect to ownership, can reveal that the loss is mainly generated in the sector of firms in which the state is a minority shareholder. In concrete terms, the poor performance of the sector as a whole is mainly the result of the inexplicably poor operations of Prirodni plin d.o.o., which is proven by the positive results of operations of the sector in 2015 when Prirodni plin d.o.o. was excluded from the analysis.

Table 8 Business operations of firms from the gas supply sector from 2010 to 2015 (in million kuna)

	Year	Total revenue	Operating revenue	Total expenditure	Operational expenditure	Net profit/loss for the period
State owned	2010	2,565	2,549	2,561	2,544	2
	2011	2,582	2,560	2,574	2,555	5
	2014	2,785	2,764	2,773	2,754	7
	2013	2,980	2,953	2,936	2,916	36
	2014	2,555	2,517	2,510	2,462	34
	2015	2,648	2,604	2,552	2,523	77
Mixed	2010	6,536	6,526	6,887	6,867	-355
	2011	7,753	7,734	7,760	7,724	-11
	2014	8,271	8,251	9,306	9,250	-1,038
	2013	7,051	7,034	7,837	7,789	-790
	2014	3,223	3,216	3,766	3,726	-548
	2015	653	646	614	602	32
Private	2010	686	674	726	688	-42
	2011	1,211	1,202	1,225	1,199	-16
	2014	1,787	1,773	1,757	1,712	27
	2013	2,875	2,847	2,786	2,738	79
	2014	5,764	5,695	5,632	5,531	109
	2015	7,128	7,007	6,831	6,673	236
Total	2010	9,786	9,750	10,175	10,098	-395
	2011	11,546	11,496	11,560	11,477	-22
	2014	12,843	12,788	13,835	13,716	-1,004
	2013	12,906	12,834	13,559	13,443	-674
	2014	11,541	11,428	11,908	11,720	-405
	2015	10,429	10,257	9,996	9,797	345

Source: Financial reports of firms for the 2010 to 2015 period

From the last available auditors' report for Prirodni plin d.o.o. (for the incomplete year 2014) some of the reasons for the decline of this company can be seen. The main reason was the liberalisation of the gas market, because of which the company lost an important market share. Profit margins on the market declined sharply, and in 2014 because of the negative price margin, and forcible sale of gas from inventories, the continuity of its operations was called into question and it was merged with INA d.d. Namely, Prirodni plin d.o.o. had excessive inventories in storage (considering the capacity available to it) and was forced to sell around 177 million cubic metres of gas (about the amount of the annual consumption of households in the city of Zagreb) at a price of 0.87 kuna/m³, which was much lower than the price at which the gas had been bought.

In the *gas distribution sector*, a revenue of more than 2bn kuna a year is made (table 9). Most of this revenue is made by state-owned firms, and then those in mixed ownership, and the smallest amount (about 200 million kuna) by privately owned firms. It should be pointed out that state owned firms operate with rising profit, while private firms generate losses that increase year after year. Aggregate figures however indicate considerable improvements in performance in 2015 for all kinds of ownership



Table 9 Operations of firms from the gas distribution sector from 2010 to 2015 (in million kuna)

	Year	Total revenue	Operating revenue	Total expenditure	Operational expenditure	Net profit/loss for the period
State owned	2010	1,366	1,359	1,362	1,353	1
	2011	1,340	1,328	1,313	1,302	20
	2014	1,383	1,373	1,363	1,351	14
	2013	1,443	1,433	1,415	1,404	23
	2014	1,285	1,276	1,251	1,238	25
	2015	1,350	1,340	1,224	1,214	100
Mixed	2010	621	613	628	620	-10
	2011	647	638	655	645	-11
	2014	688	679	689	676	-4
	2013	704	693	687	675	13
	2014	578	572	557	546	16
	2015	620	613	581	569	32
Private	2010	225	220	228	217	-4
	2011	236	232	244	232	-8
	2014	244	240	252	239	-9
	2013	252	244	261	238	-10
	2014	216	208	238	220	-23
	2015	193	185	190	173	1
Total	2010	2,212	2,192	2,219	2,190	-14
	2011	2,223	2,198	2,211	2,178	2
	2014	2,315	2,292	2,305	2,266	1
	2013	2,398	2,369	2,363	2,316	26
	2014	2,079	2,056	2,045	2,004	18
	2015	2,162	2,138	1,995	1,956	133

Source: Financial reports of firms for the 2010 to 2015 period

Below we provide selected financial ratios for firms in the supply of gas, followed by an overview of the same ratios for firms in the distribution subsector.

Liquidity ratios measure the ability of a firm to meet its short-term liabilities. The current ratio is the ratio of short-term assets and short-term liability. A current ratio of less than 1.5 suggests potential liquidity problems. In addition, a ratio of more than 1 shows that some of the short-term assets are financed with long-term sources, which is a reflection of prudent financial management.

In the gas supply sector, the cumulative value of the current ratio is less than 1 in the whole of the period, except in 2015 (table 10). Firms from the private sector have a somewhat better liquidity position than the other firms (the current ratio is on the whole a bit above 1). The cash ratio shows which part of short-term liabilities can be covered with the most liquid asset – cash. At the level of the supply sector, in the given period, 3 to 15% of short-term obligations could be covered with cash, with private sector firms considerably improving the picture.

The debt or leverage ratios show the structure of capital, i.e., the way in which a firm finances its assets. The debt ratio is the ratio of total liabilities and total assets and reveals the measure in

which a firm uses debt as a form of financing. The greater the ratio of debt to assets, the greater the firm's or sector's credit risk, a level of up to 0.5 being considered acceptable (prudent).

The debt ratio in the supply sector was constantly on the rise and in 2014 came to 1.19. This means that liabilities are larger than assets, i.e. the value of capital is negative. The reason for this was primarily the rapid collapse of the operations of Prirodni plin d.o.o., which dominated the sector of firms in which the state had a minority shareholding. Other firms were in a much better condition, the state owned firms sector proving to have been much more cautious in exposing itself to risk by taking on debt, while firms from the private sector relied much more on debt financing. This is naturally reflected in the debt to equity ratio, which in conservative outlines should come to 1, while a ratio of 2 is usually described as the upper limit. State owned firms reduced the value of this ratio below 2, while private firms consistently exceed the ratio, which in 2014 came to as much as 3.76. The exclusion of Prirodni plin d.o.o. from the analysis in 2015 was greatly reflected in the value of this ratio.

Average days to sell the inventory measures the time need for inventories to be turned into revenue. Naturally, lower values of this indicator are desirable. At the sub-sector of state owned firms average days to sell the inventory was less than 2, and at the level of private firms about 11, at the level of mixed ownership (with a minority state holding) about 6 days. A drastic reduction of this indicator was observed at the level of firms with a minority state shareholding, primarily as a result of the compulsory sale of the inventories of Prirodni plin d.o.o.

Table 10 Financial indicators of the gas supply sector from 2010 to 2015

	Year	Current ratio	Cash ratio	Debt ratio	D/E	Days to sell the inventory	Collection period	Net profit margin	ROA (%)	ROE (%)
State owned	2010	0.82	0.04	0.53	2.08	2.65	95.44	0.1	0.1	0.3
	2011	0.79	0.04	0.53	2.15	2.53	89.01	0.2	0.2	0.9
	2014	0.81	0.05	0.55	2.43	2.13	86.29	0.2	0.3	1.2
	2013	1.16	0.06	0.41	1.62	1.92	78.45	1.2	1.5	5.8
	2014	1.20	0.20	0.54	1.77	1.72	86.71	1.3	1.7	5.6
	2015	1.29	0.26	0.51	1.52	1.86	78.29	2.9	3.8	11.4
Mixed	2010	0.77	0.01	1.02	-	41.88	44.87	-5.4	-	94.7
	2011	0.93	0.03	1.06	-	36.68	60.17	-0.1	-0.4	2.7
	2014	0.71	0.01	1.35	-	56.32	59.32	-12.6	-	72.7
	2013	0.50	0.01	1.72	-	51.95	47.99	-11.2	-	35.4
	2014	0.17	0.01	3.02	-	5.63	50.64	-17.0	-	19.7
	2015	1.02	0.22	0.36	0.77	5.47	87.73	4.9	3.8	8.0
Private	2010	1.07	0.14	0.61	1.68	10.09	43.41	-6.1	-4.8	-
	2011	1.04	0.09	0.70	2.32	9.98	35.38	-1.3	-1.4	-4.6
	2014	1.20	0.09	0.67	2.07	6.21	48.36	1.5	2.1	6.4
	2013	1.29	0.23	0.71	2.56	4.24	50.55	2.8	4.5	16.1
	2014	1.15	0.16	0.79	3.76	16.34	62.35	1.9	4.0	18.9
	2015	1.19	0.09	0.74	3.00	11.24	59.83	3.3	7.8	31.4
Total	2010	0.80	0.03	0.78	9.15	29.49	57.83	-4.0	-6.7	-
	2011	0.91	0.04	0.80	9.80	26.29	63.91	-0.2	-0.3	-4.2
	2014	0.77	0.03	0.96	-	37.88	63.54	-7.8	-	221.
	2013	0.68	0.04	1.01	-	29.68	55.54	-5.2	-9.6	60.2
	2014	0.54	0.07	1.19	-	10.20	64.22	-3.5	-6.7	25.2
	2015	1.20	0.15	0.61	1.96	8.58	66.06	3.3	5.9	18.9

Source: Financial reports of firms for the 2010 to 2015 period



Collection period measures the time necessary to convert sales into money. At the level of the supply sector as a whole, this period is about 2 months, with considerable differences related to type of ownership. Roughly, an increased share of the state in the ownership leads to a longer period required to collect receivables.

Profitability ratios measure the ability of a firm to make a certain level of profit as compared to its revenue, assets and equity. The net profit margin is the ratio of net profit and total revenue. The figures show that private firms are more profitable than state owned firms (except in the first two years, 2010 and 2011, when they made a loss).

Firms with minority state shareholding made a negative result in the whole of the period observed, mainly as a result of the negative operations of Prirodni plin d.o.o. It is similar with ratios of return on assets and equity – ROA and ROE. Rates of return on assets and equity are on the rise, for both state owned and privately owned firms, with the private firms getting much better results. State firms in 2015 managed to make a net profit of 3.8% on total assets, and private firms of 7.8%. Similarly, state firms had a return of 1.4% on equity, while private firms generated for their owners a return on equity of as much as 31.4% (table 10).

Table 11 Financial ratios of the gas distribution sector from 2010 to 2015

	Year	Current ratio	Cash ratio	Debt ratio	D/E	Days to sell the inventory	Collection period	Net profit margin	ROA (%)	ROE (%)
State owned	2010	1.18	0.07	0.23	0.83	6.03	83.77	0.1	0.0	0.1
	2011	1.17	0.09	0.24	0.87	5.95	80.91	1.5	0.8	3.0
	2014	1.07	0.11	0.28	1.01	4.69	85.44	1.0	0.6	2.1
	2013	1.13	0.15	0.28	0.91	4.72	76.66	1.6	0.9	3.0
	2014	1.22	0.29	0.31	0.98	4.70	85.56	1.9	1.0	3.2
	2015	1.46	0.46	0.30	0.80	4.79	73.56	7.4	4.0	10.7
Mixed	2010	1.18	0.19	0.33	0.67	5.24	88.05	-1.7	-1.2	-2.5
	2011	1.08	0.21	0.35	0.74	5.19	79.47	-1.7	-1.3	-2.8
	2014	1.06	0.16	0.38	0.87	5.65	96.29	-0.6	-0.5	-1.1
	2013	1.00	0.17	0.37	0.81	4.67	79.13	1.8	1.5	3.3
	2014	0.97	0.19	0.37	0.79	5.56	100.66	2.8	1.9	4.1
	2015	1.01	0.23	0.36	0.75	4.87	87.34	5.2	3.9	8.2
Private	2010	0.88	0.13	0.54	1.16	1.15	71.60	-2.0	-1.1	-2.4
	2011	0.96	0.17	0.52	1.11	2.76	73.00	-3.4	-1.7	-3.7
	2014	0.88	0.13	0.51	1.04	3.27	90.44	-3.6	-1.9	-3.8
	2013	1.50	0.92	0.66	1.95	4.28	76.54	-3.8	-1.5	-4.5
	2014	1.09	0.67	0.55	1.26	4.60	78.68	-10.5	-3.5	-7.9
	2015	1.10	0.62	0.49	0.97	4.08	69.98	0.3	0.1	0.2
Total	2010	1.13	0.11	0.28	0.83	5.25	83.66	-0.6	-0.4	-1.1
	2011	1.11	0.14	0.30	0.87	5.37	79.61	0.1	0.0	0.1
	2014	1.04	0.13	0.33	0.97	4.82	89.33	0.1	0.0	0.1
	2013	1.16	0.31	0.36	1.04	4.65	77.40	1.1	0.7	1.9
	2014	1.13	0.32	0.36	0.98	4.94	89.21	0.9	0.5	1.3
	2015	1.28	0.41	0.34	0.82	4.75	77.33	6.2	3.4	8.2

Source: Financial reports of firms for the 2010 to 2015 period

Firms in the gas distribution sector are as a whole more liquid than those in the supply sector. The current ratio is at the level of the distribution sector greater than 1 in the whole period, which means that part of the short-term assets is financed with long-term source of funding (table 11). The cash ratio shows that, in 2015, state firms could cover 46% of their short-term liabilities with money, mixed ownership firms 23% and privately owned companies as much as 62%, which is fairly good. The debt ratio and the D/E ratio reveal a fairly conservative (risk-averse) structure of capital of firms from the gas distribution sector, which in their financing predominantly rely on own sources. The average days to sell the inventory ratio comes to about 5 days for all sub-groups, and collection period ranged in 2015 from 70 to 87 days (about two and a half to three months). From this point of view, firms from the distribution sector collect their receivables practically a month later than firms from the supply sector. Profitability ratios (particular in respect of ROE) are much lower than in the supply sector, and differences with respect to kind of ownership are also noticeable. Firms in the private sector mostly operate at a loss (unlike state owned firms and those in which the state has a minority holding, whose profitability is improving over the course of time).

Conclusion

In the process of joining the EU, Croatia gradually liberalised the gas market, aiming to abolish state monopolies and introduce prices formed on the market, as well as to ensure a higher standard of service and greater supply security.

Liberalisation most of all took in the *gas supply sector*, as a result of which the market share of privately owned firms was increased. Firms in which the state has a minority holding have gradually been squeezed out. In parallel with the process of the gradual expansion of Prvo plinarsko društvo d.o.o., the firm Prirodni plin d.o.o. was gradually run down. Prvo plinarsko društvo d.o.o. has become the dominant market participant, controlling a third of the total gas supply market in Croatia. Now that Prirodni plin d.o.o. has been excluded from its scope, the gas supply sector in Croatia is solvent and non-indebted. The operations of the sector are appropriate and profitable, with the existence of certain differences with respect to the kinds of ownership (private firms generally being more profitable than state owned).

In the *distribution sector*, firms are as a whole still more solvent than those in the supply sector and have a conservative financing policy manifested in their dominant reliance on their own sources of funding. When the market structure of the distribution sector is considered, no important differences stemming from market liberalisation can be seen, because private sector firms constantly have about 10% of the market, mixed ownership firms about 30% and state owned firms 60%.

These analyses clearly show that liberalisation of the gas business have to a great extent resulted in changes in the activity of gas supply. In concrete terms, the greatest change relates to the switchover of the market positions of two companies – Prirodni plin d.o.o. and Prvo plinarsko društvo d.o.o., the first in mixed (until recently state) ownership and the second in private ownership.

Market processes in supply and distribution subsectors can also be observed in the framework of wider, geopolitical relationships and the global battle for market positioning of the world's great powers. In this regard, up to 2011, Prirodni plin d.o.o. was obtaining gas from Russia's



Gazprom, but from January 1, 2011, a new supplier was selected – ENI, from Italy. In this manner for several years Gazprom was more or less eliminated from the Croatian market. However, Gazprom made use of Prvo plinarsko društvo d.o.o. as a platform from which to get back onto the market. The partnership of Prvo plinarsko društvo d.o.o. and Gazprom from 2013 coincides with the expansion of this firm and the gradual extinction of Prirodni plin d.o.o. It can be concluded that changes in the Croatian gas market have been determined - to a great extent - not only by EU accession and the gradual liberalisation of the market but also by other, external, factors and circumstances that should certainly be borne in mind during any further liberalisation of the market and the formation of Croatian energy strategy.

References

- Banovac, E., 2006. Otvorenost tržišta plina-pregled bitnih značajki. *Plin*, 6 (1), 30-35.
- CERA, 2015. *Izveštće o radu Hrvatske energetske regulatorne agencije u 2014. godini.*
- CERA, 2016a. *Zbirni pregled Registra dozvola za obavljanje energetske djelatnosti.*
- CERA, 2016b. *Zbirni pregled Registra dozvola za obavljanje energetske djelatnosti.*
- Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC
- Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC (Text with EEA relevance).
- Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas.
- Metodologija utvrđivanja iznosa tarifnih stavki za distribuciju plina, OG 104/13.
- Metodologija utvrđivanja iznosa tarifnih stavki za javnu uslugu opskrbe plinom i zajamčenu opskrbu, OG 38/14.
- Odluka o cijeni plina po kojoj je proizvođač prirodnog plina prirodnog plin proizveden u Hrvatskoj dužan prodavati opskrbljivaču na veleprodajnom tržištu, OG 27/16.
- Odluka o određivanju obveze proizvođaču prirodnog plina prodaje prirodnog plina opskrbljivaču na veleprodajnom tržištu plina, OG 29/14.
- Odluka o određivanju opskrbljivača na veleprodajnom tržištu plina, OG 29/14.
- Podzemno skladište plina, 2014. *Pravila korištenja sustava plina.*
- Vlada RH, 2009a. *Prva izmjena i dopuna o međusobnim odnosima dioničara koji se odnosi na INA- Industrija nafte d.d.*
- Vlada RH, 2009b. *Prvi dodatak ugovora o plinskom poslovanju, 2009.*
- Zakon o tržištu plina, OG 14/14 and 28/14.

Appendix

Table A1 Liquidity ratios of the gas supply sector from 2010 to 2015

	Year	Current ratio	Quick ratio	Cash ratio	Financial stability ratio	Net working capital
State owned	2010	0.82	0.80	0.04	1.79	-169
	2011	0.79	0.77	0.04	1.87	-191
	2014	0.81	0.79	0.05	1.88	-202
	2013	1.16	1.14	0.06	1.75	110
	2014	1.20	1.18	0.20	1.19	135
	2015	1.29	1.27	0.26	1.12	180
Mixed	2010	0.77	0.50	0.01	-2.80	-646
	2011	0.93	0.60	0.03	2.02	-147
	2014	0.71	0.38	0.01	-1.16	-1,119
	2013	0.50	0.27	0.01	-0.46	-2,083
	2014	0.17	0.16	0.01	-0.25	-3,197
	2015	1.02	0.98	0.22	1.27	5
Private	2010	1.07	0.98	0.14	1.01	15
	2011	1.04	0.95	0.09	0.99	13
	2014	1.20	1.13	0.09	0.91	84
	2013	1.29	1.24	0.23	0.83	200
	2014	1.15	0.99	0.16	0.80	240
	2015	1.19	1.07	0.09	0.78	327
Total	2010	0.80	0.60	0.03	2.37	-801
	2011	0.91	0.68	0.04	1.54	-324
	2014	0.77	0.52	0.03	2.81	-1,237
	2013	0.68	0.50	0.04	7.45	-1,773
	2014	0.54	0.49	0.07	-5.50	-2,82
	2015	1.20	1.11	0.15	0.99	512

Source: Financial reports of firms for the 2010 to 2015 period



**Table A2 Liquidity ratios of the gas distribution sector
from 2010 to 2015**

	Year	Current ratio	Quick ratio	Cash ratio	Financial stability ratio	Net working capital
State owned	2010	1.18	1.12	0.07	2.31	64
	2011	1.17	1.11	0.09	2.21	60
	2014	1.07	1.03	0.11	2.12	30
	2013	1.13	1.08	0.15	1.90	49
	2014	1.22	1.19	0.29	1.75	90
	2015	1.46	1.42	0.46	1.52	170
Mixed	2010	1.18	1.13	0.19	1.25	29
	2011	1.08	1.04	0.21	1.28	15
	2014	1.06	1.01	0.16	1.28	13
	2013	1.00	0.96	0.17	1.29	-1
	2014	0.97	0.94	0.19	1.28	-6
	2015	1.01	0.98	0.23	1.26	3
Private	2010	0.88	0.87	0.13	1.04	-11
	2011	0.96	0.94	0.17	1.02	-5
	2014	0.88	0.87	0.13	1.04	-14
	2013	1.50	1.48	0.92	0.85	75
	2014	1.09	1.07	0.67	0.99	11
	2015	1.10	1.07	0.62	1.00	9
Total	2010	1.13	1.09	0.11	1.76	81
	2011	1.11	1.06	0.14	1.70	70
	2014	1.04	1.00	0.13	1.68	29
	2013	1.16	1.13	0.31	1.51	123
	2014	1.13	1.10	0.32	1.46	95
	2015	1.28	1.24	0.41	1.35	181

Source: Financial reports of firms for the 2010 to 2015 period

**Table A3 Leverage ratios of the gas supply sector
from 2010 to 2015**

	Year	Leverage ratio	Own funds	D/E
State owned	2010	0.53	0.26	2.08
	2011	0.53	0.25	2.15
	2014	0.55	0.23	2.43
	2013	0.41	0.25	1.62
	2014	0.54	0.30	1.77
	2015	0.51	0.34	1.52
Mixed	2010	1.02	-0.13	-7.74
	2011	1.06	-0.14	-7.74
	2014	1.35	-0.42	-3.24
	2013	1.72	-0.80	-2.16
	2014	3.02	-2.13	-1.42
	2015	0.36	0.47	0.77
Private	2010	0.61	0.36	1.68
	2011	0.70	0.30	2.32
	2014	0.67	0.33	2.07
	2013	0.71	0.28	2.56
	2014	0.79	0.21	3.76
	2015	0.74	0.25	3.00
Total	2010	0.78	0.09	9.15
	2011	0.80	0.08	9.80
	2014	0.96	-0.06	-15.12
	2013	1.01	-0.16	-6.32
	2014	1.19	-0.27	-4.47
	2015	0.61	0.31	1.96

Source: Financial reports
of firms for the 2010
to 2015 period



**Table A4 Leverage ratios of the gas distribution sector
from 2010 to 2015**

	Year	Leverage ratio	Own funds ratio	D/E
State owned	2010	0.23	0.28	0.83
	2011	0.24	0.28	0.87
	2014	0.28	0.28	1.01
	2013	0.28	0.31	0.91
	2014	0.31	0.31	0.98
	2015	0.30	0.37	0.80
Mixed	2010	0.33	0.49	0.67
	2011	0.35	0.47	0.74
	2014	0.38	0.44	0.87
	2013	0.37	0.46	0.81
	2014	0.37	0.47	0.79
	2015	0.36	0.48	0.75
Private	2010	0.54	0.46	1.16
	2011	0.52	0.47	1.11
	2014	0.51	0.49	1.04
	2013	0.66	0.34	1.95
	2014	0.55	0.44	1.26
	2015	0.49	0.50	0.97
Total	2010	0.28	0.34	0.83
	2011	0.30	0.35	0.87
	2014	0.33	0.34	0.97
	2013	0.36	0.35	1.04
	2014	0.36	0.37	0.98
	2015	0.34	0.41	0.82

Source: Financial reports of firms for the 2010 to 2015 period

**Table A5 Activity ratios of the gas supply sector
from 2010 to 2015**

	Year	Asset turnover ratio	Current asset turnover ratio	Fixed asset turnover ratio	Inventory turnover ratio	Days to sell the inventory	Receivables turnover ratio	Collection period
State owned	2010	1.18	3.37	1.82	137.79	2.65	3.82	95.44
	2011	1.16	3.53	1.72	144.22	2.53	4.10	89.01
	2014	1.15	3.28	1.77	171.38	2.13	4.23	86.29
	2013	1.23	3.75	1.82	189.95	1.92	4.65	78.45
	2014	1.28	3.12	2.18	212.55	1.72	4.21	86.71
	2015	1.33	3.28	2.23	196.47	1.86	4.66	78.29
Mixed	2010	2.29	3.06	9.07	8.72	41.88	8.13	44.87
	2011	2.74	3.68	10.77	9.95	36.68	6.07	60.17
	2014	2.42	3.07	11.51	6.48	56.32	6.15	59.32
	2013	2.52	3.40	9.69	7.03	51.95	7.61	47.99
	2014	2.46	4.98	4.86	64.81	5.63	7.21	50.64
	2015	0.76	3.00	1.03	66.73	5.47	4.16	87.73
Private	2010	0.78	3.03	1.06	36.19	10.09	8.41	43.41
	2011	1.05	3.21	1.56	36.59	9.98	10.32	35.38
	2014	1.37	3.51	2.23	58.76	6.21	7.55	48.36
	2013	1.62	3.25	3.23	86.15	4.24	7.22	50.55
	2014	2.10	3.20	6.06	22.34	16.34	5.85	62.35
	2015	2.34	3.51	7.03	32.47	11.24	6.10	59.83
Total	2010	1.66	3.13	3.53	12.38	29.49	6.31	57.83
	2011	1.86	3.59	3.85	13.88	26.29	5.71	63.91
	2014	1.80	3.17	4.16	9.64	37.88	5.74	63.54
	2013	1.84	3.44	3.97	12.30	29.68	6.57	55.54
	2014	1.91	3.53	4.14	35.77	10.20	5.68	64.22
	2015	1.77	3.41	3.67	42.52	8.58	5.53	66.06

Source: Financial reports of firms for the 2010 to 2015 period



Table A6 Activity ratios of the gas distribution sector from 2010 to 2015

	Year	Asset turnover ratio	Current asset turnover ratio	Fixed asset turnover ratio	Inventory turnover ratio	Days to sell the inventory	Receivables turnover ratio	Collection period
State owned	2010	0.55	3.21	0.67	60.52	6.03	4.36	83.77
	2011	0.55	3.19	0.67	61.36	5.95	4.51	80.91
	2014	0.57	3.06	0.70	77.86	4.69	4.27	85.44
	2013	0.59	3.31	0.72	77.40	4.72	4.76	76.66
	2014	0.52	2.62	0.65	77.65	4.70	4.27	85.56
	2015	0.53	2.50	0.67	76.13	4.79	4.96	73.56
Mixed	2010	0.75	3.23	0.97	69.65	5.24	4.15	88.05
	2011	0.77	3.22	1.02	70.30	5.19	4.59	79.47
	2014	0.79	2.84	1.09	64.62	5.65	3.79	96.29
	2013	0.83	3.31	1.10	78.16	4.67	4.61	79.13
	2014	0.68	2.74	0.90	65.64	5.56	3.63	100.66
	2015	0.75	3.03	1.00	74.88	4.87	4.18	87.34
Private	2010	0.57	2.69	0.72	316.21	1.15	5.10	71.60
	2011	0.52	2.35	0.66	132.42	2.76	5.00	73.00
	2014	0.52	2.27	0.67	111.59	3.27	4.04	90.44
	2013	0.40	1.13	0.62	85.36	4.28	4.77	76.54
	2014	0.33	1.77	0.41	79.34	4.60	4.64	78.68
	2015	0.32	2.00	0.38	89.51	4.08	5.22	69.98
Total	2010	0.60	3.16	0.74	69.49	5.25	4.36	83.66
	2011	0.60	3.08	0.74	67.98	5.37	4.59	79.61
	2014	0.61	2.89	0.78	75.68	4.82	4.09	89.33
	2013	0.61	2.75	0.79	78.44	4.65	4.72	77.40
	2014	0.52	2.52	0.66	73.89	4.94	4.09	89.21
	2015	0.55	2.58	0.69	76.82	4.75	4.72	77.33

Source: Financial reports of firms for the 2010 to 2015 period

Table A7 Efficiency ratios of the gas supply sector from 2010 to 2015

	Year	Efficiency of total operations	Business operations	Financing efficiency
State owned	2010	1.00	1.00	0.97
	2011	1.00	1.00	1.13
	2014	1.00	1.00	1.28
	2013	1.02	1.01	1.29
	2014	1.02	1.02	1.40
	2015	1.04	1.03	1.49
Mixed	2010	0.95	0.95	0.44
	2011	1.00	1.00	0.50
	2014	0.89	0.89	0.35
	2013	0.90	0.90	0.36
	2014	0.86	0.86	0.18
	2015	1.06	1.07	0.51
Private	2010	0.94	0.98	0.35
	2011	0.99	1.00	0.32
	2014	1.02	1.04	0.28
	2013	1.03	1.04	0.57
	2014	1.02	1.03	0.68
	2015	1.04	1.05	0.76
Total	2010	0.96	0.97	0.53
	2011	1.00	1.00	0.57
	2014	0.93	0.93	0.45
	2013	0.95	0.95	0.61
	2014	0.97	0.98	0.64
	2015	1.04	1.05	0.81

Source: Financial reports of firms for the 2010 to 2015 period



Table A8 Efficiency ratios of the gas distribution sector from 2010 to 2015

	Year	Efficiency of total operations	Efficiency of business operations	Efficiency of financing
State owned	2010	1.00	1.00	0.77
	2011	1.02	1.02	0.80
	2014	1.01	1.02	0.74
	2013	1.02	1.02	0.85
	2014	1.03	1.03	0.73
	2015	1.10	1.10	0.85
Mixed	2010	0.99	0.99	0.97
	2011	0.99	0.99	0.83
	2014	1.00	1.00	0.66
	2013	1.02	1.03	0.86
	2014	1.04	1.05	0.60
	2015	1.07	1.08	0.55
Private	2010	0.98	1.02	0.38
	2011	0.97	1.00	0.36
	2014	0.97	1.00	0.31
	2013	0.97	1.02	0.38
	2014	0.91	0.95	0.43
	2015	1.02	1.07	0.45
Total	2010	1.00	1.00	0.67
	2011	1.01	1.01	0.65
	2014	1.00	1.01	0.55
	2013	1.01	1.02	0.62
	2014	1.02	1.03	0.56
	2015	1.08	1.09	0.59

Source: Financial reports of firms for the 2010 to 2015 period

Table A9 Profitability ratios of the gas supply sector from 2010 to 2015 (in %)

	Year	Net profit margin (%)	Return on assets – ROA (%)	Return on equity – ROE (%)
State owned	2010	0.1	0.1	0.3
	2011	0.2	0.2	0.9
	2014	0.2	0.3	1.2
	2013	1.2	1.5	5.8
	2014	1.3	1.7	5.6
	2015	2.9	3.8	11.4
Mixed	2010	-5.4	-12.4	94.7
	2011	-0.1	-0.4	2.7
	2014	-12.6	-30.4	72.7
	2013	-11.2	-28.2	35.4
	2014	-17.0	-41.8	19.7
	2015	4.9	3.8	8.0
Private	2010	-6.1	-4.8	-13.1
	2011	-1.3	-1.4	-4.6
	2014	1.5	2.1	6.4
	2013	2.8	4.5	16.1
	2014	1.9	4.0	18.9
	2015	3.3	7.8	31.4
Total	2010	-4.0	-6.7	-78.7
	2011	-0.2	-0.3	-4.2
	2014	-7.8	-14.1	221.8
	2013	-5.2	-9.6	60.2
	2014	-3.5	-6.7	25.2
	2015	3.3	5.9	18.9

Source: Financial reports of firms for the 2010 to 2015 period



Table A10 Profitability ratios of the gas distribution sector from 2010 to 2015 (in %)

	Year	Net profit margin (%)	Return on assets – ROA (%)	Return on equity – ROE (%)
State owned	2010	0.1	0.0	0.1
	2011	1.5	0.8	3.0
	2014	1.0	0.6	2.1
	2013	1.6	0.9	3.0
	2014	1.9	1.0	3.2
	2015	7.4	4.0	10.7
Mixed	2010	-1.7	-1.2	-2.5
	2011	-1.7	-1.3	-2.8
	2014	-0.6	-0.5	-1.1
	2013	1.8	1.5	3.3
	2014	2.8	1.9	4.1
	2015	5.2	3.9	8.2
Private	2010	-2.0	-1.1	-2.4
	2011	-3.4	-1.7	-3.7
	2014	-3.6	-1.9	-3.8
	2013	-3.8	-1.5	-4.5
	2014	-10.5	-3.5	-7.9
	2015	0.3	0.1	0.2
Total	2010	-0.6	-0.4	-1.1
	2011	0.1	0.0	0.1
	2014	0.1	0.0	0.1
	2013	1.1	0.7	1.9
	2014	0.9	0.5	1.3
	2015	6.2	3.4	8.2

Source: Financial reports of firms for the 2010 to 2015 period

Fiscus


Fiscus is an analytical serial publication of the Institute of Public Finance. It aims at analyzing current economic issues that affect the stability of public finances or are related to the production of goods and the provision of services of broader public interest. The topics concerned have not received adequate attention in the academic and professional community and relate to economic sectors in which the public interest is concerned, directly or indirectly. On scientific and professional foundations, Fiscus seeks to empower and encourage public debate on the establishment and preservation of the stability of Croatian public finances and the economy in general by promoting transparent, prudent and responsible management. Therefore, the topics focus on the identification and quantification of potential risks that could threaten the stability of public finance, market development, the competitiveness of the Croatian economy and the economic position of the citizens.

The vision of Fiscus is to become a reliable source of sectoral analyses through the prism of interaction between the public and private sector.

The mission of Fiscus is to identify the key challenges faced by certain economic sectors and offer suggestions for the improvement and preservation of the long-term stability of the Croatian economy.

The main objectives are:

- to provide in-depth analysis of the financial operations of public sector institutions and those institutions that are in any way associated with the production of goods and the provision of services of a broader public interest;
- to improve understanding of the financial consequences of their operations and increase accountability;
- to provide objective information on their business operations to the broader professional public and to investors;
- to contribute to the removal of administrative barriers to the development of competitiveness and the market economy.



Publisher: Institute of Public Finance
Zagreb, Smičiklasova 21
Phone: (+385 1) 4886 444 | fiscus@ijf.hr
Editors: Anto Bajo and Marko Primorac
www.ijf.hr/eng/fiscus

