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# Application of transfer pricing methods in related companies in Croatia

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## ABSTRACT

The main purpose of this paper was to investigate and identify which transfer pricing methods are applied in related companies in Croatia, as well as to give certain recommendations that would improve the control of transfer pricing in Croatia. The primary data for this study were collected through the survey which was conducted on a sample of related companies from the real sector in Croatia in 2008, and again in 2012. Results obtained in this study indicated that the issues related to transfer pricing still are not significantly represented and understood in business practice in Croatia. The research results also showed that the majority of related companies in Croatia apply the cost method of determining the transfer prices. Furthermore, the research results showed that in 2008 the comparable uncontrolled price method was the most frequently used OECD method of determining transfer prices in related companies in Croatia, while in 2012 all OECD methods of determining transfer prices were equally applied.

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## 1. Introduction

In terms of the modern globalised economy, transfer pricing has become one of the most important issues faced by financial managers and accountants. Transfer pricing has become a matter of great interest not only for a company's management, but also for national tax authorities. The significance and role of transfer pricing is specially emphasised at the international level when two or more related companies conduct transactions at specially determined prices which enable the achievement of certain goals. Transfer pricing is used for goods and services transferred between units and profit centres within the same company, as well as for goods and services transferred between related companies located in different countries (Li, 2005). Transfer pricing is also used as a strategic tool by internationally related companies in decision-making, for realisation of core activity goals and shifting profits from one company to another in order to gain tax benefits (Cooper, 2000), for profit maximisation of their subsidiaries which operate in countries with lower tax rates (Fraedrich & Bateman, 1996), and to maximise consolidated profits, or to obtain penetration into new markets, as well as to increase the current market share.

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Transfer pricing methods can directly affect the amount of profit reported in a country of a multinational company, which in turn affects the tax revenues of that country (Bartelsman & Beetsma, 2003). Since transfer pricing can seriously affect taxation, it has become a matter of a great interest for national tax authorities. National tax authorities should conduct control of transfer pricing in order to prevent tax avoidance and possible double taxation. Control of transfer pricing is a very difficult task for national tax authorities, since they often do not have full and correct information regarding the group of related companies and their mutual transactions. Sometimes, when such information exists, it is very difficult to judge the objectivity of transfer prices at which the mutual transaction between related companies are charged. Transfer pricing is an international issue, so the need for unique transfer pricing treatment at international level became the necessity.

In order to obtain a single international treatment of transfer pricing, the OECD (Organisation for Economic Co-operation and Development) has developed transfer pricing guidelines for multinational companies and national tax authorities. These guidelines prescribe the arm's length principle as the main standard for transfer pricing, and define transfer pricing methods which can be used in order to determine transfer prices in transactions between related companies under the arm's length principle. According to these guidelines, related companies are obligated to prepare transfer pricing documentation in order to prove compliance of transfer prices with the arm's length principle for national tax authorities. All state members of OECD are requested to implement these guidelines into their tax regulations. The Republic of Croatia has accepted the OECD transfer pricing guidelines and has implemented them into national tax regulation (Corporate Profit Tax Act and Corporate Profit Tax Ordinance).

The key point in transfer pricing documentation is the selection of the transfer pricing method. Many surveys conducted in the 1990s indicated transfer pricing as a major international tax issue or the most important issue for more than 80% of multinational companies (Ernst & Young, 2001). So, the main purpose of this paper was to present the problems with transfer pricing in related companies in Croatia and to indicate the transfer pricing methods which are applied in related companies in Croatia, as well as to give certain recommendations in order to improve the control of transfer pricing in Croatia.

In this study were set two hypotheses:

**Hypothesis 1.** *The cost-based transfer pricing methods are the most commonly applied accounting transfer pricing methods in related companies in Croatia.*

**Hypothesis 2.** *The comparable uncontrolled price method is the most commonly applied OECD transfer pricing method in related companies in Croatia for tax purposes.*

In order to fulfil the research objective and purpose, the survey (questionnaire) was conducted on a sample of related companies in Croatia. The survey was initially conducted in 2008, and subsequently in 2012. In the research sample were included related companies from the real sector in Croatia which had headquarters within Croatia and which were members of a group either on a national or an international level. The research results indicated that problems with transfer pricing are still present and significant among related companies in Croatia and that problems with control of transfer pricing provided by the tax authorities still exists.

## 2. Theoretical background and literature review

### 2.1. Definition of transfer pricing

In order to analyse the significance of transfer pricing in achieving a company's goals, it is important to specify two dimensions of transfer pricing. Modern definitions of transfer pricing are directed to related companies which provide mutual transactions. Transfer pricing is defined as the price charged for transferring a corporation's intangible and tangible assets, goods or services, or raw materials between responsibility centres, segments or departments of the same company (Aranoff, 2000; Horngren, Datar, & Foster, 2003). The transfer price creates revenues for the selling division and purchase costs for the buying division, affecting each division's operating income (Horngren et al., 2003; Hirsch & Louderback, 1986). The design of transfer pricing systems is a key point in management control of most decentralised companies. There are two aspects to be considered when implementing a transfer pricing system: the first refers to the sources of supply – should the company produce products or buy them – and the second is regarding its own transfer pricing – at what price the product should be transferred between profit centres (de Castro, 2014). In the analysis presented in this paper, prices charged for transferring goods and services between related companies within the same group were addressed. A well-established transfer pricing system enables the optimisation of a company's goals set at the level of top management with the company's goals set at the lower organisation levels (Barfield, Raiborn, & Dalton, 1991).

In a broader sense, transfer pricing is defined as a term used in order to represent the value of transactions between the parent company and subsidiaries, or between subsidiaries operating in different countries; respectively, the transfer price is the price charged for transactions between related companies. There are various types of company relations; the OECD assumes three main types: personal relations, voting relations and capital relations. IAS 24 *Related party disclosures* also assumes these three types of company relations, but in a much broader sense. The most evident, and the easiest relations for identification, are capital relations. Basically, two companies are considered related when one company holds more than 20% of voting outstanding stocks of the other company or when the same parties are included in management, control or capital of the two or more companies (OECD, 2001; IAS 24 *Related party disclosures*, 2009). In this paper, the emphasis was on related companies which are members of the same group. The group includes the parent company and all its subsidiaries (IAS 27 *Separate financial statements*, 2010). When the group is formed, then transfer pricing can be used as an instrument for shifting profits from one company to another company within the group.

Transfer prices charged for transferring goods or services between related companies within the same group have a direct impact on the profitability of the companies. Therefore, managers of the companies are interested in the transfer pricing policy of the group, although the issue of transfer pricing is especially meaningful in multinational groups. When the members of the group are from different countries with different tax systems, transfer prices in the group can be used for shifting profits of the companies within the group to the country with the least tax burden (Borkowski, 2000). Multinational groups also may minimise negative effects incurred by exchange rate fluctuations and inflation by utilising transfer pricing, so transfer pricing can have the utmost importance in financial strategies, marketing or production of a multinational group by influencing their long-term objectives (Cooper, 2000; Kim, Swinnerton, & Ulferts, 1997).

## 2.2. Transfer pricing methods

The accounting and transfer pricing literature differs for the two types of transfer pricing methods: the first are transfer pricing methods from the standpoint of management accounting, and the second are transfer pricing methods from the standpoint of the OECD. Accounting transfer pricing methods initially referred to internal pricing between responsibility centres within the same company, while OECD transfer pricing methods are designed for determination and control of transfer pricing between related companies and for tax purposes. Although there are many applicable methods for determination of transfer prices, accounting theory and practice identified three basic transfer pricing methods (Abu-Serdaneh, Al-Okdeh, & Gauher, 2008; Barfield et al., 1991; Horngren et al., 2003; Templar, 2005):

- (1) market-based transfer prices
- (2) cost-based transfer prices
- (3) negotiated transfer prices.

Besides these methods, Rayborn (1989), Barfield et al. (1991) and Pass (1994) added a dual transfer pricing method to those accounting transfer pricing methods. Cassel and McCormack (1987) specified the advantages of dual transfer pricing methods, as well as the consequences which may appear from the usage of dual transfer pricing methods. The key point of transferring goods and services within a related company or within a group is not the transfer price charged in the transaction, but the issue of whether that transfer should be conducted, i.e., is the transfer in the company's best interest (Hirsch & Louderback III, 1986; Barfield et al., 1991)?

The most important factors that affect determination of transfer prices and the selection of transfer pricing methods in terms of parent company and its subsidiaries can be classified into four groups: legal factors, political and social factors, external economic factors and internal economic factors (Dogan, Deran, & Köksal, 2013).

Regardless of which transfer pricing method is applied in a company, the general rules for choosing a transfer price are as follows (Barfield et al., 1991; Garrison & Noreen, 2000; Horngren et al., 2003):

- The maximum price should be no higher than the lowest market price at which the buying segment or company can acquire the goods or services externally.
- The minimum price should be no less than the sum of the selling segment's (or company's) incremental production costs plus opportunity cost of the facilities used.

In this model, incremental production costs are variable production costs that include direct material costs, direct labour costs and variable overheads. Opportunity cost in the model refers to the maximum contribution margin realised by the selling segment (or company) if goods or services are transferred internally (Horngren et al., 2003). Since the internal transfer of goods and services within the company or group creates revenues for the selling segment (or company) and purchase costs for the buying segment (or company), the transfer price within the upper and lower limit presents internally generated profit for the company as a whole or for the group (Barfield et al., 1991). Therefore, transfer prices split the profit of the company or group between buying and selling segments (companies). Internally generated profit should be eliminated in consolidated financial statements (Perčević, 2008, 2011).

OECD transfer pricing methods are developed in order to assist multinational companies and national tax authorities for the purpose of determination and control of transfer pricing for tax purposes. OECD transfer pricing methods are based on the arm's length principle. This principle has been set up as an internationally accepted standard for transfer pricing tax treatment. The enforcement of the arm's length principle as a relevant approach for international transfer pricing treatment is implemented through the OECD's transfer pricing guidelines, which were accepted by OECD member states and appropriately incorporated into their national tax regulations. The arm's length principle requires that the transfer price should be set at the price level that would be set by unrelated companies that operate independently. Although the arm's length principle has been widely accepted as the relevant standard for transfer pricing tax treatment, the way in which this principle has been implemented can distinguish between countries (Blocher, Chen, Cokins, & Lin, 2005). These differences are caused by different legal, tax, economic, political and social factors that exist in certain countries. However, the arm's length principle is applied in different ways. The OECD's guidelines define the transfer pricing methods that can be used in order to determine whether the transfer price is set according to the arm's length principle. These methods are divided into three groups (OECD, 2001, 2010):

- (1) traditional transaction methods
- (2) transactional profit methods
- (3) other methods.

Traditional transaction methods are based on the analysis of the determined price in each controlled transaction. These methods are characterised as the most appropriate methods for arm's length principle implementation. The OECD's transfer pricing guidelines recognise three types of traditional transaction methods (Blocher et al., 2005; OECD, 2001, 2010):

- (1) comparable uncontrolled price method
- (2) resale price method
- (3) cost plus method.

Transactional profit methods are used in circumstances when the application of any traditional transaction method is not reliable. These methods evaluate earned profit in each controlled transaction rather than transfer prices. Therefore, these methods are not primarily focused on transfer prices, but on earned profits in transactions between related companies. The analysis of earned profit in transactions between related companies can indicate whether a particular transaction is conducted under the conditions and circumstances which characterise the arm's length principle. Transactional profit methods can provide the approximate transfer prices that may represent the market price compatible with the arm's length principle (Perčević, 2008, 2011). According to the OECD's transfer pricing guidelines, there are two transactional profit methods (OECD, 2001, 2010):

- (1) profit-split method
- (2) transactional net margin method.

Other transfer pricing methods present other ways of transfer pricing determination that are not included in previously mentioned transfer pricing methods. Other transfer pricing methods are basically different agreements between related companies, or between related

companies and national tax authorities (Perčević, 2008, 2011). The OECD's transfer pricing guidelines support two types of such agreements (OECD, 2001, 2010):

- (1) common costs split agreements
- (2) advanced pricing agreements.

Common costs split agreements are agreements between related companies which determine in what way related companies split costs, risks and benefits from certain common functions (e.g., research and development, production, supply, accounting, finance, etc.). Although these agreements do not include transfer pricing directly, they can have a significant effect on profits of related companies. Therefore, they are often under special consideration of national tax authorities (OECD, 2001, 2010).

Advanced pricing agreements are agreements between related companies and national tax authorities. By this agreement, a national tax authority and related company define the transfer price before the transaction is made. Therefore, the process of transfer pricing control is much easier because the transfer price of a controlled transaction is established by agreement between the national tax authority and the related company. The objective of advanced pricing agreements is to resolve transfer pricing disputes in a timely manner and to avoid costly litigation (Blocher et al., 2005). Advanced pricing agreements were first developed in the U.S.A. by the Internal Revenue Service. Wrappe, Milani, and Joy (1999) have described the procedures of advanced pricing agreements in the U.S.A. and pointed out their advantages for companies as well as for tax authorities.

In Croatia, all OECD transfer pricing methods are allowed for application except advanced pricing agreements. Furthermore, the Corporate Profit Tax Act and the Corporate Profit Tax Ordinance require the application of a comparable uncontrolled price method in Croatia, while other transfer pricing methods can be applied only if this method cannot be applied (Corporate Profit Tax Act, 2012; Corporate Profit Tax Ordinance, 2012).

### **2.3. Application of transfer pricing methods**

Al-Eryani, Alam, and Akhter (1990) and Borkowski (1997) concluded that U.S. based companies prefer the application of nonmarket-based methods.

Elliott (1998) has conducted a survey in order to analyse the transfer pricing practices for tax purposes in related companies from the United Kingdom, U.S.A. and Europe. According to his research, the most commonly used transfer pricing method is the cost plus method, followed by the comparable uncontrolled price method and the resale price method.

Borkowski (2000) has conducted the survey among multinational companies and she has concluded that two-thirds of multinational companies expected to use advanced pricing agreements in determining their transfer prices.

In 2003 Li (2005) surveyed foreign-owned subsidiaries operating in New Zealand companies on their transfer pricing practices, and reported that 56% of the foreign-owned subsidiaries operating in New Zealand applied nonmarket-based methods, while 44% of companies applied market-based methods.

Templar (2005) conducted a survey in order to investigate the application of transfer pricing methods in 2005 within companies of the most developed countries in the world. Results of his research indicated that 57% of companies have applied the cost-based transfer

price method, 30% the market-based transfer price method, 7% negotiated the transfer price method, while 6% applied other transfer pricing methods.

Finally, transfer prices and methods of determining transfer prices are very important for the performance of related companies, as a criterion in the allocation of company resources between related companies (parent company and subsidiary company, or between subsidiary companies). Transfer prices affect costs, revenues and results of companies participating in internal transfers, which is furthered reflected in the reward system and motivation of a company's management to contribute to the achievement of the company's goals as well as to the achievement of long-term profitability in the company as a whole. The literature review about the applied transfer pricing methods in transition countries is very poor and transfer pricing issues are under-researched, and that was the rationale for the research presented further in this paper.

### **3. Research methodology**

The main purpose of this paper was to identify which transfer pricing methods are applied in related companies in Croatia. The primary data for this study were collected through the survey that was conducted on a sample of related companies in Croatia. In the research sample were included related companies (parent companies and subsidiary companies) from the real sector in Croatia which had headquarters in Croatia, and which were members of a group either on national or international level, but only those companies applying transfer pricing. Banks and other financial institutions are not included in the sample. The data about the quantity and business names of related companies in Croatia were taken from the Financial Agency.

The survey was conducted in two phases, and in both phases the survey was sent to 112 identified related companies in Croatia. The questionnaire was the same in both phases of study. The first survey was conducted in January and February 2008 (Perčević, 2008, 2011). After three mailings, a total of 31 responses were received. The results of the first survey, which have already been presented to the scientific public (Perčević, 2008, 2011), were used in this paper in order to compare it with the results from the survey in 2012. The second survey was conducted in November and December 2012, and 45 companies completed the questionnaire.

As mentioned before, the purpose of this study was to identify which transfer pricing methods are applied in related companies in Croatia. Moreover, depending on the applied transfer pricing method, the aim was to give certain recommendations that would improve the control of transfer pricing in Croatia for tax purposes. Collected data were analysed by descriptive statistic methods. The *z*-test for proportion has been used to test hypotheses.

## **4. Research results**

### **4.1. Results of survey on transfer pricing in related companies in Croatia**

#### **4.1.1. Sample analysis**

The related companies which were included in the research sample are analysed on the basis of their size and basic business activity. The structure of the respondent companies according to the size (as defined in the Accounting Act, 2007) is shown in Table 1.



**Table 1.** Sample structure according to the size of a company.

The size of a company	2008	2012
Small	6.40%	8.90%
Mid-sized	22.60%	33.30%
Large	71.00%	57.80%
Total	100%	100%

Source: Authors.

**Table 2.** Sample structure according to the basic business activity.

Business activity	2008	2012
Production	45.20%	64.40%
Merchandising	19.40%	6.70%
Providing services	29.00%	17.80%
Other	6.40%	11.10%
Total	100%	100%

Source: Authors.

The structure of the sample according to the basic business activity is shown in Table 2.

The majority of respondent companies were organised as joint stock companies that are listed on a regulated market (the Zagreb Stock Exchange). Only small companies from the sample were organised as limited companies. According to their position in a group (consolidated entity), in the survey that was conducted in 2008, 61.8% of respondent companies were parent companies, while 38.2% were subsidiary companies (Perčević, 2008, 2011). In the survey that was conducted in 2012, 53.3% of respondent companies were parent companies, while 46.7% were subsidiary companies.

#### **4.1.2. Transfer pricing methods applied in related companies in Croatia**

Transfer pricing is one of the most important tax and accounting issues in related companies in Croatia. Although awareness of the importance and significance of transfer pricing in related companies in Croatia is continuously increasing, due to internationalisation and mergers and acquisitions in which related companies from Croatia are included, there is still insufficient focus on transfer pricing issues.

The results of the survey conducted in 2008 implied that transfer pricing issues were not significantly represented and understood in business practice in Croatia. This statement was based on the fact that only 57.9% of respondent companies had developed some kind of transfer pricing system, 31.6% were in the process of developing a transfer pricing system or were intending to develop it in next five years, while 10.5% of respondent companies did not have a developed transfer pricing system. Those companies that had developed a transfer pricing system, consistently applied the system within the whole group. Also, the survey results from 2008 indicated the high level of centralisation in related companies in Croatia regarding transfer pricing, as transfer prices are mostly determined by parent companies and therefore consistently applied within the whole group of related companies (Perčević, 2008, 2011).

The survey results regarding the application of accounting transfer pricing methods in related companies in Croatia in 2008 and 2012 are presented in Table 3. The results of the survey conducted in 2012 pointed out that 73.08% of respondent companies had developed a transfer pricing system, 19.23% of companies were in the process of implementing

**Table 3.** The application of accounting transfer pricing methods in related companies in Croatia.

Transfer pricing methods	2008	2012
Cost-based methods	42.86%	48.00%
Market-based methods	17.85%	26.00%
Negotiated methods	25.00%	16.00%
Other methods	14.29%	10.00%
Total	100%	100%

Source: Authors.

a transfer pricing system, 5.77% did not have a developed transfer pricing system but did intend to implement it in the next five years, while only 1.92% of respondent companies did not have a developed transfer pricing system and did not intend to develop one in the next five years. So, it can be concluded that the interest in transfer pricing issues among related companies in Croatia has significantly increased between 2008 and 2012.

According to the Croatian Corporate Profit Tax Act and the Corporate Profit Tax Ordinance, all companies that conduct transactions with related companies have to prepare transfer pricing documentation. The survey results from 2008 indicated that only 52.9% of respondent companies had prepared transfer pricing documentation, while 47.1% of them did not have prepared transfer pricing documentation (Perčević, 2008, 2011). That is because there was insufficient focus on transfer pricing in related companies in Croatia. The main reason for insufficient attention focused on transfer pricing issues was poor transfer pricing control conducted by the national tax authorities. According to the survey results from 2008, 52.9% of respondent companies had never received requests from the tax authorities for transfer pricing documentation, while 47.1% of them had received such requests (Perčević, 2008, 2011). The survey results from 2012 implied that 59.18% of respondent companies had prepared transfer pricing documentation, while 40.82% of them had not. Moreover, the survey results from 2012 also indicated that only 26% of respondent companies received a request from the national tax authority regarding transfer pricing documentation. According to the survey results from 2008 and 2012, it can be concluded that the tax authority in Croatia still does not control transfer pricing at an acceptable level.

The most important issue in transfer pricing is the transfer pricing method applied to determine the transfer price in a transaction with related companies, and the transfer pricing method which is used to demonstrate the application of the arm's length principle in transfer pricing determination as well as the object of transfer pricing control by the tax authority. The study results regarding the application of accounting transfer pricing methods indicated that the majority of respondent companies applied the cost-based transfer pricing method.

The results of the survey conducted in 2012 indicated that cost-based transfer pricing methods were still the most commonly applied transfer pricing methods among related companies in Croatia, particularly in production companies. Survey results from 2012 also indicated increased application of market-based transfer pricing methods in production and service companies, while negotiated transfer pricing methods were still mostly applied in service companies. The increased application of market-based transfer pricing methods is a consequence of the implementation of the arm's length principle in transfer price determination according to OECD guidelines, the Croatian Corporate Profit Tax Act and the Corporate Profit Tax Ordinance. The complete survey results regarding the application of

**Table 4.** The application of accounting transfer pricing methods in related companies in Croatia classified according to their basic business activity in 2008.

Transfer pricing methods	Parent companies				Total
	Production	Merchandising	Service company	Other	
Cost-based methods	45.45%	50.00%	0.00%	100%	43.75%
Market-based methods	18.18%	50.00%	0.00%	0.00%	18.75%
Negotiated methods	27.27%	0.00%	100%	0.00%	31.25%
Other methods	9.09%	0.00%	0.00%	0.00%	6.25%
Total	100%	100%	100%	100%	100%
Transfer pricing methods	Subsidiary companies				Total
	Production	Merchandising	Service company	Other	
Cost-based methods	100.00%	66.67%	14.29%	100%	41.67%
Market-based methods	0.00%	33.33%	14.29%	0.00%	16.67%
Negotiated methods	0.00%	0.00%	28.57%	0.00%	16.67%
Other methods	0.00%	0.00%	42.86%	0.00%	25.00%
Total	100%	100%	100%	100%	100%

Source: Perčević, 2008, 2011

accounting transfer pricing methods in related companies in Croatia in 2012 are presented in Table 5.

When comparing the survey results from 2008 and 2012, the increased application of market-based transfer pricing methods in 2012 compared to 2008 is evident. The increased application of market-based transfer pricing methods is the result of increased concern about transfer pricing among related companies in Croatia, and partly as a result of increased preparation of transfer pricing documentation.

Survey results from 2008 indicated that cost-based transfer pricing methods were the most commonly used in production companies, while negotiated transfer pricing methods were mainly used in service companies. Market-based transfer pricing methods were mostly applied in merchandising companies, although cost-based transfer pricing methods were also often applied in these companies (Perčević, 2008, 2011). The complete survey results regarding the application of accounting transfer pricing methods in related companies in Croatia in 2008 are presented in Table 4.

Cost-based transfer pricing methods were the most commonly used in production companies due to the following reasons:

- these methods are simple and transparent
- these methods are based on product costs and information about product costs are already available in production companies since almost each production company uses adequate costing methods for calculating product cost
- many production companies do not use market prices when selling products to related companies, since certain costs are not affected with intra-group transactions
- some products do not have its external market neither market prices, because these products are input for another production process which is performed in another related company
- cost-based transfer pricing methods are prescribed by transfer pricing policies at the group level.

Market-based transfer pricing methods were the most commonly used in merchandising companies due to the following reasons:

**Table 5.** The application of accounting transfer pricing methods in related companies in Croatia classified according to their basic business activity in 2012.

Transfer pricing methods	Parent companies				Total
	Production	Merchandising	Service company	Other	
Cost-based methods	55.00%	100%	0.00%	25.00%	46.43%
Market-based methods	30.00%	0.00%	33.33%	50.00%	32.14%
Negotiated methods	15.00%	0.00%	66.67%	25.00%	21.43%
Other methods	0.00%	0.00%	0.00%	0.00%	0.00%
Total	100%	100%	100%	100%	100%
Transfer pricing methods	Subsidiary companies				Total
	Production	Merchandising	Service company	Other	
Cost-based methods	53.60%	0.00%	50.00%	100%	50.00%
Market-based methods	7.70%	50.00%	33.33%	0.00%	18.18%
Negotiated methods	7.70%	0.00%	16.67%	0.00%	9.09%
Other methods	31.00%	50.00%	0.00%	0.00%	22.73%
Total	100%	100%	100%	100%	100%

Source: Authors.

**Table 6.** The application of the OECD's transfer pricing methods in related companies in Croatia.

OECD transfer pricing methods	2008	2012
Comparable uncontrolled price method	60.00%	20.69%
Resale price method	6.67%	24.14%
Cost plus method	6.67%	24.14%
Profit split method	19.99%	13.79%
Transactional net margin method	6.67%	17.24%
Total	100%	100%

Source: Authors.

- merchandising companies are selling goods which have an external market, so market prices are easily determined without further effort
- market prices are available for the majority of goods that merchandising companies are selling to related companies
- the majority of goods of merchandising companies can be sold either on the external market or internally to related companies at market prices
- market-based transfer pricing methods are the closest to the arm's length principle which is required by the OECD transfer pricing guidelines and the tax authorities.

Negotiated transfer pricing methods are mainly used in those companies that are highly decentralised and where transfer pricing policy is not strictly prescribed. According to the survey results, negotiated transfer pricing methods were the most commonly used in service companies, mainly because the price of a certain service was initially negotiated and depended of the customer and its requirements.

The Croatian Corporate Profit Tax Act prescribes the application of the OECD's transfer pricing methods for tax purposes. Companies in Croatia that have transactions with their related companies have to use the OECD's transfer pricing methods in order to demonstrate the application of the arm's length principle in transfer pricing determination for tax purposes. The complete study results regarding the application of the OECD's transfer pricing methods in related companies in Croatia in 2008 and 2012 are presented in Table 6.

The results of the survey which was conducted in 2008 indicated that majority of respondent related companies in Croatia applied the comparable uncontrolled price method for

**Table 7.** The application of the OECD's transfer pricing methods in related companies in Croatia classified according to their basic business activity in 2008.

OECD transfer pricing methods	Parent companies			Total
	Production	Merchandising	Service company	
Comparable uncontrolled price method	57.14%	0.00%	100%	55.56%
Resale price method	0.00%	100%	0.00%	11.11%
Cost plus method	14.29%	0.00%	0.00%	11.11%
Profit split method	14.29%	0.00%	0.00%	11.11%
Transactional net margin method	14.29%	0.00%	0.00%	11.11%
Total	100%	100%	100%	100%
OECD transfer pricing methods	Subsidiary companies			Total
	Production	Merchandising	Service company	
Comparable uncontrolled price method	100%	50.00%	100%	66.67%
Resale price method	0.00%	0.00%	0.00%	0.00%
Cost plus method	0.00%	0.00%	0.00%	0.00%
Profit split method	0.00%	50.00%	0.00%	33.33%
Transactional net margin method	0.00%	0.00%	0.00%	0.00%
Total	100%	100%	100%	100%

Source: Perčević, 2008, 2011.

tax purposes (Perčević, 2008, 2011). This transfer pricing method is mostly used because it is preferred by the Croatian Corporate Profit Tax Act. Detailed study results regarding the application of the OECD's transfer pricing methods in 2008 showed that the comparable uncontrolled price method was the most frequently applied method in production companies, while in merchandising companies the most commonly used method was the resale price method followed by the profit split method in subsidiary companies (Perčević, 2008, 2011). The research results regarding the application of the OECD's transfer pricing methods in related companies in Croatia in 2008 according to their basic business activity are shown in Table 7.

The study results regarding the application of the OECD's transfer pricing methods in related companies in Croatia in 2012 indicated significant changes in their application compared to 2008. While in 2008 60% of respondent companies applied the comparable uncontrolled price method, in 2012 24.14% of respondent companies mostly applied the resale price method and the cost plus method, and 20.69% of respondent companies applied the comparable uncontrolled price method. Detailed study results showed that production companies mostly applied the comparable uncontrolled price method and the cost plus method, while merchandising companies mainly applied the resale price method. According to the study results, service companies mostly applied the transactional net margin method, the resale price method and the comparable uncontrolled price method. It is important to note that respondent parent merchandising companies did not answer the question regarding the application of the OECD's transfer pricing methods. The study results in 2012 showed that most of the OECD's transfer pricing methods were applied in related companies in Croatia, but the majority of respondent related companies in Croatia applied traditional transaction methods. The survey results regarding the application of the OECD's transfer pricing methods in related companies in Croatia in 2012 according to their basic business activity are shown in Table 8.

The comparable uncontrolled price method is suitable in those companies which provide the same transactions with related and unrelated companies. If the comparable transaction exists, then this method is the most appropriate for determination of transfer prices. This

**Table 8.** The application of the OECD transfer pricing methods in related companies in Croatia classified according to their basic business activity in 2012.

OECD transfer pricing methods	Parent companies				Total
	Production	Merchandising	Service company	Other	
Comparable uncontrolled price method	30.00%	0.00%	0.00%	0.00%	20.00%
Resale price method	10.00%	100%	0.00%	75.00%	26.67%
Cost plus method	30.00%	0.00%	0.00%	0.00%	20.00%
Profit split method	10.00%	0.00%	0.00%	25.00%	13.33%
Transactional net margin method	20.00%	0.00%	100%	0.00%	20.00%
Total	100%	100%	100%	100%	100%
OECD transfer pricing methods	Subsidiary companies				Total
	Production	Merchandising	Service company	Other	
Comparable uncontrolled price method	25.00%	0.00%	25.00%	0.00%	21.43%
Resale price method	0.00%	100%	50.00%	0.00%	21.43%
Cost plus method	50.00%	0.00%	0.00%	0.00%	28.57%
Profit split method	12.50%	0.00%	0.00%	100%	14.29%
Transactional net margin method	12.50%	0.00%	25.00%	0.00%	14.29%
Total	100%	100%	100%	100%	100%

Source: Authors.

method is suitable for production companies that sell the same products to related and unrelated companies. The resale price method is, by its nature, suitable and appropriate for merchandising companies, which sell the same goods to related and unrelated companies; so, this is the main reason why the resale price method was usually applied in merchandising companies. The cost plus method is suitable for production companies when comparable transactions with unrelated companies do not exist but the cost of a product that is sold to a related company could be determined; so, this is the reason why the cost plus method was applied in production companies. Transactional profit methods are suitable for related companies that are highly interdependent regarding business processes and activities, and where there is very high interdependence between related companies regarding profit achievement. This method is applied when there is no evidence of comparable transactions between unrelated companies.

The significant change in the application of OECD transfer pricing methods is the result of changes in the OECD transfer pricing guidelines in 2010. While OECD transfer pricing guidelines from 2001 have preferred the application of the comparable uncontrolled price method, the OECD transfer pricing guidelines from 2010 stated that the most appropriate transfer pricing method should be applied. The most appropriate method depends on several factors, among which the most important are industry, business processes and activities, available information about costs and market prices, available substitutes on relevant market, the level of centralisation in company or group and transfer pricing policy within the company or group.

The outspread application of transfer pricing methods is characteristic for U.S.A. companies and EU companies, since the majority of European tax regulations prescribe the application of the most appropriate transfer pricing method. Although the Croatian Corporate Profit Tax Act prefers the application of the comparable uncontrolled price method, according to the research results in 2012, this method was not the mostly frequently applied method in related companies in Croatia. Research results also indicated

that the tax authority in Croatia still does not implement enough control of transfer pricing in related companies in Croatia.

Following the descriptive statistic analysis of the research results from 2008 and 2012, it can be concluded that the majority of respondent companies were applying the cost-based transfer pricing method. Moreover, descriptive statistic analysis shows that the comparable uncontrolled price method was widely applied in related companies in Croatia in 2008, while research results from 2012 showed that this method was no longer widely used, notwithstanding that this transfer pricing method is preferred by the Croatian Corporate Profit Tax Act. These conclusions were tested by  $z$ -test for proportion.

On the basis of these study results, the two hypotheses were solved as follows.

**Hypothesis 1.** *The cost-based transfer pricing methods are the most commonly applied accounting transfer pricing methods in related companies in Croatia.*

Hypothesis 1 was set up on the basis of survey results regarding the application of transfer pricing methods in companies in developed countries (Templar, 2005) as well as in related companies in Croatia (Perčević, 2008, 2011). Since previously presented and explained survey results indicated that, in related companies in Croatia as well as in companies in developed countries, the most applied transfer pricing methods were cost-based transfer pricing methods, it was assumed that more than 25% of related companies in Croatia applied cost-based transfer pricing methods.

The  $z$ -test for proportion for testing the first hypothesis is:

$$H_0 \dots p \leq p_0$$

$$H_1 \dots p > p_0$$

$$H_0 \dots p \leq 0.50$$

$$H_1 \dots p > 0.50$$

z-test of hypothesis for proportion

	2008	2012
Data		
Null hypothesis ( $p_0$ )	0.25	0.25
Level of significance ( $\alpha$ )	0.05	0.05
Number of successes ( $m$ )	13	24
Sample size ( $n$ )	31	45
Intermediate calculations		
Sample proportion	0.419354839	0.533333333
Standard error	0.077771377	0.064549722
$z$ -test statistic	2.177598559	4.389381126
Upper-tailed test		
Upper critical value	1.644853627	1.644853627
$p$ -value	0.014717968	5.68368E-06
	Reject the null hypothesis	Reject the null hypothesis

Source: Authors

The null hypothesis claims that 25% or less than 25% of related companies in Croatia applied cost-based transfer pricing methods in 2008 and 2012. According to the results of the  $z$ -test for proportion, at the level of significance of 5%, there was enough evidence to support the claim that more than 25% of related companies in Croatia in 2008 and 2012 applied cost-based transfer pricing methods. Therefore, the hypothesis that the cost-based transfer pricing methods are most commonly applied accounting transfer pricing methods in related companies in Croatia can be accepted.

**Hypothesis 2.** *The comparable uncontrolled price method is the most commonly applied OECD transfer pricing method in related companies in Croatia for tax purposes.*

Since the Croatian Corporate Profit Tax Act and the Corporate Profit Tax Ordinance prefer the application of the comparable uncontrolled price method, and considering the fact that the comparable uncontrolled price method was initially the most preferable method by OECD guidelines, it was assumed that the majority of related companies in Croatia applied the comparable uncontrolled price method. Hypothesis 2 was also set up on the basis of previous survey results regarding the application of transfer pricing methods in related companies in Croatia (Perčević, 2008, 2011).

The  $z$ -test for proportion for testing the second hypothesis is:

$$H_0 \dots p \leq p_0$$

$$H_1 \dots p > p_0$$

$$H_0 \dots p \leq 0.50$$

$$H_1 \dots p > 0.50$$

z-test of hypothesis for proportion

	2008	2012
Data		
Null hypothesis ( $p_0$ )	0.25	0.25
Level of significance ( $\alpha$ )	0.05	0.05
Number of successes ( $m$ )	15	6
Sample size ( $n$ )	31	30
Intermediate calculations		
Sample proportion	0.483870968	0.2
Standard error	0.077771377	0.079056942
$z$ -test statistic	3.007159915	0.632455532
Upper-tailed test		
Upper critical value	1.644853627	1.644853627
$p$ -value	0.001318505	0.736455372
	Reject the null hypothesis	Do not reject the null hypothesis

Source: Authors

The null hypothesis claims that 25% and less than 25% of related companies in Croatia apply the comparable uncontrolled price method in order to demonstrate the application of the arm's length principle in transfer price determination for tax purposes. According to the results of the  $z$ -test for proportion, at the level of significance of 5%, the null hypothesis for 2008 can be accepted, while results of the  $z$ -test for proportion for 2012 indicates that there is not enough evidence to support the claim that more than 25% of related companies in Croatia apply the comparable uncontrolled price method.

Therefore, on the basis of the results of descriptive statistic analysis and the results of the  $z$ -test for proportion, the second research hypothesis for 2008 can be accepted, while the second research hypothesis for 2012 has to be rejected, i.e., there was not enough evidence to support the hypothesis that the majority of related companies in Croatia in 2012 applied the comparable uncontrolled price method for tax purposes.

## 5. Conclusion

The survey conducted within related companies in Croatia in 2008 and 2012 indicated that transfer pricing issues still are not significantly represented and understood in business practice in Croatia. This is due to the fact that the tax authority in Croatia still does not



implement enough control of transfer pricing in related companies in Croatia. Also, this is the reason why a large number of related companies in Croatia do not prepare transfer pricing documentation. The study results indicated that the majority of related companies in Croatia applied cost-based transfer pricing methods, i.e., transfer prices in related companies in Croatia were determined on the cost basis. Survey results from 2008 showed that the most applicable OECD transfer pricing method in related companies in Croatia was the comparable uncontrolled price method, while survey results from 2012 showed nearly equal application of all OECD transfer pricing methods.

Although study results indicated that control of transfer pricing in Croatia is still not implemented at an acceptable level, it is important for the national tax authority to conduct certain activities in order to improve and facilitate control of transfer pricing. The recommendations that would improve the control of transfer pricing are the following:

- implementation of a more adequate and more appropriate institutional framework for transfer pricing
- definition of the content of transfer pricing documentation
- monitoring of transactions between related companies and control of transfer prices charged in these transactions
- detailed analysis of transfer pricing documentation
- consideration of the appropriateness of the application of certain transfer pricing methods
- make a decision about the application of the arm's length principle in transfer pricing on the basis of transfer pricing documentation and on the analysis of all conditions and circumstances of controlled transactions conducted between related companies as well as analysis of all factors which have an influence on transfer price determination
- offer the possibility of the application of advanced transfer pricing agreements between the tax authority and companies that obligates payers of corporate profit tax.

If the tax authority increases the level of control of transfer pricing, related companies in Croatia will direct more attention to transfer pricing. The key factor for more effective transfer pricing control in Croatia is development of more detail in the appropriate Transfer Pricing Ordinance, which will more accurately define all transfer pricing issues, especially the content of transfer pricing documentation. Detailed definition of content of transfer pricing documentation will enable efficient and easier transfer pricing control by the tax authority.

In future research, it will be useful to examine how and to what extent different legal, political, social, internal and external economic factors have had an influence on the determination of transfer pricing and the selection of transfer pricing method and the most important determinants influencing the method that companies use.

### **Disclosure statement**

No potential conflict of interest was reported by the authors.

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