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HOW CORRUPTION AFFECTS BUSINESS RESULTS: THE CASE OF CROATIA ¹

for each group of firms. The preliminary results indicate that corruption is more affecting small firms in Croatia. Policy recommendations and lines of further research are discussed.

Keywords: *corruption perceptions of business, financial results, Croatia*

The background of this paper is found in recent theories why corruption prevalence menaces the safety of business environment. In order to examine if exposure to corruption derogates business results of firms in Croatia we have tested the hypothesis that higher corruption perceptions of business leaders in small, medium and large firms in Croatia are associated with firms' worse financial results. As a seminal research we measure corruption perceptions of business by employing unique data from three annual surveys conducted in more than one hundred firms in Croatia. The constructed index of corruption perceptions of business is used in the empirical analysis how higher corruption perceptions of firms in Croatia are affecting financial results in terms of total revenue per employee, net profit per employee and total sales per employee. The years of observation are 2002, 2003 and 2004. The extension of our research to three groups of small, medium and large firms in Croatia aims to separately examine the correlation between corruption perceptions indices and financial results

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INTRODUCTION

Corruption is attracting growing attention in current research because of its recognized negative effects to growth and development (Mauro, 1995). Corruption acts as an arbitrary tax increasing the cost of doing business and reallocating resources towards less efficient usage (for literature review, see Jain, 2001). One of the most widely used definitions of corruption is "the abuse of public office for private gain" (World Bank, 1997). Corruption activities involve public sector, notwithstanding if transactions are performed within public sector itself or if they comprise deals between private firms (or individuals) and public officials or public administration employees². In this paper we focus on corruption transactions between private and public sector, examining the link between corruption perceptions of economic agents and business performance of firms in Croatia.

In order to examine if exposure to corruption derogates business results of firms in Croatia we have tested the hypothesis that higher corruption perceptions of business leaders in small, medium and large firms in Croatia are associated with worse financial results.

As a seminal research we have measured corruption perceptions of business by employing unique data from three annual surveys conducted

² Corruption may occur in private sector only, e.g. when a firm employee favors one supplier in exchange for personal award, but it is considered that corruption in private sector is less widespread or at least that there are mechanisms of internal control sanctioning such a misbehavior (see Mauro, 1997 and World Bank, 1997).

in more than one hundred firms in Croatia. The constructed index of corruption perceptions of business was used in the empirical analysis how higher corruption perceptions of small, medium and large firms in Croatia are affecting financial results in terms of total revenue per employee, net profit per employee and total sales per employee. The years of observation are 2002, 2003 and 2004.

Following this introductory section, the paper is organized as follows. The next section presents recent theories why corruption prevalence menaces the safety of business environment. Findings are supported by the evidence of Business Environment and Enterprise Performance Survey (BEEPS) in the part of corruption focused on the new European Union member states and candidate countries. In the third section we explain methodology and data sources used in the analysis of corruption perceptions of firms in Croatia and their financial results. Empirical modeling results are given in the section that follows, while the last section concludes.

ASSESSING THE IMPORTANCE OF CORRUPTION-FREE BUSINESS ENVIRONMENT

Corruption is recognized today as one of the main obstacles of doing business. However, empirical research on corruption perceptions influence on business results in national economies is still rather rare. First of all, the clandestine nature of corruption makes the real costs of corruption immeasurable. Therefore the *perceptions* of corruptions are used as measures of corruption. Indicators of corruption reflect subjective opinions of analysts, business people, and citizens on the corruption prevalence. Two most commonly used indicators of corruption perceptions are Corruption Perceptions Index of Transparency International (www.transparency.org) and Control of Corruption of the World Bank (Kaufman et al., 2002). Those indicators enable comparative analysis of the overall level of corruption perceptions by country, but provide no insight into corruption in particular economic activity, region or society group. The lack of analysis at micro level is usually connected with the problem of collecting the reliable time series data on corruption perceptions for targeted sub-national sample.

On the other hand, international organizations emphasise the role of the private sector as crucial

at the supply side of corruption transactions³, in particular of political corruption (Transparency International, 2004)⁴. There is abundant literature on business approaches to combat corrupt practices (Gordon and Wynhoven, 2003), but very little empirical research on firms being exposed to corrupt practices and how this exposure affects their financial results.

However, the recent empirical evidence confirms that corruption substantially reduces firm performance. The survey on private firms in Latin America used to assess the effects of corruption on firm competitiveness, provided arguments that corruption reduced sales growth (Gaviria, 2001). McArthur and Teal (2002) found that companies in Africa that pay bribes have 20 per cent lower output in terms of value of total sales per worker. Empirical research on causes and consequences of corruption at the firm level in Uganda found that 81 per cent of firms surveyed reported paying bribes; the firms receiving public infrastructure services, engaged in trade or paying more taxes face a higher exposure to bribe-seeking. Variations in bribes were explained by the financial strength of the surveyed firms determining firms' ability to pay bribes and firms' "refusal power" to avoid paying bribes (Svensson, 2003). Such empirical investigation including cross-section analysis of firms in a country is useful for policy decision-makers to target better their anti-corruption policy measures.

How corruption is affecting the business environment quality - evidence for EU new member states and candidate countries

There is a rising awareness of how corruption-free business environment is crucial to the success of national economy, especially for the economies in transition. Namely those countries are perceived to have high prevalence of corruption while the expansion of private sector is at the same time considered as a generator of growth in emerging economies. Therefore the World Bank and the EBRD

³ Private sector might generate the demand for corruption deals as well; firms seeking to evade regulations by bribing inspectors or lobbying politicians to resist legal reforms are the common cases of such a corrupt behavior. Private sector-initiated corruption occurs in weak institutional environment (see Damania et al., 2003).

⁴ See also OECD www.oecd.org.

have jointly developed the Business Environment and Enterprise Performance Survey (BEEPS) conducted in transition countries in 1999 and 2002⁵. BEEPS presents opinions of managers of over 4000 firms in 1999 and 6100 firms in 2002 on corruption, state capture and lobbying that can be related to firm performance. The growing interest in the quality of business environment is confirmed by the latest appearance of other studies such as comparative study of business environment in Czech Republic, Hungary, Poland and Slovakia (Korner et al., 2002). One has to notice that within institutional determinants of safe business environment, all empirical research in this field include corruption as one of the aspects of governance quality.

As an introduction to our analysis of corruption perceptions of business in Croatia we have chosen the year 2002 BEEPS results targeting the same areas of corruption as we have examined for Croatian firms in 2002, 2003 and 2004. Furthermore, we have compared selected BEEPS results for the particular group of transition countries sharing the same process of accessing the European Union (EU) to which Croatia belongs. Therefore we have analysed the comparative characteristics of corruption and state capture that firms in eight new EU member states (NMS-8) and in three candidate countries (CAC-3) faced in year 2002.

Table 1: Firms' exposure to corrupt practices in regular business operations, 2002

It is common for firms in my line of business to have to pay some irregular additional payments/ gifts "to get things done" with regard to customs, taxes, licenses, regulations, services, etc.		
Country	Frequently, usually or always (share of total responses)	Index of corruption exposure NMS-8 and CAC-3 average=100
Bulgaria	32.7%	156.0
Croatia	12.9%	61.5
Czech Republic	13.3%	63.4
Estonia	12.1%	57.7
Hungary	22.6%	107.8
Latvia	17.9%	85.4
Lithuania	20.5%	97.8
Poland	18.6%	88.7
Romania	36.8%	175.5
Slovakia	36.1%	172.2
Slovenia	7.1%	33.9
<i>NMS-8 and CAC-3 average</i>	<i>21.0%</i>	<i>100.0</i>

Source: Business Environment and Enterprise Performance Survey BEEPS 2002, EBRD-World Bank Business

Firms' exposure to corrupt practices in doing regular business operations such as to bribe-seeking from corrupt officials for obtaining trade permits, when paying taxes or asking for other public administration services is evident from the survey results (Table 1). In our sample of 11 EU new member states and candidate countries, 21% of firms consider that irregular payments are frequent, usual or always needed to get done business operations

related to customs, licenses, taxes, regulations and services. Firms in Romania, Slovakia and Bulgaria are in those everyday business operations the most exposed to the corrupt practices. Opinion of firms in Croatia denotes much less corruption exposure, about 40% below the NMS-8 and CAC-3 average. Slovenian firms reported to be the less exposed to the corrupt practices.

⁵ www.ebrd.org/pubs/index.htm

Table 2: Firms' exposure to state capture, 2002

Private payments/gifts or other benefits to Government officials to affect the content of government decrees have a direct impact to my business		
Country	Major and/or decisive impact (share of total responses)	Index of state capture NMS-8 and CAC-3 average=100
Bulgaria	14.2%	273.1
Croatia	4.9%	94.2
Czech Republic	2.9%	55.8
Estonia	2.9%	55.8
Hungary	3.2%	61.5
Latvia	10.2%	196.2
Lithuania	4.7%	90.4
Poland	2.2%	42.3
Romania	4.8%	92.3
Slovakia	4.4%	84.6
Slovenia	2.8%	53.8
<i>NMS-8 and CAC-3 average</i>	<i>5.2%</i>	<i>100.0</i>

Source: Business Environment and Enterprise Performance Survey BEEPS 2002, EBRD-World Bank Business

Political corruption affecting business of firms in NMS-8 and CAC-3 is evident from the Table 2. In the selected group of countries, 5.2% of firms surveyed in 2002 consider private payments to government officials have major or/and decisive impact to their business. In Bulgaria, the response rate is 2.7 times above the selected countries' average while the lowest state capture is observed in Slovenia again. Croatian firms' response rate of 4.9% is in line with the group's average (Croatian index of state capture is 94.2).

METHODOLOGY AND DATA

To examine the link between corruption and financial performance of Croatian firms, we considered the size of the firm as a distinctive attribute to be included in our model. Corruption is often coercive for small firms emerging in a very competitive market, while large companies can better protect themselves from "petty" corruption and have respectable market power to transfer costs of corruption to the end-consumers (Tanzi, 1998). Empirical evidence indicated that corruption transactions have a constant relative share of Croatian enterprises' business operation cost. When corruption costs have effects similar to the flat tax rate, they cause more burdens to small firms operating in industries with lower capital turnover ratio (Budak, 2005).

Corruption perceptions of firms in Croatia

To measure the perceptions of corruption of economic agents in Croatia we have employed the raw data collected by structured interviews with managers of about hundred firms in Croatia in year 2002, 2003 and 2004. The survey is annually conducted among firms for the Global Competitiveness Report (GCR) and it captures the perceptions and observations of business leaders in a given country⁶. The original responses to the selected questions regarding the corruption prevalence as seen by Croatian managers were employed to construct the Index of corruption perceptions of business (CPB). The responses were classified according to the size of a firm (Table 3).

⁶ Croatia was for the first time included in the Global Competitiveness Report in 2002 (World Economic Forum

<http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CGlobal+Competitiveness+Report>). The partner institution in Croatia is National Competitiveness Council (www.konkurentnost.hr). Authors would like to thank Ms. Ružica Šimić to provide us with the selected responses from the survey. The raw data are agreed to be used in aggregate form for scientific research purpose only and not to be distributed in public.

Table 3: Number of firms surveyed per size - in number of employees; 2002, 2003, 2004

Size of a firm		Number of firms surveyed		
Number of employees	Group	2002	2003	2004
up to 100	small	23	45	63
from 100 to 500	medium	61	42	28
more than 500	large	40	22	18
Total number of firms		124	109	109

Source: Opinion survey for the Global Competitiveness Report of World Economic Forum and Harvard University in Croatia, 2002., 2003, 2004.

Although in the standardized GCR questionnaire many questions consider corruption perceptions, we have selected eight questions that tackle

the forms of corrupt activities which may influence the firm financial results the most. Questions taken into account in the analysis are listed in Table 4.

Table 4: Selected survey questions on corruption perceptions of firms in Croatia

No.	Question	Score 1	Score 7
Q1	When <i>deciding upon policies and contracts</i> , government officials favor well-connected firms and individuals	usually favour	are neutral
Q2	<i>Diversion of public funds</i> to companies, individuals or groups due to corruption in your country	is common	never occurs
Q3	In my industry I estimate that firms make undocumented extra payments or bribes connected with <i>import and export permits</i>	is common	never occurs
Q4	In my industry I estimate that firms make undocumented extra payments or bribes connected with <i>loan applications</i>	is common	never occurs
Q5	In my industry I estimate that firms make undocumented extra payments or bribes connected with <i>connection to public utilities</i> (e.g. telephone or electricity)	is common	never occurs
Q6	In my industry I estimate that firms make undocumented extra payments or bribes connected with <i>influencing of laws and policies, regulations, or decrees to favor selected business interests</i>	is common	never occurs
Q7	In my industry I estimate that firms make undocumented extra payments or bribes connected with the <i>awarding of public contracts</i> (investment projects)	is common	never occurs
Q8	In my industry I estimate that firms make undocumented extra payments or bribes connected with <i>annual tax payments</i>	is common	never occurs

Source: Opinion survey for the Global Competitiveness Report of World Economic Forum and Harvard University in Croatia, 2002, 2003, 2004.

An answer option offered to each question was a score on the scale from 1-highly corrupted to 7-highly clean. By pulling out the raw data from the questionnaire, for each question only the responses scored 1, 2 and 3 were taken into account as a raw data input for the analysis. Namely, those are the scores denoting higher corruption perceptions so they are employed to calculate the percentage of firms expressing higher corruption perceptions in that segment.

The share of responses scored 1, 2 and 3 was calculated for each of three groups of firms-for small, medium and large enterprises separately.

The total share of responses to one question denoting higher corruption perceptions was calculated by weighting the ratio of small, medium and large firms in the total number firms that have answered to that particular question (Table 5).

The survey opinion results indicate growing perceptions of corruption as seen by business people in Croatian firms (in average from 37% of responders in 2002 to 44% in 2004). The highest perceptions of corruption prevalence are observed in all three groups of firms in Croatia regarding the presence of political corruption (question 1). The share of managers who consider that firm should

be well-connected to the government officials to compete successfully to the public procurement or investment projects is rising, reaching 82% of responses in 2004. The notable increase of corruption perceptions of the large firms indicate that large companies in Croatia are increasingly oriented to seek personal ties to approach government funds. That finding is confirmed by the answers to question 2 and question 7 regarding the embezzlement of public funds. 52 per cent of managers in 2004 considered that dispersion of public funds to private sector due to corruption is common, compared to "just" 34% in 2002.

of the most destructive effects of corruption in a society.

Small firms are much more exposed to bribe-seeking when asking for connections to public utilities, export and import permits or loan applications. The lowest corruption perceptions are observed to get connection to public utilities (in average 22 % of responses in 2004), probably because the basic infrastructure such as telephone and electricity is accessible within the whole territory of Croatia (question 5). It is estimated that one third of all companies in 2004 tended to solve export and

Table 5: Responses indicating higher corruption perceptions of small, medium and large firms, in % of total responses, in 2002, 2003, 2004

Question	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Average
2004	% of responses scored 1, 2, 3 denoting higher corruption perceptions								
small	85.5	55.7	42.4	45.8	28.3	65.0	65.0	26.6	51.8
medium	75.0	42.9	21.4	14.3	14.3	42.9	42.9	17.9	33.9
large	83.0	50.0	29.4	17.6	11.8	52.9	52.9	5.9	37.9
all firms	82.4	51.5	34.8	32.8	21.8	46.3	57.1	20.9	43.5
2003	% of responses scored 1, 2, 3 denoting higher corruption perceptions								
small	70.5	55.6	43.9	58.5	35.0	51.2	68.3	34.1	52.1
medium	81.0	45.0	36.6	42.5	12.2	43.6	45.0	22.5	41.1
large	68.2	22.7	27.3	18.2	18.2	40.9	40.9	18.2	31.8
all firms	74.1	44.9	37.5	43.7	22.3	46.6	53.2	26.2	43.6
2002	% of responses scored 1, 2, 3 denoting higher corruption perceptions								
small	74.0	39.0	26.0	39.0	22.0	39.0	61.0	26.0	40.8
medium	77.0	40.0	30.0	34.0	21.0	36.0	46.0	28.0	39.0
large	78.0	21.0	25.0	28.0	18.0	35.0	36.0	13.0	31.8
all firms	76.8	34.0	27.7	33.0	20.2	36.2	45.6	22.9	37.1

Source of original data: Opinion survey for the Global Competitiveness Report of World Economic Forum and Harvard University in Croatia, 2002, 2003, 2004.

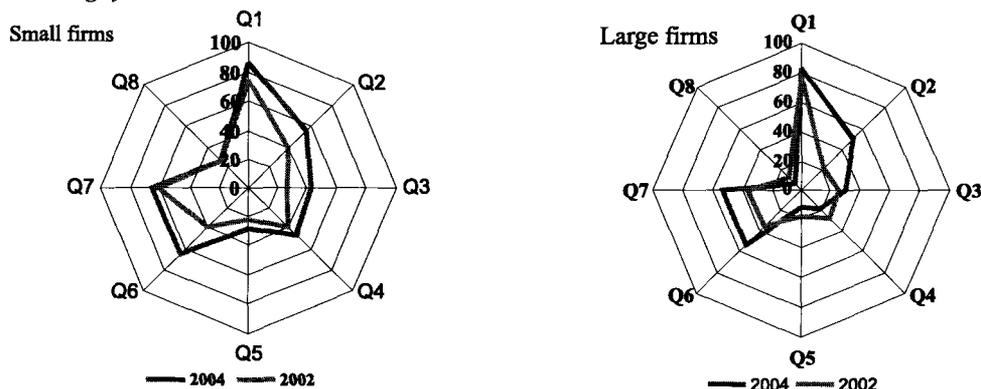
Besides growing perceptions of corruption-influenced economic policy decisions, even more worrying is widespread estimate that almost half of firms in the industry pay bribes to secure legal framework and regulations that would favour their business interests (question 6). Additional 44% of responders in 2004 considered bribes as a common tool to get favourable court decision⁷. The derogation of rule of law by corruption transactions is one

import permits and loan applications problems by bribing officials (question 3 and 4).

Corruption prevalence as seen by managers of Croatian firms is more affecting business of small firms compared to large ones. The increased perceptions of corruption are observed for both small and large firms in year 2004 compared to 2002 (Figure 1).

⁷ Answers to that particular question were omitted from the analysis of corruption perceptions of business in Croatia because we consider it only indirectly affects the financial results of firms in Croatia.

Figure 1: Comparison of corruption perceptions per eight questions on corruption prevalence, as seen by small and large firms in Croatia in 2002 and 2004



Source of original data: Opinion survey for the Global Competitiveness Report of World Economic Forum and Harvard University in Croatia, 2002, 2003, 2004.

Financial results of Croatian firms

Assuming that exposure to corruption has negative effects to the economic performance of the firms, as a measure of Croatian firms' business results we have used their financial results. As a proxy for financial results we have taken the annual total revenues, net profits and total sales data. There is a comprehensive back up why we have used those indicators as a measure of financial results. First of all, corruption acts as an arbitrary tax increasing costs. However, due to the clandestine nature of corruption, the corruption payments are not evident in business operation costs, and therefore the total costs data are not considered the appropriate variable to be directly connected with the corruption. Our aim at this point of preliminary research is not to measure the corruption costs or to assign them to the operational costs of the firms. We have rather intended to examine if corrupt environment is influencing the success of the firms. In our simplified model, the total revenue, net profit and total sales stand as a wide measure of financial success of the entrepreneurs⁸. The raw data on financial results as well as on the number of employees are provided by the Croatian Financial Agency FINA (Appendix A).

⁸ Accounting policies, macroeconomic environment, market position of national firms and other factors influencing business results are suggested variables to be included in the model for the future research.

In order to make the selected financial performance indicators comparable among categories of firms, we have expressed their value in HRK per employee. One has to point out that the financial performance of firms by category is downsizing from large to small firms. That is observed already from the brief insight in financial results per employee for the latest year 2004. Total revenue per employee in small firms in 2004 was 410,438 HRK while total revenue per employee in large firms was 743,886 HRK. Net profit per employee of small firms was also far below the net profit per employee in large firms. In year 2004, small firms in Croatia had net profit per employee (16,531 HRK) at about 40% level of net profit per employee of large firms (38,607 HRK). Total sales per employee in large firms (698,586 HRK) in 2004 almost doubled average total sales per employee in small firms (389,653 HRK).

Disparities between (worse) financial results of small and (better) financial results of large firms are evident for all years of observation (2002, 2003, and 2004) and for all three financial indicators per employee.

EMPIRICAL MODELLING

In the model of examining the relationship between corruption perceptions of business and the financial results of small, medium size and large

firms in Croatia in the period from 2002 to 2004, we have used variables expressed as indices. The data on corruption perceptions and financial results per employee described in Section 3 are converted into indices, where the average for all firms is index 100.

The annual index of corruption perceptions of business (CPB) for Croatia was calculated by summing the percentage of responses for all eight questions by the size of the firm and in total. We proceeded with calculating an average percentage of answers denoting higher corruption perceptions for all categories of firms (as previously shown in Table 5). Based on those shares, indices of corruption perceptions of small, medium-size and large firms were calculated for each year, where the weighted average of higher corruption perceptions responses of all firms is index 100.

The conversion to indices was also performed for total revenue per employee, net profit per employee and total sales per employee (the raw data in Appendix A). For example, total revenue per employee in HRK was for the each one category of firms – small, medium and large – expressed as index, where total revenue per employee for all firms in the year of observation is index 100. The same conversion to indices was applied to net profit per employee and total sales per employee.

The summary of indices of corruption perceptions of business and indices of financial results per employee for small, medium and large firms in Croatia for three years available are shown in Table 6.

Index of corruption perceptions of business in Croatia therefore denotes if corruption perceptions of three categories of firms are higher or lower than the total firms average corruption perceptions. In 2004, CPB of small firms equated 119.2 indicating that corruption perceptions of small firms was 19% above the average corruption perceptions of all firms surveyed in Croatia. On the contrary, CPB of large firms was 87.3% what denotes that large entrepreneurs in Croatia in year 2004 had corruption perceptions 13% below total firms average.

Similarly, index of total revenue per employee indicates if the total revenue per employee in small, medium and large firms is higher or lower than the average of total revenue per employee in all Croatian firms. For example, index of total revenue per employee in small firms in 2004 was 68.8, indicating that total revenue per employee in small firms was 31% below the Croatian average. In the same year, large firms had total revenue per employee for 24.7% above the Croatian average.

Regarding the net profit per employee, in 2004 index of net profit per employee for small firms (58.7) indicates that net profit per employee in small firms was 41.3% below the Croatian average. In the same year, large firms had net profit per employee for 37.4% above the Croatian average.

Index of total sales per employee also shows worse financial results of small compared to large firms. Index of total sales per employee in 2004 in small firms was 30% below the all firms' average, while index of total sales in large firms was 24.4% above the average.

Table 6: Index of Corruption Perceptions of Business (CPB), Index of total revenue per employee, Index of net profit per employee, Index of total sales per employee; for small, medium and large firms in Croatia; in 2002, 2003, 2004

Firms	CPB			Index of total revenue			Index of net profit p.e.			Index of total sales p.e.		
	2002	2003	2004	2002	2003	2004	2002	2003	2004	2002	2003	2004
small	110.0	119.0	119.2	77.9	72.6	68.8	52.4	65.9	57.8	80.3	73.5	69.4
medium	105.3	94.2	78.1	89.9	92.5	92.5	60.5	80.4	79.8	91.3	92.5	92.0
large	87.5	73.1	87.3	120.1	122.4	124.7	151.2	132.2	137.4	117.1	121.7	124.4
<i>all firms</i>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: authors' calculation. Source of original data: for CPB-Opinion survey for the Global Competitiveness Report of World Economic Forum and Harvard University in Croatia, 2002., 2003, 2004; for financial results-Croatian Financial Agency FINA.

Correlation analysis results

Our empirical analysis starts with examining the relation between corruption perceptions of business in and the financial results of firms in Croatia in year 2002, 2003 and 2004. The results of correlation analysis presented in Table 7 confirm there is a strong negative correlation between all three pair of variables. All correlation coefficients are significant at significance level of 5% ($p < 0.05$). There were nine observations included in analysis, three for each year – for small, medium and large companies.

Table 7: Correlation between CPB and financial results of all firms in Croatia, 2002-2004

Variables	Index of Corruption Perceptions of Business
Index of total revenue p.e.	-0.83
Index of net profit p.e.	-0.72
Index of total sales p.e.	-0.83

The correlation between Index of corruption perceptions of business (CPB) and Index of total revenue per employee as well as between CPB and Index of total sales per employee is very strong (coefficient = -0.83) and of expected negative sign. The correlation between CPB and Index of net profit per employee is also negative, but slightly less strong (coefficient = -0.72). Those findings confirm our hypothesis that regardless of firms' size, the higher corruption perceptions of firms in Croatia are associated with worse financial results.

To deepen our research on stronger impact of corruption perceptions to small firms compared to the large ones, we have proceeded with the analysis of correlation between CPB and financial results of small, medium and large firms. Three separate correlation analysis were conducted, one for each company size. There were three observations in each analysis, one for each year (Table 8).

The correlation coefficients between CPB and Index of total revenue p.e. are of expected negative sign indicating that higher level of corruption as perceived by small firms in Croatia is strongly associated with lower total revenue per employee (coefficient = -0.89). For the same pair of variables for medium size firms, the correlation is slightly weaker but also negative (coefficient = -0.77). No correlation is evident in the case of large firms (coefficient = -0.01).

The correlation between CPB and Index of net profit p.e. is hard to comment, given the positive and strong relation between this pair of variables for small (0.83) and large firms (0.72). On the contrary, the correlation coefficient for medium size firms is -0.79. One may speculate on accounting policies and other determinants of net profit as a financial indicator, but considering only three years of observations, it would be methodologically correct to re-test the correlation upon availability of consistent longer term data.

Index of total sales per employee and CPB are negatively correlated for all groups of firms. The correlation is very strong in the case of small firms (coefficient = -0.91), less strong for medium firms (coefficient = -0.49) and not strong for large firms (coefficient = -0.16). Those results are the most in line of our assumption that higher perceptions of corruption prevalence are more associated to worse financial results of small firms in Croatia. One has to note that total sales are considered as the less "subjective" financial measure of firm's performance. In the literature the value of total sales per employee is considered as the one of the purest measures of firm's output (McArthur and Teal, 2002). For this reason we believe that examining the relation between total sales and corruption perceptions might produce relevant findings of the harmful impact of corruption prevalence to the business results of firms.

Table 8: Correlation between CPB and financial results of small, medium and large firms in Croatia, 2002-2004

Firm size	CPB and Index of total revenue p.e.	CPB and Index of net profit p.e.	CPB and Index of total sales p.e.
Small	-0.89	0.83	-0.91
Medium	-0.77	-0.79	-0.49
Large	-0.01	0.72	-0.16

We estimate that small number of observations is the main reason why correlation coefficients are not statistically significant. Future research should increase number of observations in order to further test the statistical significance of results. Continuation of survey conducted for GCR will ensure achieving that goal. However, we believe that with certain dose of caution, our findings could be accepted. Comments on coefficients provided above are important indication of corruption affecting financial results of small firms. This is particularly true for the total sales per employee.

CONCLUSION

This paper contributes to the research of corruption as an obstacle of doing business. The Business Environment and Enterprise Performance Survey BEEPS 2002 results show the firms in EU new member states and candidate countries do not operate in corruption-free business environment. Croatia however, stands better of the selected group of countries average regarding the firms' exposure to corrupt practices in regular business operations but about the average regarding the firms' exposure to state capture. Those two dimensions of doing business in corruption infected environment, led us to examine the link between corruption perceptions of firms in Croatia and their financial results.

The selected responses from the interviews with managers of small, medium and large firms in Croatia in years 2002, 2003 and 2004 showed growing corruption perceptions, particularly regarding the political corruption. In 2004, 82% of managers considered that government officials favor well-connected firms when deciding upon policies and contracts. According to the opinion of more than a half of respondents, the embezzlement of public funds is occurring in Croatia. Violating the rule of law by paying bribes to protect their business interest is a common practice, as estimated by 57% of respondents. Small firms are much more exposed to corrupt practices when asking for connections to public utilities, export and import permits, and loan applications.

The annual index of corruption perceptions of business (CPB) was constructed upon the survey responses for three categories of firms in Croatia, where the all firms average stands as CPB=100. CPB of small firms is above the average corruption

perceptions, while the CPB of large firms is below the all firms' average. Small firms in Croatia have higher perceptions on corruption prevalence compared to those of large firms.

For the same period, the financial results of firms differ by the size group of the firm. Worse financial results of small firms and better financial results of large firms are evident for all three indicators of financial performance of Croatian firms: total revenue per employee, net profit per employee and total sales per employee.

That evidence led us to determine whether a link could be found between corruption perceptions of firms in Croatia and their underlying financial results. In a period from 2002 to 2004, there was a significant strong negative correlation between CPB and indices of total revenue p.e., net profit p.e. and total sales p.e. The prevalence of corruption as perceived by all firms in Croatia is strongly and significantly associated to lower financial results.

The second part of our seminal research aimed to examine if corruption more affects small enterprises in Croatia. We have analyzed the separate correlation between CPB and financial results of small, medium and large firms. The coefficients indicate that higher corruption perceptions are negatively and strongly associated to the worse financial results of small firms in Croatia, especially if total sales per employee stands as a measure of financial performance. Even though they are not statistically robust because of too little number of observations, we have considered of an utmost importance to comment on preliminary results. Indications on corruption being more associated to the worse financial results of small firms and less affecting large companies, call for early policy measures. The immediate anti-corruption policy targeting corruption-free business environment should be focused primarily on eliminating administrative barriers of doing business (Singer, 2005), thus eliminating the sources of corruption.

A suggested line of a future research is to test again the relation between corruption perceptions and financial results of three categories of firms in Croatia, when more data become available. In the extended empirical model, one should consider specific variables describing barriers of doing business in Croatia to be included.

Appendix A. Number of employees, total revenue, net profit, total sales of small, medium and large firms in Croatia, in 2002, 2003, 2004

	Number of employees	Total revenue		Net profit		Total sales	
		in millions HRK	per employee in HRK	in millions HRK	per employee in HRK	in millions HRK	per employee in HRK
2004							
small	268,389	110,157	410,438	4,354	16,223	104,579	389,653
medium	156,407	86,053	550,186	3,507	22,422	80,790	516,535
large	386,980	287,869	743,886	14,940	38,607	270,339	698,586
all firms	811,776	484,079	596,321	22,801	28,088	455,708	561,372
2003							
small	262,844	108,229	411,761	4,345	16,531	103,252	392,828
medium	158,971	83,354	524,335	3,206	20,167	78,562	494,188
large	375,081	260,365	694,157	12,443	33,174	243,991	650,502
all firms	796,896	451,948	567,135	19,944	25,090	425,806	534,331
2002							
small	246,854	99,954	404,911	3,848	15,588	95,666	387,542
medium	156,715	73,297	467,709	2,817	17,975	69,051	440,615
large	350,617	218,992	624,590	15,758	44,944	199,201	568,144
all firms	754,186	392,243	520,088	22,423	29,731	363,920	482,533

Source: FINA Analiza financijskih rezultata poduzetnika RH u 2002, 2003, 2004. Net profit and total sales data were provided by FINA upon request.

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UTJECAJ KORUPCIJE NA REZULTATE POSLOVANJA: STUDIJA SLUČAJA HRVATSKE

Sažetak

Rad se zasniva na suvremenim teorijama o negativnim učincima prisutnosti korupcije na uvjete poslovanja. U cilju ispitivanja kako izloženost korupciji utječe na poslovne rezultate poduzeća u Hrvatskoj, u radu se provjerava hipoteza da je veća prisutnost korupcije prema percepcijama rukovoditelja malih, srednje velikih i velikih poduzeća u Hrvatskoj povezana sa slabijim financijskim rezultatima poduzeća. U radu se po prvi puta temeljem podataka istraživanja mišljenja rukovoditelja hrvatskih poduzeća za tri konsekutivne godine mjeri percepcija korupcije gospodarstvenika, i to pomoću izrađenog indeksa percepcije korupcije gospodarstvenika. Indeks percepcije korupcije gospodarstvenika u empirijskoj se analizi koristi za ispitivanje kako viša percepcija korupcije u poduzećima u Hrvatskoj utječe na financijske rezultate iskazane ukupnim prihodom po zaposlenom, neto dobiti po zaposlenom i ukupnim prihodom od prodaje po zaposlenom. Godine opažanja su 2002., 2003. i 2004. godina. Istraživanje je prošireno na tri skupine malih, srednje velikih i velikih poduzeća u Hrvatskoj u cilju ispitivanja korelacije između indeksa percepcije korupcije gospodarstvenika i financijskih rezultata za svaku pojedinu skupinu poduzeća. Preliminarni rezultati analize ukazuju da korupcija više pogađa mala poduzeća u Hrvatskoj. Zaključno se navode preporuke mjera politike i smjernice nastavka istraživanja.

Ključne riječi: percepcija korupcije gospodarstva, financijski rezultati, Hrvatska