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Index of Rationality

12.

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1. GOALS AND METHODOLOGY

Centre for Civic Communications from Skopje is the only non-governmental organization in the Republic of Macedonia that implements direct and comprehensive monitoring of public procurements in the country. In an attempt to make additional contribution to advancing state-of-affairs in this field, the Centre initiated development of so-called Index of Rationality in public spending. It aims to introduce a new instrument that will be used to assess effectiveness of public spending, to identify bottlenecks in the system and, ultimately, to contribute to institutions' cost-effective spending of budgets sustained by taxpayers.

Index of Rationality is developed by comparing prices under which different institutions have purchased same goods, services or works. In addition to enabling comparison of prices, analysis of same types of products, services or works allows identification of different patterns of behaviour on the part of state institutions when implementing same type of procurements.

The Index is envisaged to serve state institutions as an indicator against which they will improve rationality in public procurements, i.e. public spending. Given that the index-included prices are the average value of those paid by institutions and do not imply actual or market prices, state institutions should, whenever possible, pursue attainment of lowest prices and spend public funds in a more rational manner, moreover knowing that other institutions have attained more favourable prices on the market of public procurements.

Differences in price paid by institutions for same type of products and services indicate the need for thorough market research prior to tender announcement and harmonized approach on the part of contracting authorities when procuring same type of products.

The sample used to develop this Index includes all contracting authorities on national and local level, from line ministries and municipalities, public enterprises and agencies, to schools and kindergartens.

Development of the Index of Rationality relies on primary and secondary data sources.

Primary data collection is pursued by means of:

- attendance at public opening of bids submitted by economic operators in specific public procurement procedures, in order to obtain data on prices bided; and
- direct contacts with contracting authorities, in order to obtain data on the selection of the most favourable bid.

These activities enabled direct sources of data on prices under which given products, services or works have been procured.

Secondary data sources include:

- the Electronic Public Procurement System (EPPS); and
- Freedom of Information (FOI) applications.

It should be noted that the Index of Rationality will disclose contracting authorities monitored, but not companies with which contracts have been signed (although data thereof is available), due to the fact that responsibility for rational public spending primarily lies with contracting authorities.

Starting with this issue of the Index of Rationality, the methodology has been adjusted in terms of calculating differences in price paid by individual institutions for same goods and services. Notably, instead of calculating differences in price attained by individual institutions by comparing them against the average price calculated, the adjusted methodology presents these differences as percentage of deviation against the average price attained. The new method of computing provides clearer and more precise representation of differences in price for goods and services included in the respective index.

2. INDEX OF RATIONALITY

Index of Rationality no. 12 is developed for the following types of goods and services:

- **vertical traffic signals (traffic signs);**
- **horizontal traffic signals (street markings);**
- **fiscal cash registers;**
- **outdoor video surveillance cameras; and**
- **financial audit services.**

Development of this Index of Rationality includes national and local institutions that organized public procurements for these types of goods or services in the course of 2013 and 2014.

Initially, the Index of Rationality targeted 70 institutions on national and local level, but due to objective and subjective reasons, it relies only on data related to prices for goods and services attained in 36 tender procedures organized by 34 contracting authorities.

2.1 Index of Rationality for Vertical Traffic Signals

This is one of the indices of rationality whose development was the most time-consuming. In the period of one year, relevant institutions were addressed with three rounds of FOI applications inquiring information about procedures implemented for procurement of traffic signs, in the following intervals: December 2013, May 2014, and November 2014. Problems encountered in this regard concern incomplete data disclosed by the institutions, preventing clear definition of traffic signs purchased as precondition for developing this index. Ultimately, these problems raised doubts about attempt on the part of some contracting authorities to prevent development of this index. Nevertheless, comparability of data was finally secured and the Index of Rationality for vertical traffic signals was developed on the basis of prices paid by contracting authorities for one and the same traffic sign, i.e. traffic sign indicating mandatory stop, labelled with number 202. It is a matter of circle-shaped traffic sign with regular octagon and inscription "STOP".

Given the fact that the Rulebook on Traffic Signs stipulates that this sign can be placed in three sizes (diameter of 40, 60 and 90 centimetres) depending on the intended location, the Index made due consideration of this parameter as well. Hence, the Index is developed by comparing procurement prices for this traffic sign with diameter of 60 centimetres, as the most frequently purchased size.

Differences in price presented in the Index are among the highest in general, i.e. from the first index developed in 2010, not only in terms of the present Index of Rationality.

Prices paid by institutions for procurement of one "stop" traffic sign range from 745 MKD to 3,882 MKD. The ratio between the lowest and the highest price is 1:5.21, which means that the Municipality of Debar paid a price per traffic sign that is by 421% higher than the price paid by the Municipality of Kavadarci.

Such great differences cannot be justified neither by the type of procurement procedure organized, nor by the criterion used for selection of the most favourable bid. Also, differences in price attained cannot be directly linked to the quantity of traffic signs purchased.

Index of Rationality for Vertical Traffic Signals

(price per 1 traffic sign for mandatory stop (202), with diameter of 60 cm)

Contracting authority	Price in MKD (VAT included)	Difference against the average price
Municipality of Kavadarci	745	-149.1%
Municipality of Strumica	889	-108.8%
Municipality of Struga	959	-93.5%
Average*	1,856	0.00%
Municipality of Ohrid	2,063	+10.0%
Municipality of Gostivar	2,596	+28.5%
Municipality of Debar	3,882	+52,2%

*Average is calculated from prices paid by individual institutions included in this Index of Rationality.

Initially, development of this Index targeted 20 contracting authorities that announced their procurement notices in the period June 2013 – August 2014. However, given the above-indicated problems related to comparability of data, in the end the Index is developed only for six contracting authorities.

As shown in the table above, the average price for procurement of one “stop” traffic sign is 1,856 MKD. Three municipalities have purchased such signs at prices lower than the average, and another three municipalities attained prices that are higher than the average price. Such great differences in price cannot be explained with the type of procurement procedure organized, because all municipalities organized adequate, law-stipulated types of procedures with previously announced procurement notice. In that, the Municipalities of Kavadarci and Ohrid organized open procurement procedures, and the remaining municipalities organized bid-collection procedures. Only the Municipality of Gostivar used the criterion defined as “most favourable bid”, where price was assigned 40 points, deadline for manufacturing - 20 points, payment deadline – 20 points, and warranty was assigned 20 points. All other municipalities included in the Index used the selection criterion defined as “lowest price”. Therefore, it does not surprise that the Municipality of Gostivar attained one of the highest prices for procurement of “stop” traffic signs, although three companies submitted bids in this tender procedure and e-auction was organized to reduce the price. Procurement procedure organized by the Municipality of Debar, which convincingly attained the highest price for this type of procurement, was presented with only one bid and the planned e-auction was not

organized. Thus, the procurement procedure implemented by the Municipality of Debar confirms that in cases when e-auctions are planned, but not organized due to lack of competition, there is high risk of signing the contract under higher prices. Notably, there is a common rule whereby companies, in expectation of downward bidding at the e-auction, initially offer prices that are higher, thereby allowing the possibility for these prices to be reduced as part of downward bidding at the e-auction.

Evidence in support of the fact that reasons behind differences in prices are unusual is presented in the table below, because direct relation between prices and quantity purchased could not be established. Relevant tender documents for procurement procedures organized by the Municipalities of Struga and of Gostivar did not include information about planned quantity, which should not and cannot be common practice, especially having in mind that the quantity to be purchased is one of the key parameters on the basis of which bidding companies establish their price bids.

Quantity of purchased “stop” traffic signs

Contracting authority	Number of traffic signs purchased	Difference against the average price
Municipality of Kavadarci	76	-149.1%
Municipality of Strumica	15	-108.8%
Municipality of Struga	/	-93.5%
Municipality of Ohrid	20	+10.0%
Municipality of Gostivar	/	+28.5%
Municipality of Debar	25	+52.2%

As shown in the table above, the Municipality of Kavadarci, which paid the lowest price per traffic sign, has purchased the highest quantity, but at the same time, the Municipality of Strumica, which attained a price lower than the average, purchased lower quantity of traffic signs compared to the Municipality of Debar, which paid the highest price per traffic sign.

2.2 Index of Rationality for Horizontal Traffic Signals

Prices at which institutions purchased horizontal traffic signals, i.e. street markings of solid line, broken line and parking line in white or yellow colour¹ per 1 m² range from 142 MKD to 354 MKD. The ratio between the lowest and the highest price is 1:2.49, which means that for one and the same service the Municipality of Struga paid a price that is by 149% higher than the price paid by the Municipality of Prilep. As regards this Index, it was noted that one and the same company has signed procurement contracts on provision of services related to traffic street markings with different contracting authorities at prices that differ by 120%. Reasons thereof, when analysed in the context of procurement procedure organized, can be identified in electronic auctions. In particular, procurement procedures that attained lower prices have also organized e-auctions, while procedures that attained significantly higher prices did not end with organization of e-auction on the grounds that only one bid was submitted. Certainly, this is indicative of the fact that, in expectation of the downward bidding, companies initially bid higher prices which, in the case of only one bidder participating in the tender procedure, enable signing of contracts under higher prices.

Index of Rationality for horizontal traffic signals (service price per 1 m² of street marking)

Contracting authority	Price in MKD (VAT included)	Difference from the average price
Municipality of Prilep	142	-52.8%
Municipality of Gevgelija	160	-35.6%
PUE "Low Constructions" - Bitola	187	-16.0%
Municipality of Kocani	212	-2.4%
Average*	217	0.00%
Municipality of Berovo	230	+5.7%
Municipality of Veles	236	+8.1%
Municipality of Struga	354	+38.7%

*Average is calculated from the prices paid by individual institutions included in this Index of Rationality.

¹ Data obtained show that there are no differences in price for service procurement depending on the colour used for street markings, in cases of white and yellow colours.

Development of this Index targeted public procurements for this type of service implemented in the first half of 2014 and organized by 10 contracting authorities. However, the Index includes only seven institutions, as the remaining three institutions applied different method for calculation of service price. As shown in the table above, the average price attained for this service is 217 MKD per 1 m² of street marking. Four municipalities paid prices that are lower than the average, while three municipalities paid prices higher than the average price. Differences in price are significant and cannot be justified with the type of procurement procedure organized and the criterion used for selection of the most favourable bid. The only important difference among these tender procedures is the competition level and thereby the possibility to organize planned e-auctions. Municipality of Prilep and the Public Utility Enterprise "Low Constructions" - Bitola organized open procedures, which means their procurements were of larger scope, while the Municipalities of Gevgelija, Kocani, Veles and Struga organized bid-collection procedures whose value exceeds 5,000 EUR, and the Municipality of Berovo organized bid-collection procedure whose value does not exceed 5,000 EUR. All contracting authorities used "lowest price" as the selection criterion for the most favourable bid. In general, competition in these procurement procedures is low, with maximum three bidding companies. Nevertheless, in some procurement procedures the competition level of two or three bidding companies allowed for organization of planned e-auctions. Planned downward bidding or price reduction by means of e-auction did not take place in procurement procedures that attained the highest prices, i.e. procurement procedures organized by the Municipalities of Veles and Struga. These cases are indicative of the negative effects of e-auctions, when competition in tender procedures is below the desired level and when planned e-auctions cannot be organized.

Quantity of services for horizontal traffic signals

Contracting authority	Quantity (in m ²)	Difference against the average price
Municipality of Prilep	10,500	-52.8%
Municipality of Gevgelija	1,900	-35.6%
PUE "Low Constructions" - Bitola (white)	7,500	-16.0%
Municipality of Kocani	/	-2.4%
Municipality of Berovo	/	+5.7%
Municipality of Veles	4,490	+8.1%
Municipality of Struga	/	+38.7%

Given that, as part of their tender specifications, some contracting authorities did not indicate the total number of m² to be covered with horizontal traffic signals, it is almost impossible to identify whether the quantity being purchased is directly linked to prices attained. However, among contracting authorities that indicated relevant quantities, some form of relation between the price attained and the quantity purchased is observed only in the case of Municipality of Prilep, meaning that it attained the lowest price and purchased a significant quantity. In the case of other contracting authorities included in this Index, this economic legality was not observed or established.

2.3 Index of Rationality for Fiscal Cash Registers

Introduction of new fiscal cash registers with GPS module is a law-stipulated obligation for taxpayers that had to be implemented in the period May – October 2014. On this ground, in the course of 2014 numerous state institutions at national and local level organized tender procedures for procurement of new fiscal cash registers. Procurements concerned fixed (immovable) and mobile (movable) cash registers. Nevertheless, differences observed in terms of type of fixed cash registers (those that can be connected to computers and others that do not allow such connection) prevented development of the Index of Rationality for fixed cash registers. Therefore, the Index was developed only for mobile cash registers. Nevertheless, it is still unclear why contracting authorities from the same line of business activity, such as those working in the field of health care, procured fixed (immovable) cash registers with different performance options, which inevitably leads to significant differences in price paid for that type of fiscal cash registers. Hence, for example, the Health Care Centre in Skopje purchased fixed cash registers at price of 11,180 MKD, the University Dentistry Clinic "St. Panteleimon" in Skopje - 12,876 MKD, the General Hospital "Ferid Murad, MD" in Gostivar – 13,724 MKD, the Health Care Centre in Strumica – 14,632 MKD, the University Clinic of Gynaecology and Obstetrics – 18,290 MKD, while the City General Hospital "8th September" in Skopje paid a price of 19,941 MKD. The conclusion is inferred that prices paid by some contracting authorities for procurement of fixed cash registers are higher than the retail price offered by the supplier. Examples like this bring under question the essence of public procurements, especially when they have attained prices higher than the market price.

As regards mobile cash registers, institutions purchased them at prices ranging from 10,894 MKD to 16,772 MKD. In that, the ratio between the lowest and the highest price is 1:1.54, which means that PHI Health Care Centre in Skopje purchased fiscal cash registers that are by 54% more expensive from those purchased by the Public Utility Enterprise in Strumica. Such differences cannot be justified with the quantity purchased, type of procurement procedure, or the criteria used for selection of the most favourable bid. What is specific for these procedures is the low competition

among bidding companies, which accounts for three companies only in the case of contracting authorities that attained the lowest prices.

Index of Rationality for mobile fiscal cash registers
(price per 1 mobile cash register)

Contracting authority	Price in MKD (VAT included)	Difference against the average price
PUE "Komunalec" - Strumica	10,894	-35.0%
PE "Public Parking" - Municipality of Centar	13,378	-9.9%
PHI Health Care Centre - Resen	14,042	-4.6%
Average*	14,706	0.00%
VET school "Boro Petrusovski" - City of Skopje	14,750	+0.3%
PHI Health Care Centre - Strumica	15,830	+7.1%
PE "Komunalec" - Bitola	15,990	+8.0%
Public Enterprise on Management and Protection of Multipurpose Area JASEN – Skopje	15,990	+8.0%
PHI Health Care Centre - Skopje	16,772	+12.3%

*Average is calculated from the prices paid by individual institutions included in this Index of Rationality

Development of this Index targeted 16 contracting authorities that organized procurement procedures for fiscal cash registers in the period January – July 2014. However, considering the already enlisted differences in the type of fixed cash registers, the Index was developed with information for only eight institutions that procured mobile fiscal cash registers.

As shown in the table above, the average price attained for procurement of this type of fiscal cash registers amounts to 14,706 MKD. Three contracting authorities purchased the cash registers at prices lower than the average, and five contracting authorities purchased them at prices higher than the average price.

All contracting authorities organized adequate, law-stipulated procedures for procurement of fiscal cash registers, among which most frequent are bid-collection procedures whose value does not exceed 5,000 EUR. Only the Health Care Centre in Skopje organized an open procedure, considering the high number of fiscal cash registers being purchased and, therefore, its tender procedure was of higher value. Without any exception, all contracting authorities used the selection criterion defined

as "lowest price". However, the maximum number of bidding companies participating in tender procedures was three and was observed in procurement procedures organized by PUE "Komunalec" - Strumica, PE "Public Parking" - Municipality of Centar, and PHI Health Care Centre - Strumica. One bidding company was registered in the tender procedure organized by PE "Komunalec" Bitola, while the remaining public procurements were characterized by competition level of 2 bidding companies, which ultimately allowed for organization of e-auctions.

Differences in price for procurement of mobile fiscal cash registers cannot be explained by the quantities being purchased.

Quantity of purchased fiscal cash registers

Contracting authority	Number of fiscal cash registers purchased	Difference against the average price
PUE "Komunalec" Strumica	11	-35.0%
PE "Public Parking" - Municipality of Centar	10	-9.9%
PHI Health Care Centre – Resen	2	-4.6%
VET school "Boro Petrusovski" - City of Skopje	8	+0.3%
PHI Health Care Centre – Strumica	2	+7.1%
PE "Komunalec" – Bitola	1	+8.0%
Public Enterprise on Management and Protection of Multipurpose Area JASEN – Skopje	4	+8.0%
PHI Health Care Centre – Skopje	20	+12.3%

As shown in the table above, the Health Care Centre – Skopje purchased the biggest quantity of cash registers, but at the same time attained the highest price. Having in mind that cash registers were procured from different suppliers, it is obvious that differences in price are ultimately a result of the terms and conditions they have imposed. However, under circumstances when all suppliers provide fiscal cash registers of standardized performance in compliance with the Law on Registration of Cash Payments, it is unclear how suppliers managed to maintain high differences in price for fiscal cash registers they offer.

2.4 Index of Rationality for Outdoor Video Surveillance Cameras

Prices at which institutions purchased one outdoor waterproof camera 1/3" intended for video surveillance range from 1,682 MKD to 6,490 MKD. The ratio between the lowest and the highest price is 1:3.86, which means that PUE Water Supply and Sewage – Prilep paid a price per camera that is almost three times as higher than the price paid by PHI General Hospital – Kumanovo. It is a matter of outdoor waterproof camera 1/3" with horizontal resolution of 520 to 700 TV lines, 3.6 mm lenses and distance recording from 20 to 50 meters. In that, analysis of technical specifications provides the conclusion that the three contracting authorities purchasing the most expensive cameras (Municipality of Debarca, National Institution "Museum of Contemporary Art" – Skopje and Public Utility Enterprise "Water Supply and Sewage" – Prilep) procured colour cameras, while the remaining contracting authorities did not enlist such requirement. Analysis of data shows that differences in price for this type of procurement cannot be justified with the type of procurement procedure organized, or with the quantity purchased.

Index of Rationality for video surveillance cameras

(price per one surveillance camera)

Contracting authority	Price in MKD (VAT included)	Difference against the average price
PHI General Hospital – Kumanovo	1,682	-159.5%
Agency for Management of Seized Property	3,697	-18.1%
State Student Dormitory "Nikola Karev" – Ohrid	4,134	-5.6%
Average*	4,365	0.00%
Municipality of Novaci	4,596	+5.0%
Municipality of Debarca ²	4,623	+5.6%
NI Museum of Contemporary Art – Skopje	5,330	+18.1%
PUE Water Supply and Sewage – Prilep	6,490	+32.7%

*Average is calculated from the prices paid by individual institutions included in the Index of Rationality

² The price included in the Index of Rationality is the weighted average calculated from prices for three types of cameras purchased by the Municipality of Debarca, as part of one public procurement procedure. Differences between the cameras purchased primarily concern their feature for distance recording. In that, this municipality purchased 3 cameras with distance recording up to 20 meters, 2 cameras – up to 25 meters, and 1 camera with distance recording up to 40 meters.

Development of the Index of Rationality for video surveillance cameras includes 13 contracting authorities that announced their procurement notices in the period January – April 2014. However, having in mind that some contracting authorities purchased indoor cameras, or their outdoor cameras do not comply with pre-defined parameters, ultimately the Index was developed on the basis of prices paid by seven contracting authorities for procurement of video surveillance cameras.

As shown in the table above, the average price attained for procurement of one camera is 4,365 MKD. In that, three institutions purchased the cameras at prices lower than the average, while four contracting authorities attained prices that are higher than the average price. The lowest price is by 159.5% lower than the average, and the highest price is by 32.7% higher than the average price.

Such great differences cannot be explained with the type of procurement procedure, but can be justified with the criteria used for selection of the most favourable bid and failure to organize e-auctions, although they have been planned. Namely, among the seven institutions included in the Index, as many as six organized bid-collection procedure whose value does not exceed 5,000 EUR for procurement of video surveillance systems. The only exception therefrom is PUE Water Supply and Sewage – Prilep, which organized open procedure for procurement and installation of video surveillance devices and services for technical and patrolling security. Nevertheless, differences were observed in terms of criteria used for selection of the most favourable bids, as well as the terms and conditions related to organization of planned e-auctions, as method for reducing initially bided prices.

In that, the two institutions with the most expensive video surveillance cameras used the selection criteria defined as “most favourable bid”, unlike other contracting authorities which used “lowest price” as their selection criterion.

Under the selection criterion “most favourable bid”, the National Institute “Museum of Contemporary Art” – Skopje, in addition to price that was assigned 60 points, included other bid-assessment elements (license on technical security issued by MOI – 20 points, technical characteristics - 10 points, and functional characteristic – 10 points). “Economically most favourable bid” was the selection criterion used by PUE Water Supply and Sewage – Prilep, whereby price was assigned 70 points, and technical and patrolling security was assigned 30 points.

Second important aspect that explains differences in price attained implies the fact that tender procedures organized by the Municipality of Debarca, NI Museum of Contemporary Art – Skopje, and PUE Water Supply and Sewage – Prilep, were not finalized with organization of e-auctions, although they have been planned. Common practice in cases when e-auctions are planned, companies initially offer higher prices, in anticipation of the downward bidding.

In terms of quantities purchased and their effect on prices attained, both institutions that purchased the cameras under the lowest and the highest price have signed procurement contracts for approximately same number of outdoor video surveillance cameras. In particular, PHI General Hospital – Kumanovo purchased 32 cameras, while PUE Water Supply and Sewage – Prilep purchased 30 cameras.

Quantity of purchased cameras

Contracting authority	Number of cameras purchased	Difference against the average price
PHI General Hospital – Kumanovo	32	-159.5%
Agency for Management of Seized Property	11	-18.1%
State Student Dormitory "Nikola Karev" – Ohrid	2	-5.6%
Municipality of Novaci	6	+5.0%
Municipality of Debarca	6	+5.6%
NI Museum of Contemporary Art – Skopje	7	+18.1%
PUE Water Supply and Sewage – Prilep	30	+32.7%

Small effect of quantity purchased on the price attained, which is economically illogical, is observed in the case of tender procedure for procurement of cameras organized by the State University Dormitory "Nikola Karev" in Ohrid, as this contracting authority purchased only two video surveillance cameras, but attained a price lower than the average price calculated for this Index.

2.5 Index of Rationality for Financial Audit Services

Prices attained by institutions for procurement of financial audit services range from 0.026% to 0.717% of the scope of audit's subject. Such differences cannot be justified with the type of procurement procedure organized or the manner in which they have been implemented. Nevertheless, major differences in scope of the audit's subject were observed, whereby the lowest fee expressed as share was paid by PE Railway Infrastructure Macedonian Railways – Skopje, whose subject of audit is of highest scope and amounts to 1,133,180,000 MKD, while the highest fee expressed as share was observed in the case of the Ministry of Agriculture, Forestry and Water Economy, whose subject of audit is the smallest in scope and amounts to 18,310,160 MKD.

Index of Rationality for Financial Audit Services (price expressed as share of financial turnover subject to audit)

Contracting authority	Price in MKD (VAT included)	Difference against the average price
PE Railway Infrastructure Macedonian Railways – Skopje	0.026%	-892.3%
JSC State Lottery of Macedonia	0.034%	-658.8%
Directorate for Technology and Industrial Development Zones	0.038%	-578.9%
PE Streets and Roads – Skopje	0.103%	-150.5%
PUE "Nikola Karev" – Probistip	0.254%	-1.6%
Average *	0.258%	0.00%
Ministry of Health	0.631%	+144.6%
Ministry of Agriculture, Forestry and Water Economy	0.717%	+177.9%

*Average is calculated from the prices paid by individual institutions included in the Index of Rationality.

Development of this Index targeted 11 contracting authorities that announced their procurement notices in the second and third quarter of 2014. However, the Index includes only seven contracting authorities, as the Agency for Electronic Communications and JSC "Macedonian Energy Resources" – Skopje did not reply to FOI applications submitted, while PE "Strezevo" – Bitola and State Video Lottery of the Republic of Macedonia disclosed only information about the value of their financial turnover that is subject of audit, which prevented any calculation of the service fee expressed as share.

As shown in the table above, the average price amounts to 0.258% of the audit's subject. In that five contracting authorities paid prices lower than the average, while two contracting authorities paid prices higher than the average price.

Such difference cannot be explained with the type of procurement procedure organized, notably because all contracting authorities organized procedures stipulated by the Law on Public Procurements (open procedures and bid-collection procedures). Selection criterion used in all procedures was "lowest price". All procurement procedures, with the exception of the procurement organized by PUE "Nikola Karev" – Probistip, were finalized with organization of e-auction. Although planned, the procurement procedure organized by the public utility enterprise in Probistip was not finalized with e-auction due to the fact that only one bid was submitted.

Differences in services fee, however, can be justified by the scope of financial audit's subject.

Scope of financial turnover subject to audit

Contracting authority	Financial turnover subject of audit (in MKD)	Difference against the average price
PE Macedonian Railways "Infrastructure" – Skopje	1,133,180,000	-892.3%
JSC State Lottery of Macedonia	309,110,366	-658.8%
Directorate for Technology and Industrial Development Zones	575,938,000	-578.9%
PE "Streets and Roads" – Skopje	227,907,020	-150.5%
PUE "Nikola Karev" – Probistip	47,222,908	-1.6%
Ministry of Health	73,878,843	+144.6%
Ministry of Agriculture, Forestry and Water Economy	18,310,160	+177.9%

As shown in the table above, PE Macedonian Railways "Infrastructure" – Skopje, which paid the lowest service fee, is marked by the highest financial turnover, unlike the Ministry of Agriculture, Forestry and Water Economy which paid the highest service fee, but had the lowest financial turnover subject of audit.

4. GENERAL CONCLUSION

This Index of Rationality is developed for a new group of goods (traffic signs, fiscal cash registers and video surveillance cameras) and services (street marking and financial audit), but revealed major differences in price attained by institutions for same type of goods/services.

The biggest difference in price was observed in procurement of financial audit services, while the smallest difference was noted in procurement of fiscal cash registers.

In summary, the Index of Rationality provides the following conclusions:

- **traffic signs** were purchases at prices ranging from 745 MKD to 3,882 MKD per 1 "stop" sign, where the highest prices is by 421% higher than the lowest price;
- **street marking (horizontal traffic signalization)** was priced from 142 MKD to 354 MKD per m², with the highest price being by 149% higher than the lowest price;
- **mobile fiscal cash registers** were purchased by institutions at prices from 10,894 MKD to 16,772 MKD, which means that the highest price is by 54% higher than the lowest price;
- **video surveillance cameras** were purchased at prices ranging from 1,682 MKD to 6,490 MKD, where the highest price for this procurement is almost three times as higher (286%) compared to the lowest price; and
- **financial audit services** were charged as share ranging from 0.026% to 0.717% of the financial turnover subject of audit, where the highest service fee is 27 times higher than the lowest service fee.

All procurements of goods and services included in this Index of Rationality have been made by means of procurement procedures stipulated in the Law on Public Procurements. In that, the dominant criterion for selection of the most favourable bid was defined as "lowest price". Thus, it is only logical to raise the question about the reasons for such great differences. Among obvious reasons thereof is the low competition level in tender procedures which, in some cases, ultimately resulted in the inability to organize planned e-auctions for downward bidding. Effects from the

non-organized electronic auctions are best represented in the case of procurements concerning traffic signs (vertical traffic signals), street marking (horizontal traffic signals) and video surveillance cameras. In all three indices, the highest prices were attained in the public procurement procedures that were not finalized with organization of e-auction, although they were planned, which was justified with the submission of only one bid per tender procedure. Overview of all three indices confirms the unwritten rule whereby companies, in anticipation of e-auctions, offer higher prices at the public opening of bids, counting on the possibility for these prices to be reduced in the course of downward bidding at the e-auction.

Nevertheless, the strongest argument in support of this claim is the knowledge acquired in developing the Index of Rationality for street markings (horizontal traffic signals) whereby it was observed that one and the same company has signed procurement contracts for street marking services with different contracting authorities at prices that differ by 120%. In that, the lower price was attained in the tender procedure that was finalized with e-auction, while the price attained in the procedure that anticipated downward bidding, but was not finalized with organization of e-auction due to lack of competition, was twice as higher. These examples, of course, should not be used as argument in support of mandatory e-auctions, whose organization in all types of procurement procedures raises serious question about the quality of procurements and, thereby, efficiency and cost-effectiveness of public spending. On the contrary, these examples are indicative of risks in cases of insisting e-auction to take place without making due consideration of state-of-affairs on the market and negative effects e-auctions can create when being organized under circumstances of utterly low competition.

In addition, such great differences in price can also be considered a consequence of non-existing clear goal and commitment on the part of institutions for efficient and cost-effective public spending.