INDEX OF RATIONALITY

3.

Skopje, December 2011

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The sample used to develop the Index can include all national and local level contracting authorities, i.e., from line ministries and municipalities, public enterprises and agencies, to schools and kindergartens. For the purpose of securing better coverage on the territory of the Republic of Macedonia, the Centre's monitoring team also includes representatives from civil society organizations seated in several municipalities country-wide.

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

The Index of Rationality uses primary and secondary data sources.

Data collection from primary sources is pursued by means of:

- attendance at public opening of bids submitted by economic operators under 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 provide data on prices paid to procure particular products, services or works.

Secondary data sources include:

- Electronic Public Procurement System (EPPS); and
- Free Access to Information (FOI) applications.

The research and the Index of Rationality were developed in cooperation with and financial support from the Foundation Open Society – Macedonia.

2 INDEX OF RATIONALITY

The third Index of Rationality is developed for the following five types of products, i.e. services:

- written translation from Macedonian into English language;
- air-conditioners;
- private security services;
- notebook computers;
- GPS vehicle devices;

The selection of Index-targeted products and services was made in compliance with their status of most commonly used products and services by national and local level institutions.

However, given the fact that, on one side, the methodology for Index-development implies comparison of prices attained by at least five institutions, and on the other hand, the information requested from institutions is not always disclosed or when disclosed it is not conductive to comparisons, for the purpose of developing the relevant indices of some Index-targeted products and services, apart from those implemented in the course of 2011, we included the public procurements implemented in the previous years as well.

For the purpose of securing data necessary for the Index development in regard to above mentioned products (air-conditioners, notebook computers, and GPS vehicle devices), i.e., services (written translation, private security service), the Center for Civil Communications submitted a total of 94 FOI applications to national and local level institutions.

When developing the individual indices with prices of targeted products and services, we resorted to the Freedom of Information Act (access to information of public character) and hence submitted FOI applications to the contracting authorities whose procurements were registered in the Electronic Public Procurement System (EPPS). The general idea behind the development of indices per individual products or services was to detect possible differences in price attained and thereby assist contracting authorities in learning more about price fluctuations related to these products, i.e., services.

2.1 INDEX OF RATIONALITY FOR WRITTEN TRANSLATION

The lowest and highest price ratio for the written translation from Macedonian into English language is 1:2.67, which means that the highest price paid for this service, as noted with the Parliament of the Republic of Macedonia, is by 167% higher than the lowest price attained by the Pension and Disability Insurance Fund of the Republic of Macedonia. It should be noted that the selection criterion for the most favourable bid used by both contracting authorities was "lowest price". However, unlike the Parliament of the Republic of Macedonia, when implementing the public procurement procedure the Pension and Disability Insurance Fund of the Republic of Macedonia used e-auctions, which is law-stipulated instrument used with a view to secure additional reduction in prices offered by the bidding companies. Indicative is the fact that the group of institutions that paid prices higher than the average include those whose procurement contracts were marked by the highest value, which is contrary to the basic economic logic that contract's higher value should result in decreased individual price.

Table 1:
Index of Rationality for Written Translation
(price paid per 1 translation page from Macedonian into English language)

CONTRACTING AUTHORITY	PRICE IN MKD (VAT INCLUDED)	DIFFERENCE AGAINST THE AVERAGE
Pension and Disability Insurance Fund of the Republic of Macedonia	228	-50.00%
Institute for Sociological, Political and Juridical Research	300	-34.21%
Joint Stock Company for Construction and Management of Residential and Business Premises	449	-1.54%
Average	456	0.0%
Ministry of Culture	484	+6.14%
PE "Water Supply and Sewage" - Skopje	531	+16.45%
Standardization Institute of the Republic of Macedonia	590	+29.39%
Parliament of the Republic of Macedonia	610[1]	+33.77%

[1] This price is calculated as the average price from the five translation agencies with whom the Parliament of the Republic of Macedonian signed framework agreements for the year 2011 (two agencies charge 531 MKD per translated page, while the remaining three charge 567 MKD, 608 MKD and 814 MKD, respectively).

The Index of Rationality for written translation was developed on the basis of information obtained by means of FOI applications submitted to all contracting authorities that contracted such services in 2011 by implementing public procurements and that were recorded in the EPPS. From the total number of 10 institutions addressed with these applications only the Ministry of Defence did not provide a response thereto, whereas the Public Broadcasting Service "Macedonian Radio and Television" informed that it benefits from translation services calculated per minute and not from written translation per page. The Bureau for Development of Education responded that it did not contracted translation services from Macedonian into English language. Thus, the Index is comprised of 7 institutions. It was developed on the basis of price paid per translated page (defined as 1,800 characters without spaces) from Macedonian into English language.

As it can be noted, there are significant differences in terms of procurement prices paid by the institutions. The lowest price is by 50% lower than the average price calculated and the highest price is by one-third (33.77%) higher than the average price.

The average price of 456 MKD paid per translated page or 1,800 characters without spaces and calculated under this Index pertains to the group of prices higher than the service's market price. Moreover, three contracting authorities paid a price lower than the average, while four contracting authorities signed contracts with individual prices that are higher than the average price calculated for the monitoring-targeted institutions.

Great differences in price paid cannot be explained with the type of public procurement procedure applied, especially if taking into consideration that open procurement procedures with previously announced call for bids imply greater transparency and competition, which ultimately leads to lower prices. Namely, two contracting authorities (Institute for Sociological, Political and Juridical Research and Joint Stock Company for Construction and Management of Residential and Business Premises) attained prices lower than the average by implementing bid-collection procedure without previously announced call for bids, while the remaining contracting authorities applied procedures with previously announced call for bids. Moreover, the simplified bid-collection procedure with previously announced call for bids was applied by the Pension and Disability Insurance Fund of the Republic of Macedonia, the PE "Water Supply and Sewage" – Skopje and the Standardization Institute of the Republic of Macedonia, whereas the Ministry of Culture and the Parliament of the Republic of Macedonia announced calls on public procurement contract awarding. Having this in mind, inevitable is the conclusion that the type of procurement procedure applied did not affect the price outcome as given in this Index.

As regards the selection criteria for the most favourable bid, six of the seven contracting authorities used the "lowest price" criterion. The Standardization Institute used the selection criterion "economically most favourable bid" which included the following elements: recommendations for previously contracted translation services in standardization-related projects were allocated 40 points, recommendations for previous translations performed were allocated 30 points; price was allocated 20 points and number of source pages translated per day was allocated 10 points.

The "lowest price" criterion was used also by the PDIF and the Parliament, but the differences in price attained are represented with the ratio 1:2.67. However, the relevant procurement procedures applied by these two contracting authorities differ as well, notably in regard to utilizing e-auctions. In the procurement of translation services the PDIF used e-auctions, which the Parliament of the Republic of Macedonia did not anticipate. E-auctions provide an additional opportunity to reduce the initial prices bided and recorded during the opening of bids. The Standardization Institute is the second institution from the seven contracting authorities targeted by this Index which used

e-auctions. However the use thereof could not have significantly affected price reduction considering the fact that this institution has allocated only 20 points to the price element in the selection criteria for the most favourable bid, whereas the remaining 80 points were allocated to the translation agency's previous performance.

The comparison of prices paid by contracting authorities for translation from Macedonian into English language and the values of translation contracts signed indicates that one cannot identify any economic logic behind them. Namely, the contracting authorities that attained prices lower than the average signed translation contracts in the value of 285,000 to 295,000 MKD, whereas the Parliament of the Republic of Macedonia, as one of the biggest individual contracting authorities for translation services whose annual contract was estimated in the value of 2 million MKD, will pay the highest price according this rank. The group of contracting authorities that pay prices higher than the average includes also the Ministry of Culture, whose translation service contract (written translation and consecutive interpretation) is the biggest according to its value, notably because it is a three-year contract signed for the period 2009-2011.

Table2: Value of translation contracts signed

CONTRACTING AUTHORITY	CONTRACT'S VALUE IN MKD	DIFFERENCE AGAINST THE AVERAGE PRICE
Pension and Disability Insurance Fund of the Republic of Macedonia	295,000	-50.00%
Institute for Sociological, Political and Juridical Research	285,000	-34.21%
Joint Stock Company for Construction and Management of Residential and Business Premises	295,000	-1.54%
Ministry of Culture (contract for the period 2009-2011)	7,950,000	+6.14%
PE "Water Supply and Sewage" - Skopje	1,180,000	+16.45%
Standardization Institute of the Republic of Macedonia	/	+29.39%
Parliament of the Republic of Macedonia	2,000,000	+33.77%

2.2 INDEX OF RATIONALITY FOR AIR-CONDITIONERS

Under the Index of Rationality for procurement of 3.5 KW air-conditioners, the ratio between the lowest and highest price is 1:1.90, which means that the highest price is by 90% higher than the lowest price. Such significant differences in price cannot be explained by the type of public procurement procedure applied, where dominant is the use of bid-collection procedures without previously announced call for bids, or by the quantity purchased. Therefore, obvious is that certain subjective factors had played a significant role in the contracting authorities' decision on the three companies that will be asked to submit their bids for the procurement of air-conditioners.

CONTRACTING AUTHORITY	PRICE IN MKD (VAT INCLUDED)	DIFFERENCE AGAINST THE AVERAGE
National Bank of the Republic of Macedonia	11,682	-29.78%
Attorney General	12,300	-26.06%
Faculty of Pharmacy - Skopje	13,899	-16.45%
Public Broadcasting Service "Macedonian Radio and Television"	14,475	-12.99%
Municipality of Centar	14,750	-11.34%
Municipality of Sveti Nikole	15,000	-9.83%
Municipality of Aerodrom	16,520	-0.70%
PE "Macedonian Railways – Infrastructure"	16,632	-0.02,%
Average	16,636	0.0%
Health Insurance Fund of the Republic of Macedonia	18,774	+12.85%
Municipality of Vasilevo	21,590	+29.78%
Municipality of Gorce Petrov	21,830	+31.22%
Municipality of Stip	22,184	+33.35%

Table 3:
Index of Rationality for Air-Conditioners
(price per 3.5 KW air-conditioner)

For the purpose of developing the Index of Rationality for air-conditioners, we addressed 23 contracting authorities with FOI applications, whose selection was made on the basis of public procurement calls announced in the course of 2011, or data submitted on so-called small procurements performed in the second half of 2010 or the first half of 2011. Majority of responses (received by 12 institutions) obtained to the 23 FOI applications indicated that the procurement procedures concerned air-conditioners with capacity of 3.5 KW. Six contracting authorities responded that they procured air-conditioners with capacity lower or higher than 3.5 KW, those being: the Central Register, Public Municipal Institution "Sue Ryder Hospice" in Bitola, Municipality of Tetovo, Municipality of Dojran and Public

Utility Enterprise "Pazari" Prilep. M-NAV (Civil Aviation Agency) – Skopje responded that it is not considered holder of public information, while the National Hydrometeorological Institute, the Ministry of Labour and Social Policy, the Municipality of Struga, the Public Enterprise "Macedonian Road" – Skopje and the Ministry of Defence did not respond to the FOI applications submitted. Hence, the Index is developed on the basis of prices attained by 12 national and local level institutions for procurement of 3.5 KW air-conditioners.

The average price attained by institutions is 16,636 MKD for procurement of one air-conditioner. Eight institutions purchased the air-conditioners at prices lower than the average price and four institutions purchased them at prices higher than the average price. Under the Index of Rationality for air-conditioners, the lowest price attained is by 29.78% lower than the average and the highest price is by one-third, i.e., by 33.35% higher than the average price.

The noted differences in price at which air-conditioners were purchased cannot be explained with the type of public procurement procedure applied. Notably, ten of the twelve contracting authorities included in the Index purchased the air-conditioners by means of bid-collection procedure without previously announced call for bids. Only the Public Broadcasting Service "Macedonian Radio and Television" and the Health Insurance Fund of the Republic of Macedonia applied open procurement procedures with previously announced call for bids. Despite the open procurement procedures applied, the Public Broadcasting Service "Macedonian Radio and Television" is the fourth-ranked institution according to the price attained, while the Health Insurance Fund of the Republic of Macedonia attained a price higher that the average.

Moreover, differences in price cannot be justified with the quantity purchased. In that, the National Bank, which attained the lowest price, purchased only 2 air-conditioners with 3.5 KW heating and cooling capacity and is the smallest quantity, as shown in the table below. The fact that prices of air-conditioners purchased are not counter-proportionate to the quantity as implied by basic economic logic is demonstrated also in the example of the Health Insurance Fund of the Republic of Macedonia.

CONTRACTING AUTHORITY	QUANTITY PURCHASED	DIFFERENCE AGAINST THE AVERAGE PRICE
National Bank of the Republic of Macedonia	2	-29.78%
Attorney General	5	-26.06%
Faculty of Pharmacy - Skopje	16	-16.45%
Public Broadcasting Service "Macedonian Radio and Television"	33	-12.99%
Municipality of Centar	3	-11.34%
Municipality of Sveti Nikole	2	-9.83%
Municipality of Aerodrom	4	-0.70%
PE "Macedonian Railways – Infrastructure"	12	-0.02%
Health Insurance Fund of the Republic of Macedonia	28	+12.85%
Municipality of Vasilevo	2	+29.78%
Municipality of Gorce Petrov	4	+31.22%
Municipality of Stip	7	+33.35%

Table 4: Quantity of air-conditioners purchased

2.3 INDEX OF RATIONALITY FOR PRIVATE SECURITY SERVICES

The procurement of private security services demonstrated significant differences in price paid by the contracting authorities for 1 hour service. The lowest and highest price ratio is 1:5, i.e., the highest price attained is by 400% higher than the lowest price. Differences in price can only be partially explained with the number of contracted personnel, as well as the type of public procurement procedure applied.

Table 5:
Index of Rationality for Private Security Services
(price per 1 hour service)

CONTRACTING AUTHORITY	PRICE IN MKD (VAT INCLUDED)	DIFFERENCE AGAINST THE AVERAGE
PHF Clinical Hospital "Trifun Panovski" Bitola	39,3	-68.31%
Municipal Public Kindergarten "Astibo" - Stip	50	-59.68%
Cultural Heritage Protection Office on behalf of the Museum on Water	114,5	-7.66%
PHF General Hospital Kavadarci	115	-7.26%
Public Communal Enterprise "Derven" Veles	115,6	-6.77%
PHF University's Surgical Clinic "St. Naum Ohridski" - Skopje	120,3	-2.98%
Faculty of Veterinary Medicine - Skopje	124	0.0%
Average	124	0.0%
PHF Psychiatric Hospital - Skopje	130	+4.84%
National Institute "Memorial House for Mother Teresa"	142	+14.52%
PHF Institute for Physical Medicine and Rehabilitation - Skopje	159,7	+28.79%
JSC Macedonian Power Plants (security services needed for the Headquarters)	180,4	+45.48%
Municipality of Vevcani	196,7	+58.63%

For the purpose of developing the Index of Rationality for private security services, FOI applications were submitted to all contracting parties that had announced relevant calls for bids in the course of 2011. It is a matter of 23 national and local level institutions. With the exception of Primary School "Dame Gruev" – Gradsko, the Museum of the Macedonian Fight for Statehood and Independence and the Municipality of Struga, the remaining 20 institutions responded to the FOI applications submitted. Although they duly responded to the FOI applications, eight contracting authorities were exempted from the Index because of the different methodology applied to calculate service costs. Actually, data disclosed by these institutions prevented the calculation of the price per 1 hour of private security

service. They include: Municipality of Novaci, Public Broadcasting Service "Macedonian Radio and Television", PHF General Hospital Strumica, Real Estate Cadastre Agency, University "Ss. Cyril and Methodius", PHF Health Care Centre "Zelezara" – Skopje, PHF Gerontology Institute "13 Noemvri" – Skopje, Health Insurance Fund of the Republic of Macedonia. Therefore, the present Index of Rationality includes only 12 contracting authorities. The Index is developed on the basis of comparing prices per 1 hour of private security attained by 12 contracting authorities.

The lowest and highest price ratio under this Index is a high 1:5, which undoubtedly represents an enormous difference in prices attained and is thereby indicative of market distortions as regards this type of services. As shown in the table below, the average price calculated under the Index of Rationality for private security services is 124 MKD. Seven institutions pay prices lower than the average and five institutions pay prices higher than the average price. The lowest price attained by the PHF Clinical Hospital "Trifun Panovski" - Bitola is by 68.31% lower than the average, and the highest price is by 58.63% higher than the average price.

Significant differences in price for procurement of these services can only be partially explained with the number of personnel contracted and the value of contracts signed. Namely, the value of the contract signed by the institution that attained the lowest price is 715,116 MKD, while the contracting authority that paid the highest price for this service signed an annual contract in the value of 154,000 MKD. Nevertheless, as given in the table below that provides an overview of contract values, obvious is that certain institutions whose individual contracts are among the highest in value have not attained the lowest price, while some of them are ranked in the group of institutions that attained prices higher than the average.

Table 6:
Value of private security contracts

CONTRACTING AUTHORITY	CONTRACT'S VALUE	DIFFERENCE AGAINST THE AVERAGE PRICE
PHF Clinical Hospital "Trifun Panovski" Bitola	715,116	-68.31%
Municipal Public Kindergarten "Astibo" - Stip	300,000	-59.68%
Cultural Heritage Protection Office on behalf of the Museum on Water	4,010,678	-7.66%
PHF General Hospital Kavadarci	/	-7.26%
Public Communal Enterprise "Derven" Veles	1,000,000	-6.77%
PHF University's Surgical Clinic "St. Naum Ohridski" - Skopje	351,168	-2.98%
Faculty of Veterinary Medicine - Skopje	1,416,000	0.0%
PHF Psychiatric Hospital Skopje	1,121,472	+4.84%
National Institution "Memorial House for Mother Teresa"	1,040,400	+14.52%
PHF Health Care Institute for Physical Medicine and Rehabilitation - Skopje	389,664	+28.79%
JSC Macedonian Power Plants (for the private security needs at the Headquarters)	4,916,352	+45.48%
Municipality of Vevcani	154,000	+58.63%

As regards the type of public procurement procedure applied, three institutions implemented open procedures for contract-awarding (PHF Clinical Hospital "Trifun Panovski" Bitola, Cultural Heritage Protection Office on behalf of the Museum on Water in Ohrid, and JSC Macedonian Power Plants for the needs of the Headquarters). The bid-collection procedure without previously announced call for bids was applied by two contracting authorities (Municipal Public Kindergarten "Astibo" - Stip and Municipality of Vevcani), whereas the remaining Index-targeted institutions (PHF General Hospital - Kavadarci, Public Communal Enterprise "Derven" - Veles, PHF University's Surgical Clinic "St. Naum Ohridski" – Skopje,

Faculty of Veterinary Medicine - Skopje, PHF Psychiatric Hospital - Skopje, National Institution "Memorial House for Mother Teresa", PHF Health Care Institute for Physical Medicine and Rehabilitation – Skopje) implemented bid-collection procedures with previously announced call for bids. Analysis of procedures applied and prices attained provides the conclusion that the type of procurement procedure applied does not per se guarantee attainment of approximately same prices when contracting private security services. However, an in-depth analysis of the manner in which procedures were implemented and the selection criteria used for the most favourable bid indicates that the lowest price for this service was attained under an open procedure with "lowest price" as the selection criterion, whose final stage included e-auctions. The highest price was attained under a bid-collection procedure without previously announced call for bids. At the same time, the fact that selection criteria used for most favourable bid can affect the price is demonstrated with the examples of JSC Macedonian Power Plants and PHF Health Care Institute for Physical Medicine and Rehabilitation – Skopje. In the case of JSC Macedonian Power Plants, the most favourable bid was selected according to the "economically most favourable bid" criterion, where the "price" element was allocated up to 60 points, 20 points - to the number of certified personnel and 20 points - to the number of employees exceeding the stipulated minimum. The Institute for Physical Medicine and Rehabilitation – Skopje used the "economically most favourable bid" criterion with the following elements: price – up to 70 points and quality – up to 30 points.

2.4 INDEX OF RATIONALITY FOR NOTEBOOK COMPUTERS

For the purpose of developing this Index, we submitted FOI applications to the contracting authorities that purchased notebook computers in the period 2010/2011, and were registered in the Electronic Public Procurement System. 24 FOI applications were submitted. 16 institutions responded thereto, while 8 institutions did not submit their responses, those being: Municipality of Karpos, Public Broadcasting Service "Macedonian Radio and Television", Agency for Foreign Investments, Faculty of Veterinary Medicine – Skopje, National Hydrometeorological Institute, Secretariat for Implementation of the Ohrid Framework Agreement and the Civil Aviation Agency.

The development of this Index has proven to be exceptionally difficult, notably considering the great differences in processors, graphic cards and RAM memories of notebook computers purchased. From the 24 institutions addressed with information requests on prices paid per notebook computer and the 16 responses obtained, only 10 institutions presented us with information that are conductive to comparison-making. In order to reduce differences between notebook computer types and thus calculate the differences in price for procurement of similar products, the Index of Rationality for notebook computers was developed for two types thereof. The distinction was made on the basis of computer's processor as a key price factor. Therefore, the institutions were divided into two groups: institutions that purchased notebook computers with Intel Core i3 processor and institutions that purchased notebook computers with Intel Core i5 processor.

Although the contracting authorities were requested to provide information on prices per notebook computer without the software installed, not all of them were able to provide these data due to the fact that the vendors had not indicated the software price in their bids and invoices. Consequently, the Index of Rationality for notebook computers with Intel Core i5 processor is based on comparison of prices without software, whereby the software price was deducted from the price disclosed by one institution (PHF City Hospital

"8-mi Septemvi" – Skopje). However, considering that all institutions included in the Index of Rationality for notebook computers with Intel Core i3 processor disclosed the relevant prices with software included, this Index had to be developed on the basis of comparison of prices with software included.

2.4.1 Index of Rationality for Notebook Computers with Intel Core i3 Processor

The lowest and highest price ratio for procurement of notebook computers with Intel Core i3 processor is 1:1.98, i.e., the highest price is by 98% higher than the lowest price attained. In that and contrary to all expectations, the highest price under this Index was attained by means of an open procurement procedure which included e-auctions. The quantity purchased did not affect prices attained, as shown in the table below, notably because the institutions that obtained the highest and the lowest price purchased similar quantities.[2]

Table 7: Index of Rationality for Notebook Computers with Intel Core i3 Processor (price per 1 notebook computers with software included)

CONTRACTING AUTHORITY	PRICE IN MKD (5% VAT INCLUDED)	DIFFERENCE AGAINST THE AVERAGE
Agency for Foreign Investments and Export Promotion of the Republic of Macedonia	24,413[2]	-26.54%
Faculty of Civil Engineering - Skopje	27,903	-16.04%
Broadcasting Council of the Republic of Macedonia	31,342	-6.03%
Average	33,232	0
State Statistical Office	34,049	+2.46%
Health Care Centre Skopje	48,453	+45.80%

As shown in the Index, the differences in price are significant, whereby the lowest price is by 26.54% lower than the average and the highest price is by 48.5% higher than the average price calculated.

As noted in the conclusion for this Index, the prices do not correspond with standard expectations related to procedures applied, notably because the lowest price was attained under a bid-collection procedure without previously announced call for bids. Nevertheless, it should be noted that the Agency for Foreign Investments and Export Promotion of the Republic of Macedonia purchased the computers with Windows Home Basic OS installed, which is cheaper than Windows Professional 7 OS as installed on the notebook computers

[2] The notebook computers have Windows Home Basic OS installed, which is cheaper than Windows Professional 7 OS which was installed in the notebook computers purchased by the other institutions.

purchased by the other institutions included in this Index. At the same time, the institution that purchased the computers at the highest price applied an open procedure for contract-awarding, whose final stage implied e-auctions. Open procedures, however without e-auctions, were implemented also by the Faculty of Civil Engineering – Skopje and the State Statistical Office, where the notebook computers were purchased as a separate lot in the procurement of IT equipment. The Broadcasting Council organized a bid-collection procedure with previously announced call for bids.

As regards the selection criteria for the most favourable bid, the Faculty of Civil Engineering – Skopje and the State Statistical Office used the "lowest price" as the selection criterion. The criterion "economically most favourable bid" was used by the Broadcasting Council, and it was comprised of the following elements: price – up to 80 points and warranty period – up to 20 points. The same criterion was used also by the Heath Care Centre – Skopje, where price was allocated up to 90 points and quality – up to 10 points. It can be concluded that the selection criteria were of no crucial significance as regards the decision on the most favourable bid.

The quantity purchased did not affect the prices attained, as shown in the table below. Namely, the institutions that attained the highest and the lowest price purchased similar quantities. At the same time, the group of institutions that paid prices higher than the average includes the contracting authority that purchased the greatest quantity of notebook computers, which was a separate lot in the even bigger procurement of IT equipment.

CONTRACTING AUTHORITY	QUANTITY PURCHASED	DIFFERENCE AGAINST THE AVERAGE PRICE
Agency for Foreign Investments and Export Promotion of the Republic of Macedonia	6	-26.54%
Faculty of Civil Engineering - Skopje	14	-16.04%
Broadcasting Council of the Republic of Macedonia	15	-6.03%
State Statistical Office	27	+2.46%
Health Care Centre - Skopje	5	+45.80%

Table 8: Quantity of notebook computers with Intel Core i3 processor purchased

2.4.2 Index of Rationality for Notebook Computers with Intel Core i5 Processor

The index of Rationality for notebook computers with Intel Core i5 processor shows that the quantity purchased, type of procurement procedure applied and use of e-auctions affected the prices attained. Nevertheless, the differences in price are so high that the price deviations cannot be justified with any economic logic or cost-effectiveness in public spending. The lowest and highest price ratio is 1:2.1, i.e. the price paid for the most expensive notebook computer is by 101% higher than the lowest price.

Table 9:
Index of Rationality for Notebook Computers with Intel Core i5 Processor
(price per notebook computer without software)

CONTRACTING AUTHORITY	PRICE IN MKD (5% VAT INCLUDED)	DIFFERENCE AGAINST THE AVERAGE
University of Information Science and Technology – Ohrid	28,361	-29.10%
PHF City General Hospital "8-mi Septemvi" – Skopje[3]	31,370	-21.56%
Average	39,994	0
Protection and Rescue Directorate	39,995	0
Public Communal Enterprise "Derven" - Veles	40,990	+2.49%
University "St. Clement of Ohrid" - Bitola[4]	59,253	+48.15%

The prices at the Index' extremes are attained by education institutions, i.e., the University of Information Science and Technology – Ohrid and University "St. Clement of Ohrid" – Bitola. However, the difference lays in the fact that even though it is a matter of computers with same processors, the University in Bitola purchased the so-called "EliteBook" with more powerful Nvidia 250 G graphic card. The reason that we still pursued comparison of these computers despite the above indicated difference is the fact that the concerned contracting authorities are state institutions, i.e., education institutions, which, on one hand, should enable professors and students equal working and studying conditions, but - on the other hand - should never disregard the principle of rationality in public procurements.

In addition to the graphic card, the notebook computers purchased by the two universities also differed in terms of quantity. As shown in the table below, the lowest price was attained in the procurement procedure that implied the largest quantity thereof.

[3] In order to enable comparison against other institutions, 7,813 MKD (as the lowest price attained for procurement of this type of software) were deducted from the price of notebook computers with licenced Windows 7 Professional OS (39,183 MKD).

[4] EliteBook with powerful Nvidia 250 G graphic card

CONTRACTING AUTHORITY	QUANTITY PURCHASED	DIFFERENCE AGAINST THE AVERAGE PRICE
University of Information Science and Technology - Ohrid	200	-29.10%
PHF City General Hospital "8-mi Septemvi" – Skopje	3	-21.56%
Protection and Rescue Directorate	10	0
Public Communal Enterprise "Derven" - Veles	4	+2.49%
University "St. Clement of Ohrid" - Bitola	4	+48.15%

Table 10: Quantity of notebook computers with Intel Core i5 processor purchased

Here, it seems that the type of procurement procedure applied provide logical explanation for the matters at hand. The lowest price was attained under an open procedure that used the "lowest price" criterion for selection of the most favourable bid and concluded with e-auctions that have led to additional reduction of prices. The situation is similar in regard to the second-ranked lowest price attained by PHF City General Hospital "8-mi Septemvi" – Skopje, where considering the smaller quantity, the notebook computers were purchased as part of the IT equipment procurement, whose final stage included e-auctions that have led to additional reduction of prices bided. The institutions ranked below, i.e., Protection and Rescue Directorate and Public Communal Enterprise "Derven" - Veles applied bid-collection procedure with previously announced call for bids. The highest price for notebook computers was attained under a bid-collection procedure, but without previously announced call for bids. As regards the selection criterion for the most favourable bid, four of the five institutions used the "lowest price" as selection criterion. Only the Protection and Rescue Directorate used "economically most favourable bid" as the selection criterion, comprised of the following elements: price – up to 80 points, quality – up to 10 points, and delivery deadline – up to 10 points.

2.5 INDEX OF RATIONALITY FOR GPS VEHICLE DEVICES

The highest price attained under this Index is by 158% higher than the lowest price, and thus the lowest and highest price ratio is 1: 2.58. The Index shows that prices attained for this procurement type are particularly liable to the quantity being purchased, but not to the type of public procurement procedure applied.

Table 11: Index of Rationality for GPS Devices (price per 1 GPS device and installation thereof)

CONTRACTING AUTHORITY	PRICE IN MKD (VAT INCLUDED)	DIFFERENCE AGAINST THE AVERAGE
Macedonian Postal Service (in 2010) [5]	14,635	-33.11%
Municipality of Stip (in 2010)	17,051	-22.06%
PE "Ohridski komunalec" – Ohrid (in 2010)	17,818	-18.56%
Customs Administration (in 2008)	18,587	-15.04%
Protection and Rescue Directorate (in 2010)	21,853	-0.11%
Average	21,878	0,0%
PE "Water Supply and Sewage" – Skopje (in 2008)	23,482	+7.33%
PE "Communal Hygiene" (in 2009)	23,789	+8.73%
PTE Skopje (in 2009)	37,807	+72.81%

Procurement of GPS vehicle devices became particularly common in the course of 2011; however, the public procurement procedures were often concluded in tender annulments. In order to provide a comprehensive overview of this procurement type, we analysed procurement procedures for GPS devices implemented in the period 2008-2011. Adequate FOI applications were submitted to 14 contracting authorities. Responses were not obtained from the Department on General and Common Matters, which made several announcements that it will respond to the FOI application, but did not follow through. This was also the case with Public Communal Enterprise "Water Supply and Sewage" – Prilep. FOI responses obtained from the contracting authorities PE "Macedonian Forests" and the Agency for Financial Support of Agriculture and Rural Development indicated that these contracting authorities did not install GPS devices on their vehicles, but have rather procured manual devices used only for field work. The Real Estate Cadastre Agency responded that their GPS devices are not intended for vehicles, but are rather used to determine urban trigonometric networks. AD MEPSO (Macedonian Electricity Transmission System Operator) submitted its response indicating that it did not implement any new public procurement procedures for GPS devices following the tender's annulment in 2010. Hence, the Index of Rationality for GPS devices includes only 8 institutions. [5]

The analysis of this Index shows that the average price of 21,878 MKD per GPS device is by 33% higher than the lowest price attained. Evidence in support of fluctuating prices bided under different procurement procedures is identified in the fact that the highest price attained is by 72.81% higher than the average price calculated. In that, five contracting authorities attained prices lower than the average which was based on individual prices

[5] The year when the public procurement procedure was implemented.

attained, whereas three contracting authorities purchased GPS devices at prices higher than the average.

As given in the Index, prices are marked by a slight reduction in the course of time, which is also directly related to the quantity purchased.

Notably, institutions that purchased greater quantities were able to attain lower prices. However, the differences in price are so high that one cannot find any justification as to the cost-effectiveness behind the lowest and highest price ratio of 1:2.58. Thus, the Protection and Rescue Directorate purchased greater quantity of GPS devices at a price higher than the one attained by the Municipality of Stip and PE "Ohridski komunalec" whose quantities purchased, as well as prices attained are by 28.2%, i.e., 22.65% lower, respectively. At the same time, economic justification defined as quantity purchased cannot be applied in regard to prices attained for GPS devices by PE "Communal Hygiene" and PTE Skopje, whose relevant procurement procedures were implemented in the same year, but whose prices attained differ by as high as 59%.

Table 12: Quantity of GPS devices purchased

CONTRACTING AUTHORITY	NUMBER OF DEVICES PURCHASED	DIFFERENCE AGAINST THE AVERAGE PRICE
Macedonian Postal Service	150	-33.11%
Municipality of Stip	6	-22.06%
PE "Ohridski komunalec"	12	-18.56%
Customs Administration	130	-15.04%
Protection and Rescue Directorate	30	-0.11%
PE "Water Supply and Sewage" – Skopje	100	+7.33%
PE "Communal Hygiene"	15	+8.73%
PTE Skopje	30	+72.81%

Considering the fact that the highest and lowest price included in the Index were attained on open procurement procedures, inevitable is the conclusion that the type of procurement procedure applied did not affect prices attained. This interpretation is additionally enhanced with information that the only two institutions that implemented bid-collection procedures without previously announced call for bids – Municipality of Stip and PE "Ohridski komunalec" – managed to procure these devices at prices that are relatively lower than the average price.

Serious differences that would explain the differences in price attained could not be found also in terms of selection criteria for the most favourable bid. Probably the most contradicting situation was noted in regard to the single institution that used only the "lowest price" criterion – PE "Communal Hygiene" Skopje, which attained one of the highest prices included in the Index. All other institutions that applied the open procedure on contract-awarding (Macedonian Postal Service, Customs Administration, PE "Water Supply and Sewage" and PTE Skopje) used "economically most favourable bid" as the selection criterion. Macedonian Postal Service applied the following elements: price (50

points) and quality (50 points). Customs Administration allocated 45 points to price, 30 points to quality, 15 points to warranty period and 10 points to response deadline in cases of system upgrading and maintenance.

When selecting the most favourable bid, the PE "Water Supply and Sewage" – Skopje allocated 50 points to price, 40 to quality, 5 to manufacturer's warranty period and 5 points to post-warranty period. Finally, PTE Skopje pursued the following point-ranking of elements included in the selection criterion for the most favourable bid: price - up to 60 points, quality – up to 25 points, manufacturer's warranty period – up to 10 points and post-warranty service – up to 5 points. Quality and warranty period point-ranking was also noted in the public procurement implemented by the Protection and Rescue Directorate, which applied a bid-selection procurement procedure with previously announced call for bids (price was allocated up to 60 points, quality – up to 20 points, and warranty period – up to 20 points).

As noted above, all institutions have allocated a significant number of points to "quality" and "warranty period" elements, which leads to the conclusion that the selection criteria used did not affect the prices attained.

3 GENERAL CONCLUSION

Knowing that the Index of Rationality's purpose is to detect possible differences in procurement price attained for various goods and services, the first and most important conclusion inferred is that differences in price attained are extremely high and in most cases raise concerns as to the cost-effectiveness of public spending. The ratio between the lowest and highest price attained per individual commodity is as follows:

- 1:2.67 for translation services, i.e., the highest price is by 167% higher than the lowest price;
- 1:1.90 for air-conditioners, i.e., the highest price is by 90% higher than the lowest price;
- 1:5 for private security services, i.e., the highest price is by as high as 400% higher than the lowest price;
- 1:1.98 for notebook computers with Intel Core i3 processor and 1:2.1 for notebook computers with Intel Core i5 processor, i.e., the highest prices are by 98% and 101% higher than the lowest prices, respectively;
- 1: 2.58 for GPS vehicle devices, i.e., the highest price is by 158% higher than the lowest price.

Such differences in price attained cannot be justified, in particular knowing that public procurements were implemented by institutions that are funded from the same source: the Budget of the Republic of Macedonia, which is sustained by tax-payers.

Most distressing is the fact that for most part identified differences in price attained by institutions for procurement of same products or services cannot be justified with the type of procurement procedure applied, the selection criteria used for the most favourable bid or the quantity purchased. Hence, as was the case with the previous Indices of Rationality, the conclusion is reached that the Index developed for this group of products and services is contrary to the generally accepted logic based on the following principles:

- prices should decrease according to the type of procurement procedures applied, where the open procurement procedures should encourage competition, notably in regard to bidding lower prices;

- use of "lowest price" element in the selection criterion for the most favourable bid should result in lower prices compared to procedures where the selection criterion is defined as the economically most favourable bid;
- quantity purchased should be counter-proportionate to prices, whereby procurement of greater quantity implies lower prices.
- The situation, as noted above, raises doubts that public procurement procedures may have included other factors that affected prices attained.

On the other side, positive is the fact that the Index developed for this group of products (air-conditioners, notebook computers, and GPS devices) and services (written translation and private security services) indicated that in most cases the use of e-auctions did result in significantly lower prices.

Given the contracting authorities' legal obligation to duly respond to FOI applications, unclear remains why a significant share thereof – despite being addressed with FOI applications – did not disclose information requested and related to prices at which they purchased particular products and services. The Ministry of Defence did not disclose information on prices paid for translation services and air-conditioners purchased. The Municipality of Struga did not disclose information on prices paid for air-conditioners purchased and private security services contracted. The National Hydrometeorological Institute, the Ministry of Labour and Social Policy, PE "Macedonia Road" – Skopje did not disclose information on prices paid for air-conditioners purchased. Primary School "Dame Gruev" – Gradsko, National Institute "Museum of the Macedonian Fight for Statehood and Independence" did not disclose information on prices paid for private security services contracted. The Municipality of Karpos, Public Broadcasting Service "Macedonian Radio and Television", the Agency for Foreign Investments, the Faculty of Veterinary Medicine – Skopje, the National Hydrometeorological Institute, PE "Communal Hygiene", the Secretariat for Implementation of the Framework Agreement and the Civil Aviation Agency did not disclose information on prices paid for notebook computers purchased. The Department for General and Common Matters and PE "Water Supply and Sewage" – Prilep did not respond to the FOI application on prices paid for GPS vehicle devices purchased.

Thus, inevitable is the question whether some of these institutions refrained from information disclosure due to objective reasons or maybe the reason for such ignorant attitude towards their legal obligation should be sought in the attempt to conceal prices and the lack of accountability as regards the manner in which public funds are spent. The Index developed for this group of products and services did not resolve the long-standing dilemma whether differences in price would have been even greater if the above-indicated contracting authorities disclosed the public information requested.

Having in mind the above indicated, it should be noted that national and local level contracting authorities must make serious efforts to improve the rationality (cost-effectiveness) in public spending. Hence, the following recommendations:

- to use, as much as possible, data related to prices attained on the market;
- to create fair terms and conditions for competition among companies, with a view to obtain the best value for the money (appropriate quality under lower prices);
- to adherently enforce the legal obligation that anticipates completion of public procurements with e-auctions;
- to refrain from practices whereby the contracting authorities believe that they have secured transparent and fair proceedings only because they had announced a call for public procurement, notably because the successful outcome of such procedures, to a large extent, depends on the application of eligibility criteria for bidding companies, as well as the quality of tender documents and technical specifications developed.