

PART III
LAW, TREATIES AND LEGISLATIVE FRAMEWORKS

MEASUREMENT OF PUBLIC PROCUREMENT SYSTEMS: NOVEL METHODS AND INSTRUMENTS APPLIED TO THE E.U. MEMBER STATES

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ABSTRACT. The paper illustrates a new method for measuring law and functioning of public procurement.

It aims at assessing the relationship between the compliance of national systems with EU rules and the quality of PP domestic market in terms of performance. The modernizing element introduced by EU rules favours both the opening of market and free competition and should generate a positive impact on market.

National systems are here analyzed and divided into specific indicator sets with values expressing the compliance with EU rules and their actual performance.

This method and the research tools allow performing essential management cockpit functions and provide basis for comparing different national systems.

Finally, the method offers comparative quality ratings of PP systems and also legal / procedural devices capable of: *i.* fostering positive results in terms of efficiency and effectiveness, *ii.* identifying legal / procedural devices that conversely lead to inefficiencies.

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1. CONTEXT, MOTIVATIONS AND OBJECTIVES

The system of public procurement in the EU member States – where authorities and public entities purchase both goods and services on the market – is characterized by the handling of huge economic resources (EC, 2011) as well as by the fact of being a privileged field for implementing EU regulations (Morbidelli, Zoppolato, 2007; Fracchia, 2010).

From the seventies of last century, EU action, both legislative and jurisprudential, has pursued the direct and indirect elimination of all the obstacles to a single market of public procurement and has favored the realization of a legal framework as homogeneous as possible. In this way, the Union aimed at guaranteeing all the operators of each Union State the possibility of competing at equal conditions in the award of public procurements in all the member States, without the obstacles of the *natural preference* (Monti, 2010) of local administrations for local firms. Consequently the European Union law fosters an international market of public procurements, both open and competitive, by way of: (a) the definition of the general principles of direct and immediate practical use; (b) the harmonization and the coordination of both the national award procedures and the protection instruments.

Nevertheless, the consequences of the process of europeanization (Benacchio, 2010; Sandulli, 2005) require not only a careful control of the correct transposition and enforcement of the new regulations into and by each State, but also, and mostly, a control of the consequences in terms of either better *performance* benefits or worse *performance* losses of the contract procurement systems.

In other words, the application of the European Union rules should be assessed also in relation to the economic consequences (but not only) brought about in the national procurement systems. In fact, the analysis of the EU rules efficacy cannot be limited to the sole assessment of transparency and discrimination between firms, because in this way other possible very important benefits for the EU

would be left aside; such EU benefits are considered as fundamental issues in the European procurement market (Mele, 2006). Hence the interest in the in-depth studies carried on, on this issue, by way of a multidisciplinary approach that offers new opportunities of analysis, in view of the significant contribution of computer technology (Cane, Kritzer, 2010). The decision of monitoring the normative evolution of the national procurement systems as well as of the performance of the ensuing markets can lead, when done with continuity, to significant results as regards the quality of rules and of public expenditure policies (Titomanlio, 2010; Fiorentino, 2010).

This is why public procurement represents a peculiar field of study and experimentation of new models and techniques of *law measurement*. In fact, *law measurement* is still characterized by uncertainties both methodological and general, as well as by the absence of measurement systems widely accepted and shared (Gambaro, 2012 e 2010; Cassese, Casini, 2012).

One can even speak of a research field still widely unexplored and only marginally reached either by the analyses carried out with approaches mostly mono-disciplinary or by experts and organizations that operate in limited sectors. Only contributions by economists, jurists and experts of statistics are available, while almost absent are the elaborations that associate the above-mentioned competences with the contributions provided by experts at labor law, criminologists, political scientists, sociologists, mathematicians, computer scientists etc.

In such a context, the researcher's attention is therefore shifted to the methods, the contents and the indicators with which the measurement has to be performed.

To this aim, the expertise acquired in the procedures of the so-called European Regulation Impact Assessment constitutes an essential reference point. After the early attempts in the 1990's, meant to assess the impact of the regulations and of the EU policies in the area of the small and medium-sized companies, the impact evaluation was inserted among the general objectives of the EU action (2001), thus becoming a *better regulation strategy* to be used systematically and not only in the preparatory phases of legislative (ex

ante) proposals, but also during the implementation (*in itinere*), and even *ex post* in order to verify the attainment of the estimated benefits.

Even with the uncertainties that still characterize the meaning and instruments of law measurement, the European RIA can be considered one of the best reference models to this day. This consideration stems not so much from the statements, often auto-referential, of the European Commission or of other European Institution, but from the model structure itself that is open to take into due consideration the economic, social and environmental effects of the regulations.

In the public procurement sector the *measurement* experiments carried out at the European level up to now, appear to be *RIA experiments* and are aimed at demonstrating the important benefits stemming from the E.U. Directives.

In other words, the actual aim of the European intervention, aiming at the opening of the national markets to the firms of all the other Member States, has not only conditioned the ways of measurement/assessment, but also the definition of the indicators that can actually demonstrate the positive evolution of: (a) *transparency of public procurements*; (b) *international circulation of companies*; (c) *purchasing conditions negotiated by public authorities*.

The trust in the Union's statements on the positive and beneficial effects of EU regulations is not at stake, but one needs to go further and put forward new tools for innovative and in-depth methods of analysis. Actually, the assesment carried out by the EU does not go further than what was stated above, so that that circumstance confirms once again that there is a need for both exhaustive and shared consolidated methods of measurements of:

1. the relations which exist, respectively, between the enforcement of the EU rules, the efficiency of the contracting actions of public purchasers and the functioning of the markets of public procurements;

2. the compliance of the national systems with the EU discipline of public procurement. In the Treaties, the conformity control of the internal rules is assigned to the Commission (art. 258 TFUE), which operates with results sometimes severe, but without employing objective methodologies, suitable frameworks and pre-defined modalities.

The above remarks must stimulate the elaboration of new models of measurement/assessment of public procurement rules and markets.

Furthermore, the same remarks are at the basis of the request, to which the project SVAP (Cozzio, 2011) aims at giving answer, i.e.: *“Is not it true that to either a stricter or a laxer compliance in the EU, with a rule system of public procurements (national, regional or provincial) corresponds either a greater or smaller performance capacity (in terms of efficiency and effectiveness, economic and other) of the public purchasers, and more in general of the related market?”*

Once again, the project does not leap to prejudicial conclusions on the effectiveness of EU rules, but it is meant to assess them, while elaborating new novel tools of analysis. Obviously, the absence and/or the poor reliability of the statistical data of the public procurement market is a weakness whose solution constitutes a necessary basis for researchers in order to enable them to apply any measuring exercise whatsoever.

Finally, it is clear that the assessment and the data singled out by the research can possibly be using in order to optimize public procurement functioning systems. The project method, indeed, produces quite a large number of information useful for the elaboration, both theoretical and practical, of a single system as well as for the comparison between various systems. For instance, let us consider that the comparison of the results of the measurement of various systems allows the configuration of *quality ratings* of the systems (related to the stricter or lesser compliance with the EU rules or to the better/worse performance), in this way leading to a desirable discovery of new improved solutions and to a greater general quality-enhancing ‘competition’.

2. STRUCTURE AND FUNCTIONING OF THE MEASUREMENT MODEL

Each scientific method ought to indicate both framework and conditions in order to be able to produce reliable results, objective and easy to compare. After this preliminary remark, it is not always either possible or convenient to refer to typical or already experienced methods of analysis, above all when the object of the analysis or the approach are wholly new. These considerations appear to be easily applied to the project SVAP, that is characterized as an empirical research based on the collection of evidence that can be measured through the legal and economic analysis.

The project was developed with only these guidelines in mind, because was not known any method of analysis, measurement and assessment of the public procurement systems corresponding to the requirements put forward. Consequently, as often happens in the field of empirical studies, the research was carried out without known instruments, on the basis of the aims to be reached, that were:

- i.* the measurement of the compliance of the national law with E.U. law;
- ii.* the measurement of the *performance* (in terms of efficiency and effectiveness, keeping also in mind the existence of temporal criteria and of the transnational opening of procedures etc.) of public procurement markets;
- iii.* the study of the relations existing between the above-mentioned measurements.

The objectives of the points *i.* and *ii.* were carried out by arranging *three sectors* of analysis regarding:

- a) first sector: the analysis of the *legal data* in view of the measurement/assessment of the compliance of a stated legal system of public procurement (both national and regional and of a county) with the EU rules;
- b) second sector: the analysis of the *economic data* in view of the measurement/assessment of the performance of the system in the phase of '*evidenza pubblica*' (from the start of the competition procedures up to the award);

c) third sector: the analysis of the *economic data* in view of the measurement/assessment of the performance of the system of public procurement in the *contract performance phase* (from the contract conclusion up to the end).

From within these three sectors, twenty-two *macro indicators* were singled out that were deemed a priority as regards the aims of the EU public procurement legislation. Of those *macro indicators*, six were used in the first sector and the other sixteen were used in the second and third sectors.

Besides, for each *macro indicator* were defined a number of *micro indicators* (all together over one hundred). These *micro indicators* constitute the smallest units of measurement used in the research.

The details of the research are dealt with further on, but here, as an example, we consider the fact that the *macro indicator* “award procedures” is composed of seventeen *micro indicators*, as follows: *open procedure, procedure open above the threshold, restricted procedure, procedure restricted above the threshold, competitive procedure with negotiation, negotiated procedures without prior publication, competitive dialogue, electronic auctions etc.*

As regards the relations between the compliance of the legal systems with the EU rules and the *performances* of the related markets (point *iii.* of the objectives), they are based on the elaboration and comparison of the results obtained through the measurements in the three sectors.

The project ‘machinery’, so far described, operates in a rather simple way by assigning each *micro indicator* a numerical value predetermined according to the results of the measurement. So, within the first sector value “1” is assigned to the situations of *legal compliance*, value “0” to those of *non-compliance*, and value “0.5” to the situations where are present both elements of compliance and of non-compliance, that is to say of situations of substantial *uncertainty*. Conversely, for the measurements in the second and third sectors value “1” is assigned to the indicator of the public procurement system that shows the best *performance* and value “0” to the worse *performance*.

In other words, the proposed process of analysis, does first 'split up' the public procurement system and then 'measures' it on the basis of some reference units (the *micro indicators*), and finally it sums up all the assigned values. In this way, the values assigned in the first sector become the arithmetic expression of the compliance of the analyzed system with the EU rules, while the sum of the values assigned in the second and third sectors represent the relative *performances*.

The matching of the results obtained in the three sectors and their comparison with other systems strengthens the successive conclusions, referred both to the general functioning of the systems, and, in more detail, to the technicalities that characterize them. For example, it can be found that a certain award procedure in system X, even if it guarantees compliance with the EU rules better than the same procedure controlled by system Y, it appears to fail in the end for the following reasons: larger amount of time spent on contract performance, and/or larger final costs, and/or number of litigations needlessly activated, etc. Moreover, a deeper analysis can even highlight legal or other elements that differentiate the functioning of the award procedures in the two systems by favoring that of the two that demonstrates less efficiency.

In the description of the project functioning, another aspect to consider is the exploitation of the technological applications that are the necessary tool for the completion the described analysis in a reasonable amount of time and with acceptable results.

In fact, each public contracting system claims the analysis of a large number of information and data (both legal and economic).

For instance, the Italian public procurement system is composed of legal rules, well beyond the thousand in number, that are ordered on various levels of formation according to the hierarchy of the sources. Then to the legal rules must be added also the thousands of other judicial decisions decided above all by the administrative judges in the two judgment levels (the Regional Administrative Courts and the Council of State). Besides, each year thousands of award procedures are activated that regard many awarding entities and economic operators.

Therefore, the choice of taking advantage of computer technology in order to analyze these systems appears to be essential and the researchers' doubt is to be cast aside that considers the use of this technology to be a way of slowing down the measurement and elaboration phases. On the contrary, computer technology enables the discovery of new contexts of investigation allowing the researchers to master a larger quantity of information and data in a much shorter time (Bresnahan, Trajtenberg, 1995).

This is why, within the research, the *software* of the project was developed.

3. THE MEASUREMENT OF LEGAL DATA

The project model foresees three sectors of analysis. The first, as already mentioned above, measures the compliance of the internal rules (be they national or regional or local) with the EU discipline. The assessments carried out in this analysis sector are of legal nature and are based on the following *macro indicators*:

(1) *the subjective framework for the application of the public procurement discipline*. This macro indicator is divided into two main areas regarding: *i. awarding administrations and subjects obliged to public evidence, ii. operators eligible for the stipulation of public contracts*;

(2) *the requirements for operators for taking part in the award procedures and in the awarding of public procurements*. Also this macro indicator is divided into two areas regarding: *i. requirements of general order, ii. requirements of the stand, reliability both economic-financial and technical-organizational*;

(3) *the award procedures*;

(4) *the selection method of tenders and pathologies*;

(5) *the publicity and transparency of the auction acts*;

(6) *the directions for the performance of contract*.

The above mentioned *macro indicators* form a body of eighty-eight *micro indicators*, to which correspond rules and institutes that make

up the most significant points of the EU discipline of public procurement. Through these *micro indicators* the project model builds up the compliance analysis of the systems.

The measurement of the legal data is made by applying the same instruments as the legal comparison. In fact, the practice of the *dissociation of formants*, according to the elaboration of comparative law doctrine (Sacco, 1980 e 1992), enables the spotting of the elements both legal and quasi-legal of the system and, consequently, the compliance legal analysis is more complete.

For these reasons we have based our measurement of the legal data on three pillars; in particular, for each *micro indicator* we refer to:

- *normative provisions* (legislative formant, first pillar). What is assessed is if, in correspondence with the *micro indicator*, the investigated rule either complies or does not comply with the EU rules, to whose outcome the related value/score is assigned (“1” compliance, “0” non-compliance, “0.5” uncertainty);
- to *judicial decisions* (judicial formant, the second pillar). Here we assess if the principles set up by the Court of Justice in relation to each *micro indicator* are being confirmed by the case law prevailing in the analyzed system. To the outcome of the investigation is assigned the related value/score (“1” compliance, “0” non-compliance, “0.5” uncertainty);
- to the *scholarly interpretations* (doctrinal formant, the third pillar). In this case, the analysis is not aimed at measuring compliance, but at verifying the possible existence of different orientations in the interpretation of each single *micro indicator*. Besides, the measuring of the doctrinal formant is opened to a number of doubts and essential questions, that suggest great caution in their use.

As an example, here is illustrated the functioning of the project model in the field related to the measurements of the legal data, by assuming – as *micro indicator* – the *tender award criteria*.

This *macro indicator* regards the phase of selection of tenders and precisely, the criteria for which the public purchaser decides the

selection of tenders within the award procedure. To this aim, there are two criteria: the lowest price criterion and the economically most advantageous tender criterion. It is up to the administration to decide which of the two must be chosen, in relation to the characteristics of the procurement to be awarded. The decision has significant practical consequences, given the fact that the economically most advantageous tender criterion, by opposing the automatism choice of the lowest price, assigns more importance and dynamicity to the competition phase. Moreover, the discretionary power that this criterion gives to the administration (in the selection of the parameters for the evaluation of the tenders) can bear negative effects above all when used to favor certain firms in a discriminatory way.

Indeed, all the attempts of the EU legislators (*first of all* of the Italian one) to limit the use of the economically most advantageous tender (in view of the risks of bad administration), have always met with a determined resistance in Europe both in the rules of the directives and in the decisions of the Court of Justice, that since the eighties has denied the EC compliance to those national norms that limited the administration's discretionary power.

Besides, at the instigation of the Community institutions, the administrations shifted from a list of four elements (price, aesthetic and technical value, performance term, usage and maintenance costs) for the selection of the economic most advantageous tender, to the possibility, for the administrations themselves, to establish other parameters, even of not strictly economic nature or not such as to attribute (to the administration) a compensation / a direct economic advantage (a circumstance that exists when, for instance, parameters of local or social relevance are used).

In conclusion, there are several elements of interest that in relation to this *macro indicator* become useful elements (that is to say *micro indicators*) in order to measure the compliance between national and EU rules.

Here the reference is, among others, to:

- the parameters for the assessment of tenders;

- the method of the assignment of the scores and/or discretionary values to the parameters;
- the discretionary power held by the assessment commission;
- the verification of the congruity of anomalous tenders.

Following the results of the measurements, to the individual *micro indicators* it is possible to assign the values (“1”, “0”, “0.5”).

The following figure 1 shows the results of the measurements tested on a normative system, while figure 2 shows the results referred to the measurements of two different systems.

Figure 1 - EU rules compliance measurement applied to the macro indicator *tender award criteria*

MACRO INDICATOR: TENDER AWARD CRITERIA		LEGISLATIVE FORMANT			
		E.U. RULES (DIR. 2004/18/CE)		SYSTEM "A" RULES (D.LGS. 163/2006)	
		References	Compl.	References	Compl.
MICRO INDICATORS	Lowest price	article 53, pt. 1, letter b		articles 81; 82; 86; 87; 88	0.50
	Most economically advantageous tender - evaluation criteria	whereas (46); (47) article 53, pt. 1, letter a		articles 81; 83 pt. 1	1.0
	Most economically advantageous tender - score / weighing values	whereas (46) article 53, pt. 2		articles 81; 83, pt. 2, 3, 4, 5	0.5
	Most economically advantageous tender - discretion of commission	whereas (46) article 53, pt. 2		article 84	1.0
	Anomalous tenders - above EU threshold	article 55		articles 86; 87; 88	0.5
	Anomalous tenders - under EU threshold			article 124, pt. 8	0.5
<i>Total</i>			0.0		4.0

(Please note that all the paper figures are also available in a bigger type-size at the end of the article).

Figure 2 - EU rules compliance measurement applied to the macro indicator tender award criteria

MACRO INDICATOR: TENDER AWARD CRITERIA		LEGISLATIVE FORMANT					
		E.U. RULES (DIR. 2004/18/CE)		SYSTEM "A" RULES (D.LGS. 163/2006)		SYSTEM "B" RULES (L.P. 26/1993)	
		References	Compl.	References	Compl.	References	Compl.
MICRO INDICATORS	Lowest price	article 53, pt. 1, letter b	-	articles 81; 82; 86; 87; 88	0.5	article 39 co. 1, letter a, pt. 3	1.0
	Most economically advantageous tender - evaluation criteria	whereas (46); (47) article 53, pt. 1, letter a	-	articles 81; 83 pt. 1	1.0	article 39 pt. 1 letter b, pt. 3	1.0
	Most economically advantageous tender - score / weighing values	whereas (46) article 53, pt. 2	-	articles 81; 83 pt. 2, 3, 4, 5	0.5	article 39, pt. 1, letter b	1.0
	Most economically advantageous tender - discretion of commission	whereas (46) article 53, pt. 2	-	article 84	1.0	article 39, pt. 1, letter b	0.5
	Anomalous tenders - above EU threshold	article 55	-	articles 86; 87; 88	0.5	article 58.29	1.0
	Anomalous tenders - under EU threshold		-	article 124, pt. 8	0.5	article 40	0.5
<i>Total</i>			0.0		4.0		5.0

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In both cases, the measurements were carried out with reference to the legislative formant and by considering only statutory rules. Nevertheless, it is clear that a measurement aiming at being exhaustive should be extended to regulatory / executive rules, provided that in many cases it is only from that level that emerge the most important aspects of compliance/non-compliance with the E.U. rules.

The third figure (fig. 3) shows the results of the measurements on the judicial formant (second pillar). For each *macro indicator*, the analysis considered the conformity of case law judges of the system analyzed with the case law of the EU judges.

Figure 3 - EU rules compliance measurement applied to the macro indicator tender award criteria (judicial formant)

MACRO INDICATOR: TENDER AWARD CRITERIA		JUDICIAL FORAMT					
		CASE LAW OF THE EUROPEAN COURT OF JUSTICE		CASE LAW OF SYSTEM "A"		CASE LAW OF SYSTEM "B"	
		References		References	Compl.	References	Compl.
MICRO INDICATORS	Lowest price	ECJ, case C-247/02, Sintesi SpA, 7 ottobre 2004 ECJ, case C-244/02, Kauppatalo Hansel Oy, 16 ottobre 2003 ECJ, cases C-285/99 & C-286/99, Impresa Lombardini SpA e Società Italiana per Condotte d'Acqua SpA, 27 novembre 2001	FIRST-DEGREE JUDGES ORIENTATIONS	1.0	FIRST-DEGREE JUDGES ORIENTATIONS	1.0	
	Most economically advantageous tender - evaluation criteria	ECJ, case C-315/01, Gesellschaft für Abfallentsorgung-Technik GmbH (GAT), 19 giugno 2003. ECJ, case C-448/01, EVN AG, 4 dicembre 2003 ECJ, case C-513/99, Concordia Bus Finland, 17 settembre 2002	IDEM	0.5	IDEM	1.0	
	Most economically advantageous tender - score / weighing values	ECJ, case C-532/06, Lianakis, 24 gennaio 2008 ECJ, case C-331/04, ATI EAC Srl e Viaggi di Maio Snc, 24 novembre 2005	IDEM	1.0	IDEM	1.0	
	Most economically advantageous tender - discretion of commission	ECJ, case C-470/99, Universale-Bau, 12 dicembre 2002	IDEM	0.5	IDEM	1.0	
	Anomalous tenders - above EU threshold	ECJ, case C-285/89, Caso Donà Alfonso, 18 giugno 1991 ECJ, case C-103/88, Fratelli Costanzo, 22 giugno 1989 ECJ, case C-76/81, Caso Transporoute, 10 febbraio 1992	IDEM	1.0	IDEM	1.0	
	Anomalous tenders - under EU threshold	ECJ, cases C-147/06 & C-148/06, Secap SpA/ECJ, case C-304/98, Hera SpA, 10 febbraio 1992 ECJ, case C-143/94, Furlanis costruzioni Spa, 26 ottobre 1995	IDEM	0.5	IDEM	1.0	
<i>Total</i>			0.0	4.5		6.0	

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In the example proposed, the measurement regards the prevailing case law of the first-degree administrative courts, whose compliance/non-compliance with the case law of the European Court of Justice was assessed.

Mutatis mutandis, the same considerations as for the first pillar hold: the research field should be extended for completeness sake to the decisions of the second-degree judges, because it is at that level that is crystallized the most cogent moment of compliance and/or non-compliance of the case law with the EU parameters.

4. THE MEASUREMENT OF ECONOMIC DATA REGARDING THE AWARD PROCEDURES OF PUBLIC CONTRACTS

In the second of the three analysis sectors are measured the *performances* of the systems of public procurement in the phase of the contract formation, that is to say from the moment of the decision to purchase to the award.

In that phase, the reasons of public interest that lie under the contract stipulation prevail over the parties' negotiation autonomy and are transformed into a number of rules and procedure

constraints that aim at annulling or at least significantly reducing the risks of administration partiality, by favoring in the same time the spotting of the most suitable provider and/or tender (Picozza, 2007).

The measurements carried out in this sector are based on eleven *macro indicators* that take as reference the most significant qualitative and quantitative data for describing the progress of public procurement systems; the data are as follows:

- (1) *general data of the system;*
- (2) *awarding procedures;*
- (3) *criteria for selecting tenders;*
- (4) *typologies of advertising;*
- (5) *discounts;*
- (6) *typologies and elements characterizing the awardees;*
- (7) *number and typology of tenders submitted;*
- (8) *number and typology of anomalous tenders detected;*
- (9) *litigations (in the phase of “evidenza pubblica”);*
- (10) *length of awarding procedures.*

A further *macro indicator* was found in the *awarding procedures of project design services*, whose peculiarity requires to be dealt with alone.

On the whole, the above mentioned *macro indicators* group together seventy-two *micro indicators*, to which specific data correspond. The measurements are carried out following these *micro indicators*.

Besides, two aspects need to be studied in depth relating to the adopted measuring method, in view of the criticalities found out.

First, it is necessary to stress the absence of reference parameters to which the measurements could be referred. In other words, there are not any data either homogeneous enough or complete and reliable that are able to represent such reference parameters as, for instance, could be the average European data of the *performances* of the contracting systems in the phase of public evidence. For this, the

measurement of the *micro indicators* is necessarily based on the comparison between the data of at least two different systems. Number “1” is assigned to the *micro indicator* whose data allow to detect better performances than those shown by the other system, while the value “0” is assigned to the *micro indicators* whose data allow to detect the worse performances. Therefore, the measurements lead only to relative (or comparative) results.

Second, there are few *micro indicators* that possess only a merely descriptive (or quantitative) importance; they do not certify the *performance* quality neither positively nor negatively. For instance, this happens when we consider: either the number of procurements awarded or the number of published contract authorizations or the number of anomalous tenders detected. In these cases, it does not seem reasonable to assign neither value “1” to the system that detects the greatest number of awarded contracts, nor value “0” to the system that detects the smallest number of anomalous tenders submitted etc. In other words, the measured data do not reveal either better or worse *performances*, but they have only a descriptive value.

Those data could even appear not useful at all for the research aims and for that reason they should be left out yet, those very data can be often useful in order to detect the systems functioning *performance*, if they are investigated as a whole and/or with other data.

In this way, it is possible, for instance, to assign value “1” to the system that, when related to the number of awarded procurements, detects shorter awarding times, or else to assign value “0” to the system that, when related to the number of awarded procurements, shows a smaller number of providers belonging to other regions / Member States. There are plenty of such examples, because it is easy to find out new combinations of data that can be extended even to the phase of procurement performance. Therefore, it is possible to verify if to larger/smaller number of transnational providers participating in the award procedures corresponds tenders with larger/smaller discounts, and/or larger/smaller percentages of litigation, and/or larger/smaller shifts in the time required for performance etc.

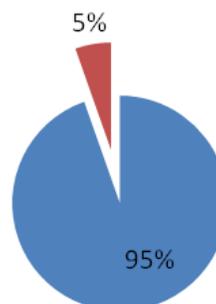
Going on with examples of the project model functioning, we chose as *macro indicator* the one of *tender awarding criterion* and in that area the employment of the maximum discount criterion is analyzed and of the economically most advantageous tender in relationship, among other things, on:

- procurement value;
- field of the activity at issue in the procurement;
- typology of the awarding entity;
- procedure adopted;
- discounts submitted by the tenderers;
- number of participants in the procedure.

To the *micro indicators* detected in this way it is possible to assign, on the basis of the measurement results, the values (either “1” or “0”).

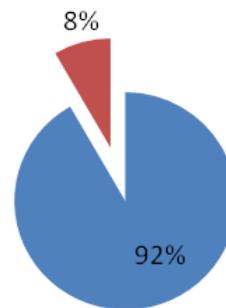
In the following figures 4 and 5 are shown the percentages of data regarding the utilization of the *maximum discount awarding criterion* and of the *economically most advantageous tender (macro indicator)* in the procurement awarding procedures of works whose cost is inferior to 5 million euros (*micro indicator*) in the markets governed respectively by system “A” and by system “B”.

Figure 4 - Percentages of utilization of macro indicator: the maximum discount awarding criterion / lowest price (blue) and the economically most advantageous tender (red) in system “A”



(Please note that all the paper figures are also available in a bigger type-size at the end of the article).

Figure 5 - Percentages of utilization of macro indicator: the maximum discount awarding criterion / lowest price (blue) and the economically most advantageous tender (red) in system “B”



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In the former case the maximum discount criterion was employed in 95% of cases, while in the market governed by system “B”, the maximum discount criterion was employed in 92% of cases.

5. THE MEASUREMENT OF ECONOMIC DATA IN THE PHASE OF PERFORMANCE

The last analysis sector measures the *performances* of the public procurement systems in the phase of contract performance, that is to say from the awarding of contracts to the contract discharge.

Indeed, very few data are available for this phase, maybe because it is wrongly thought that situations of bad administration are only tied to the contract formation and to the selection of the providers. Instead, it is during the execution of contracts that the respect of the contract objectives can be detected in terms for example of costs, times and quality. So, the criticalities, often latent since the early phases of procurement planning, come to the light in the

performance phase and cause significant delays, while new changes are required with an increase in costs and new litigations will follow etc.

In this section, the measurements are based on five *macro indicators* regarding the qualitative and quantitative most significant data in the phase of public procurement execution, that is to say:

- (1) *length of execution;*
- (2) *variations (referred to the foreseen length of execution);*
- (3) *subcontracting;*
- (4) *litigation (in awarding phase):*
- (5) *the variations of expenditure (referred to the amount defined as the basis of the procurement and to the contracted amount).*

On the whole, the above mentioned *macro indicators* group together fourteen *micro indicators* to which specific data correspond on which the measurement is made.

Here the general considerations on the detected criticalities apply and the solutions therewith adopted, given in chapter 4, with particular reference to: *i.* the absence of reference parameters for the measurements, and *ii.* the merely descriptive (or quantitative) value of certain *macro indicators*.

In the examples on the functioning of the project model in the phase of performance, the *macro indicator "life cycle"* is chosen, whose interest lies, among others, in:

- average life cycle for the activity and procurement amount;
- average life cycle for the adopted procedure and procurement amount;
- average shift of performance life cycle for typology of awarding entity;
- average shift of performance length for procurement amount;
- average shift of performance length for origin of providers;

- average shift of performance length for activity sector and procurement amount;
- average performance length for amount and discounts offered by submitters;
- average performance length for amount and number of submitters to the procedure.

To the *macro indicators* so detected are assigned, on the basis of the results of the measurements, the preset values (either “1” or “0”). The measurements of those *macro indicators* are a minimum part of the measurements carried out through the data and instruments developed in the research.

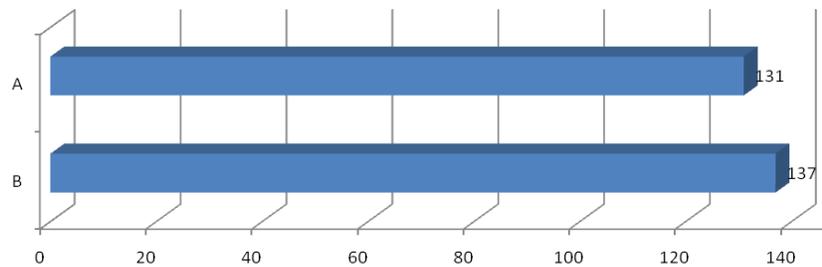
In the figures 6 and 7 are reported the measurements on the *macro indicator* execution term, carried on by relating two *micro indicators* and by comparing two different systems. In detail, the measurement considers the following data:

- *the average shifting of performance length of procurements inferior to the Community threshold of five million euros (the first micro indicator), in relation to...*
- *...the employed awarding criterion (that is the economically most advantageous tender and the maximum discount) (the second micro indicator).*

The first figure shows the data regarding the public procurements of system “A”, the second the data related to system “B”.

Figure 5 - The percentage average shifting of execution term (days) in systems “A” and “B” in relation with the maximum discount awarding criterion. The data regarding the PP works inferior to the Community threshold of five million euros

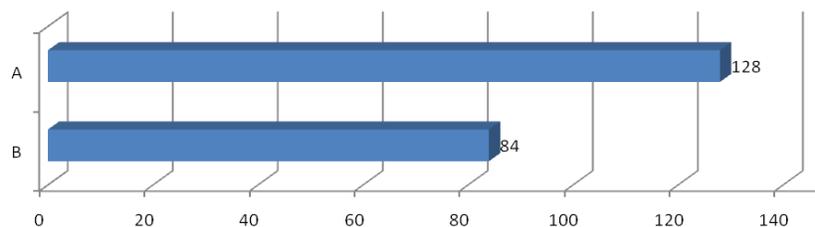
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(Please note that all the paper figures are also available in a bigger type-size at the end of the article).

The two elaborations show that in the market of system “A” the length shift of performance of public procurements awarded with the maximum discount criterion is equal to that of the procurements awarded on the market of system “B” (with reference to the same category and procurement amount). Differently, in system “A” the length shift of the procurements awarded with the economically most advantageous tender is wider than the procurements awarded on the market governed by system “B” (with reference to the same category and procurement amount). Therefore, in system “A” the awarding procedure with the economically most advantageous tender criterion leads less performing to results (when referred to system “B”) in the performance phase.

Figure 6 - The percentage average shifting of execution term (days) in systems “A” and “B” in relation with the economically most advantageous tender. The data regarding the PP works inferior to the Community threshold of five million euros



(Please note that all the paper figures are also available in a bigger type-size at the end of the article).

The results of the measurements carried out in the three sectors of the project allow the analysis of the relationship that exist between the degree of compliance with the EU rules of a legal system and the relative performances (the third objective, see chapter 2).

The conclusions from all the examples illustrated in the above chapters, are:

- with reference to the measurements of legal data, the method of the economically most advantageous tender has equal compliance in both the analyzed systems (“A” and “B”), while the discipline of the *maximum discount* has a better compliance in system “B” (see fig. 2).
- with reference to measurements of data in the public evidence phase, in the market of system “A” the *maximum discount* criterion was employed in 95% of awards, while in the market of system “B” the same criterion was employed in 92% of awards (figures 4 and 5). Differently, the *average shift of the performance length of procurements* awarded through *the economically most advantageous tender* is wider for the procurements granted in system “A” (figures 6 and 7).

Furthermore, information, both qualitative and quantitative, drawn from the measurements, even if partial and open to further improvements, already allows a number of considerations. For instance, we can notice that the maximum discount discipline in system “B”, even if it is less corresponding with the EU rules, does not hamper market *performance*. In fact, the average shift data of performing terms are equal to those detected in system “A”.

Besides, we can also note that system “A” causes longer delays in the *performance* of the contracts that were awarded with the economically most advantageous tender than those of system “B”, even if both the tenders are equally in line with the EU rules.

6. FUTURE PERSPECTIVES

The project model was outlined in its general features and functioning, but it is not prudent to call it “fully complete”. Not only the improvement of the model through corrections and/or integrations is required and desirable, but also the suggestions are to be taken into account that will surely come from the ongoing discussions both on the measurement of law and on the regulation of the indicators and also on their employment in key sectors (from the *governance* of financial markets to human rights policies).

In this context, the model described represents indeed a first reference model for the elaboration of more measurement models shared and reliable that can be applied outside the field of public procurement (for instance, to the sectors of competition, environmental protection, credit and insurance). This model could usefully compare different systems and improve the quality of their regulation.

Finally, it is easy to see that the model could be dramatically improved in the following three directions: *i.* in a more precise definition of the measurement method (Gambaro, 2010); *ii.* in a systematic assessment of the relationships between economic and legal data; *iii.* in a national, European and worldwide texting.

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FIGURES

Figure 1 - EU rules compliance measurement applied to the macro indicator *tender award criteria*

MACRO TENDER AWARD CRITERIA	INDICATOR: LEGISLATIVE FORMANT
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		E.U. RULES (DIR. 2004/18/CE)		SYSTEM "A" RULES (D.LGS. 163/2006)	
		References	Compl.	References	Compl.
MICRO INDICATORS	Lowest price	article 53, pt. 1, letter b		articles 81; 82; 86; 87; 88	0.50
	Most economically advantageous tender - evaluation criteria	whereas (46); (47) article 53, pt. 1, letter a		articles 81; 83 pt. 1	1.0
	Most economically advantageous tender - score / weighing values	whereas (46) article 53, pt. 2		articles 81; 83, pt. 2, 3, 4, 5	0.5
	Most economically advantageous tender - discretion of commission	whereas (46) article 53, pt. 2		article 84	1.0
	Anomalous tenders - above EU threshold	article 55		articles 86; 87; 88	0.5
	Anomalous tenders - under EU threshold			article 124, pt. 8	0.5
Total			0.0		4.0

Figure 2 - EU rules compliance measurement applied to the macro indicator *tender award criteria*

MACRO INDICATOR: TENDER AWARD CRITERIA		LEGISLATIVE FORMANT					
		E.U. RULES (DIR. 2004/18/CE)		SYSTEM "A" RULES (D.LGS. 163/2006)		SYSTEM "B" RULES (L.P. 26/1993)	
		References	Compl.	References	Compl.	References	Compl.
MICRO INDICATORS	Lowest price	article 53, pt. 1, letter b	-	articles 81; 82; 86; 87; 88	0.5	article 39 co. 1, letter a, pt. 3	1.0
	Most economically advantageous tender - evaluation criteria	whereas (46); (47) article 53, pt. 1, letter a	-	articles 81; 83 pt. 1	1.0	article 39 pt. 1 letter b, pt. 3	1.0
	Most economically advantageous tender - score / weighing values	whereas (46) article 53, pt. 2	-	articles 81; 83 pt. 2, 3, 4, 5	0.5	article 39, pt. 1, letter b	1.0
	Most economically advantageous tender - discretion of commission	whereas (46) article 53, pt. 2	-	article 84	1.0	article 39, pt. 1, letter b	0.5
	Anomalous tenders - above EU threshold	article 55	-	articles 86; 87; 88	0.5	article 58.29	1.0
	Anomalous tenders - under EU threshold		-	article 124, pt. 8	0.5	article 40	0.5
Total			0.0		4.0		5.0

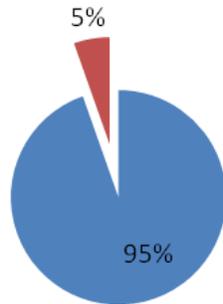
Figure 3 - EU rules compliance measurement applied to the macro indicator tender award criteria (judicial formant)

MACRO INDICATOR: TENDER AWARD CRITERIA		JUDICIAL FORMANT					
		CASE OF EUROPEAN COURT OF JUSTICE	LAW OF THE COURT OF JUSTICE	CASE OF SYSTEM "A"	LAW	CASE OF SYSTEM "B"	LAW
		References	References	Compl.	References	Compl.	
MICRO INDICATORS	Lowest price	ECJ, case C-247/02, Sintesi SpA, 7 october 2004 ECJ, case C-244/02, Kauppatalo Hansel Oy, 16 october 2003 ECJ, cases C-285/99 & C-286/99, Impresa Lombardini SpA e Società Italiana per Condotte d'Acqua SpA, 27 november 2001	FIRST-DEGREE JUDGES ORIENTATIONS	JUDGES	1.0	FIRST-DEGREE JUDGES ORIENTATIONS	1.0
	Most economically advantageous tender - evaluation criteria	ECJ, case C-315/01, Gesellschaft für Abfallentsorgungs-Technik GmbH (GAT), 19 june 2003, ECJ, case C-448/01, EVN AG, 4 december 2003 ECJ, case C-513/99, Concordia Bus Finland, 17 september 2002	IDEM		0.5	IDEM	1.0
	Most economic	ECJ, case C-532/06,	IDEM		1.0	IDEM	1.0

	ally advantag eous tender - score / weighing values	Lianakis, 24 january 2008 ECJ, case C 331/04, ATI EAC Srl e Viaggi di Maio Snc, 24				
	Most economic ally advantag eous tender - discretion of commissi on	november 2005 ECJ, case C- 470/99, Universale- Bau, 12 december 2002	IDEM	0.5	IDEM	1.0
	Anomalou s tenders - above EU threshold	ECJ, case C- 295/89, Caso Donà Alfonso, 18 june 1991 ECJ, case C- 103/88, Fratelli Costanzo, 22 june 1989 ECJ, case C- 76/81, Caso Transporoute , 10 february199 2	IDEM	1.0	IDEM	1.0
	Anomalou s tenders - under EU threshold	ECJ, cases C- 147/06 & C- 148/06, Secap SpAECJ, case C-304/96, Hera SpA, 10 february 1992 ECJ, case C- 143/94, Furlanis costruzioni Spa, 26 october 1995	IDEM	0.5	IDEM	1.0
Total			0.0	4.5	6.0	

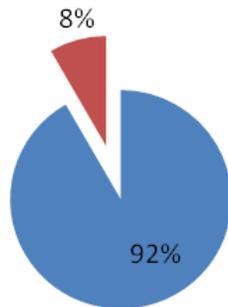
Figure 4 - Percentages of utilization of macro indicator: the maximum discount awarding criterion / lowest price (blue) and the economically most advantageous tender (red) in system "A"

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blue area - Lowest price
red area - Most economically advantageous tender

Figure 5 - Percentages of utilization of macro indicator: the maximum discount awarding criterion / lowest price (blue) and the economically most advantageous tender (red) in system "B"



blue area - Lowest price
red area - Most economically advantageous tender

Figure 5 - The percentage average shifting of execution term (days) in systems “A” and “B” in relation with the maximum discount awarding criterion. The data regarding the PP works inferior to the Community threshold of five million euros

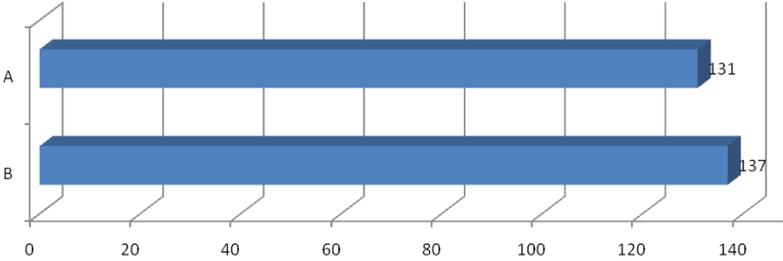


Figure 6 - The percentage average shifting of execution term (days) in systems “A” and “B” in relation with the the economically most advantageous tender. The data regarding the PP works inferior to the Community threshold of five million euros

