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## Zmiany w strukturze zamówień publicznych podmiotów sektora ochrony zdrowia w latach 1996-2006

### Streszczenie

System zamówień publicznych od 1995 roku stanowi jeden z podstawowych systemów gwarantujących efektywne wydatkowanie finansowych środków publicznych. Mechanizmem wspomagającym jest podsystem w postaci rynku zamówień publicznych, na którym podaż uzależniona jest od popytu, tj. liczby zamówień kierowanych na rynek przez publiczne zakłady opieki zdrowotnej. Podmioty sektora ochrony zdrowia, jako podmioty non profit, swoją działalność prowadzą w oparciu o posiadane wyposażenie (aparaturę i sprzęt), co powoduje, że zamówienia na ten asortyment stanowią znaczącą liczbę.

Od 2004 roku konieczność dostosowania infrastruktury budowlanej do standardów unijnych (np. adaptacja pomieszczeń w celu zainstalowania nowoczesnej aparatury, prace remontowe usprawniające ciągi piesze itp.) oraz środki finansowe z Unii Europejskiej spowodowały, że zaczęła wzrastać również liczba zamówień na roboty budowlane. Natomiast liczba zamówień na usługi wykazuje nieznaczny spadek w latach 2003-2006, spowodowany m.in. wycofaniem się podmiotów sektora ochrony zdrowia z outsourcingu, zwłaszcza związanego z cateringiem. Liczba emitowanych zamówień mając wpływ na rozwój strony podaźowej powoduje, że rynek zamówień publicznych spełnia rolę proefektywnościową i konkurencyjną.

Ustalenie zależności przyczynowo-skutkowych (ich wielkości) pomiędzy liczbą emitowanych ogłoszeń o przetargu, czasem realizacji kontraktu oraz kryteriami stosowanymi do oceny ofert przetargowych pozwala na stwierdzenie, że niedostateczny zasób finansowych środków publicznych w podmiotach sektora ochrony zdrowia zmusza kierownictwo tych podmiotów do wyborów alternatywnych pomiędzy kategoriami zamówień (roboty budowlane/dostawy/usługi) oraz że stosowane przez zamawiających kryteria do oceny ofert przetargowych mogą mieć wpływ na rozwój/stagnację konkurencji.

**Słowa kluczowe:** sektor ochrony zdrowia, samodzielne publiczne zakłady opieki zdrowotnej, zamówienia publiczne, oferty, kryteria oceny ofert przetargowych, modele ekonometryczne.

## Changes in public procurement structure of public health sector entities in 1996-2006

### Summary

Since 1995 the public procurement system has constituted one of the basic systems giving the guarantee for efficient expenditure of public financial means. The assisting mechanism here is a sub-system in the form of public procurement market, where supply is dependent on demand i.e. quantity of tenders directed to the market by public health care centres. Public entities of health care sector, as non-profit ones, run their business activity basing on facilities (apparatuses and equipment) they hold of; this makes orders for this type of assortment quite significant.

Since 2004 the necessity of adjusting construction infrastructure to EU standards (e.g. adaptation of accommodations aimed at instalment of up-to-date apparatuses, maintenance works on footways, etc.) and financial means from the European Union also raised quantity of orders for construction works. Still, the number of orders for services slightly goes down in years 2003-2006, what is produced, among others, by the fact that entities of health care sector are withdrawing from outsourcing, especially catering one. Influencing the supply development, quantity of issued orders makes public procurement market play a pro-efficient and competitive role.

Establishing the cause and effect dependencies (their volume) between the quantity of issued bid announcements, time of contract execution, and, criteria applied for tenders assessment, allows to determine that insufficient amount of public financial means owned by health care sector entities forces their management to make alternative choices among various categories of orders (construction works/deliveries/services); what is more, the criteria applied by ordering parties for tenders appraisal may affect development/stagnation of competitiveness.

**Key words:** public procurement, health care sector, public procurement market, quantity of tenders, econometric models.

## INTRODUCTION

Public procurement system constitutes the basic mechanism supporting public financial means. The most important goal is to ensure long-term and sustainable economic growth and high quality of public services. Imposing legal framework that regulates optimal public means expenditures, public procurement system stimulates economic growth of entities, at the same time giving the opportunity for competition development. Of much assistance are also detailed legal regulations that guarantee transparency and openness when granting the competitive tendering, open and equal access to public procurement tenders for each and any economic entity and real competition allowing to choose an optimal contractor/supplier.

An important part of this applied system is constituted by public procurement market, where mechanisms are able to objectify prices of ordered/supplied goods and services. Steady growth of granted tenders and gradually rising number of contractors/suppliers indicates a significant role of this market in conditions of free flow of goods and services (since 2004).

The process of harmonization and codification of Polish law implementing European Union legislature caused that entities of health care sectors are embraced by public financial means spending regulations. Full compliance in the area of transparency of granting public procurement tenders enabled to use the Union's financial means when modernizing the construction and technical basis (conversion of accommodation, apparatuses and equipment purchase) and protecting the basic accompanying facilities (services of catering, cleaning, and, security). Nevertheless, the constant rise of costs rendered by health care sector entities requires that managers should make alternative choices between directions of spending owned financial means (construction and building works/supplies/services).

This paper aims to verify the adjudicatory hypothesis that inefficient financial means in health care sector force alternative choices for their spending directions (construction and building works/supplies/services) at public procurement market.

The statement that the number of incoming tenders for one announced bid is dependent upon requirements applied by SPZOZ [Independent Public Healthcare Centre] towards contractors/suppliers (applied assessment criteria for tenders) is of assistance here.

For source data analysis, commonly used statistical methods that enabled quantification of data originating from public procurement market, were applied; for specification of the cause and effect dependencies line, econometric models were applied.

### 1. PUBLIC PROCUREMENT OF HEALTH CARE SECTOR ENTITIES UP TILL 1999

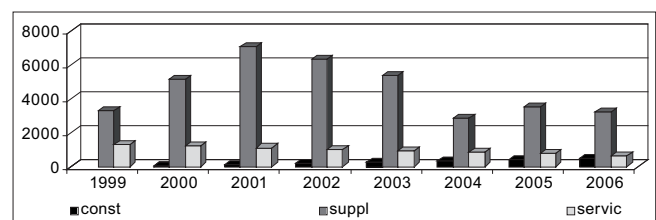
Changes in the public procurement system reflect all the changes that Polish economy has been undergoing. The Single European Act signed in 1991 was a stimulator for all activities as well as "screening" (law survey towards its compliance with European Union requirements) that in significant way made the changes come sooner. Establishing of the market of goods and services that heads for

"European" direction necessitated introduction of legal regulations that entail transparent and clear mechanism of public means spending. The Act on Public Procurement [1] enacted in 1994 based on a model UNCITRAL Act, did not include any catalogue of entities obliged to apply its provisions; criteria of public procurement for state and municipal entities were covered by separate regulations [2]. In this period entities of health care sector, as municipal administrative units, used to accomplish their public procurement as budget units [3]. Insufficient information on bidding, in case of independent public health care units, results from that kind of subordination [4]. Despite obligatory record on gaining independence by health care centres (1997), being a formal precondition to implementation of health insurance system [5], further subordination to state budget units caused that they represented SPZOZ as the ordering party (decision maker of choosing an optimal tender [6]). Lack of the specific record on obligation of publishing tender procedure caused significant lack of information on concluded contracts in the area of construction, delivery contracts [7] and services for SPZOZ (e.g. prices of the concluded contract, criteria for tenders etc.).

### 2. PUBLIC PROCUREMENT IN 1999-2006

National system reform conducted in 1999 aimed to adjust the Polish administrative and legal system to solutions commonly accepted in countries where the economic relations were based on market mechanisms (European Union). Newly arising areas of activities stimulated by developing techniques and technology, perspective of the markets to become European ones, brought about the necessity for verifying the already existing system solutions – also in public procurement area. Legal solutions relating to public procurement approved in 2003 were all but for a few exceptions completely compliant with norms and regulations of the European Union [8]. However, it was just after accessing the EU and the Public Procurement Act [9] became effective that the ordering system in Poland started to play a simulative role for optimal expenditure of public means. The number of orders issued to the market (public procurement) proved its pro-efficient and competitive role [10]. (see chart 1)

Throughout the analysed years, SPZOZ [Independent Public Healthcare Centres] issued most advertisements of deliveries to the public procurement market. Quantity of those orders was growing till 2001, whereas since 2002 a gradual fall in the number of these orders was recorded.

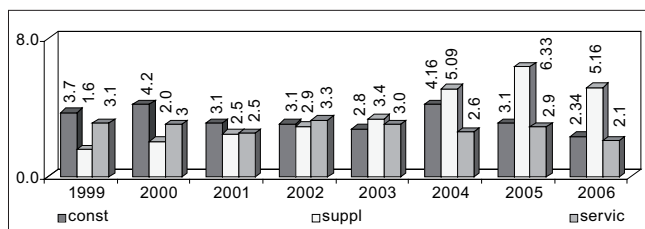


**CHART 1. Number of orders for construction works, deliveries and services within the years of 1999-2006.**

Source: own calculations for: construction works, deliveries and services \*/ Number of orders for construction works, deliveries and services within years 1996-2003 was estimated basing on data from reports of Urząd Zamówień Publicznych (UZP) [Public Procurement Agency].

The reason for that were mainly amendments to the Public Procurement Act, according to which the value threshold, over which advertisement of order became obligatory, was raised. In 2004 the number of orders indicated significant decline in result of Poland's accession to the European Union and the new Public Procurement Act [11] implementing legal EU solutions that become effective.

Public orders for services constitute second acc. to volume category of all issued orders. Advertisements for construction works were the fewest on the market (1999-2002). Since 2003 one can notice an increase in this volume into results of adjusting medical treatment standards to European Union requirements, and, necessity to modernise the construction and building infrastructure. Also, the public financial means of the European Union deriving from the European Regional Development Fund – ERDF, and other earmarked funds, e.g. Environmental Protection Fund, aimed at developing and modernizing medical and technical basis, became a stimulator for orders growth [12]. Additional financial means also affected higher interest of contractors/suppliers (quantity of orders) in SPZOZ [Independent Public Healthcare Centre] orders as they guaranteed their solvency (designated subsidies) – see chart 2.



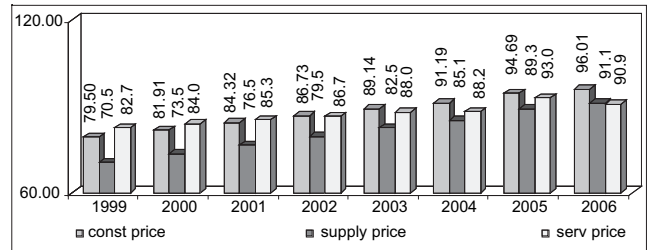
**CHART 2. Quantity of incoming offers as an answer to one bid of construction works, deliveries and services 1999-2006.**  
Source: own calculation on the basis of public procurement market information (www.uzp.gov.pl).

In 1999-2006 the number of incoming tenders for construction works was at the comparative level i.e. from 2 to 3 incoming tenders as an answer to one bid announcement. The year 2004 was an exception as the average number of incoming tenders went up to ca. 4.

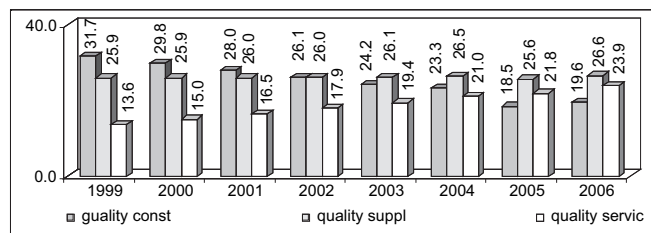
In years 1999-2003 the quantity of incoming tenders for deliveries for 1999-2003 amounted to: from 1.6 in 1999 to 3.4 tender in 2003. Still, in 2004-2006 that quantity rose significantly and was respectively: from 5.09 tenders in 2004, 6.33 tenders in 2005 and 5.16 tenders in 2006. The major reason was market Europeization i.e. free flow of goods and necessity of adjusting treatment standards to the EU demands (purchase of an appropriate quality apparatuses), and tenders appraisal criteria relating to contracts concluded by National Health Fund [13].

The quantity of incoming tenders [14] was also influenced by rates of these tenders applied by ordering parties (SPZOZ i.e. Independent Public Healthcare Centre). The basic criterion, i.e. the price, indicated a significant increase for all types of issued orders (see chart 3).

Discrepancy between 2006 and 1999 as the basic one amounted to respectively: 16.51 p.p. for construction works, 21.05 p.p. for supplies and 8.2 p.p. for services. The increase of price criterion indicates that the ordering party mainly took financial aspects into consideration, e.g. quality criterion (see chart 4).



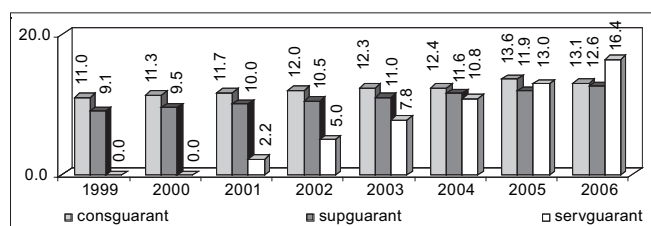
**CHART 3. Price criterion against tenders for construction works, deliveries and services in 1999-2006 (percentage points).**  
Source: own calculation on the basis of public procurement market information (www.uzp.gov.pl).



**CHART 4. Quality criterion against tenders for construction works, supplies and services in 1999-2006 (percentage points).**  
Source: own calculation on the basis of public procurement market information (www.uzp.gov.pl).

Criterion of tenders appraisal in form of quality for construction works was at the level of 31.7 p.p. in 1999, falling down to 19.6 p.p. in 2006. Supply quality criterion was at the alike level, whereas in case of services it went up as a result of more and more often applied outsourcing [15] of e.g. laboratory and diagnostic examinations that require specific equipment and professional servicing.

Guarantee criterion may be described as quasi-complementary criterion for ordered construction works, supplies and services. The above being guaranteed with suitable legal regulations [16] makes its application for appraisal of incoming tenders be groundless. (see chart 5).



**CHART 5. Guarantee criterion against construction works, supplies and services in 1999-2006 (percentage points).**  
Source: own calculation on the basis of public procurement market information (www.uzp.gov.pl).

Level of guarantee criterion for construction works, supplies and services in the analysed years indicated a slight increase. Still, in terms of services, the guarantee criterion went up significantly, i.e. by 7.3 p.p. in 2006 against 1999 year. The reason might be that the service contractors had to meet some requirements, which in case of services providers was ISO certificate, or in case of catering – HACCAP.

### 3. CAUSE AND EFFECT DEPENDENCIES – CHANGES TO PUBLIC PROCUREMENT STRUCTURE

When conducting the policy of public financial means expenditures, the health care sector managers are driven by needs of the units they manage. Each wrong decision may result in extra-operation indebtedness of the entity, as financial resources in the health care sector centres constitute the volume which does not allow executing all categories of orders at the same time. Thus, they have the (negative) correlative dependency to each other. In order to define these dependencies, i.e. between the quantity of announcements issued by SPZOZ [Independent Public Healthcare Centre] for each single type of order, an econometric line model was used; in this model the changing dependent variable is respectively quantity of ordering parties for construction works (*lbud*), supplies (*ldost*) and services (*lusl*), whereas the explanatory variables for construction works (*lbud*): quantity of orders for supplies (*ldost*) and services (*lusl*); for services (*ldost*) – quantity of orders for construction works (*lbud*) and services (*lusl*), and for services (*lusl*) – the quantity of announcements for construction works (*lbud*) and supplies (*ldost*) issued by SPZOZ.

$$lbud = 39.953 + 1.513ldost - 6.982lusl$$

$$ldost = -6.167 + 2.031lusl + 0.146lbud$$

$$lusl = 4.802 - 0.099lbud + 0.299ldost$$

The received models estimated with the Least Square Method (LSM) allow us to make the following conclusion on bids announcements:

- for construction works: 1% increase in supply orders causes 1.5% growth in construction work orders (*ceteris paribus*). Still, 1% increase in services orders brings about ca. 7% decline in construction works orders (*ceteris paribus*);
- for supplies: 1% increase in services orders causes ca. 2% increase in delivery orders (*ceteris paribus*), and 1% construction works orders increase causes ca. 0.15% rise in orders for supplies (*ceteris paribus*);
- for services: 1% increase in construction works orders causes fall of ca. 0.1% quantity of services orders (*ceteris paribus*); whereas 0 1% increase in supplies orders produces ca. 0.3% increase of services orders (*ceteris paribus*).

The necessity of adapting accommodation (construction works (see equation 1), apparatus and equipment purchase (contact criteria of the National Health Fund) – see equation 2 and limitation of ordered services (cleaning services, catering etc.) – see equation 3.

The basis for choosing an optimal bidder is quantity of incoming tenders, which in is significantly dependent on ordering parties criteria included in Specification of Key Order Terms (SIWZ). Criteria directly *ex ante* influence the bidders and their activities towards health care sector entities.

Line econometric models allowing to set up cause dependencies for quantity of incoming tenders confirm the thesis that criteria that are inappropriately applied may limit competition in health care sector.

$$lofbud=8.685+0.05348lczas-1.699lcn$$

$$ofdost=10.3909-0.9944jak+0.236cen$$

$$lofusl=25.994-3.998lczas-4.166lajak+0.694lg war$$

Received models (LSM) estimation) allow to formulate the following conclusions on applied criteria for tenders appraisal for quantity of tenders incoming as an answer to one bid announcement, for construction works: 1% increase of contract execution causes ca.; 0.05% increase of incoming tenders (*ceteris paribus*); 1% increase of the price criterion brings about fall of incoming tenders by ca. 1.7%;

- for deliveries: 1 p.p. increase of quality criterion causes decrease of incoming tenders by ca. 1 (*ceteris paribus*). Increase of 1 price criterion causes increase of incoming tenders of ca. 0.24;
- for services: 1% increase of contract execution time causes decrease of incoming tenders by ca. 4% (*ceteris paribus*); 1% increase of quality criterion causes fall in incoming tenders of ca. 4% (*ceteris paribus*); 1% increase of guarantee criterion causes increase of incoming tenders quantity of ca. 0.7% (*ceteris paribus*).

In the analysed dependencies, supplies time execution appeared to be statistically insignificant due to frequent supplies execution (e.g. drugs) at the so-called 'cito' term. Decrease of incoming tenders for services while prolonging the time of service execution and quality criterion may result from instability of price system in health care sector (e.g. food prices increase – catering) and requirements related to rendered medical services standard (ISO certificate).

### CONCLUSION

The necessity of making suitable choices between construction works and services (*sensu largo* activity) and operational activities (statutory ones) basing on subject's equipment (apparatuses and equipment) due to limited financial means constitutes a basic task of the management of the entity (SPZOZ – Independent Public Healthcare Centre). Market comes as facilitating factor for public procurement market, at which optimal price for ordered categories is being shaped as a result of market mechanisms operation. However, criteria of tenders appraisal applied by ordering parties influence the price; their suitable choice may result in either development or stagnation of competition (quantity of incoming tenders). The key decisive factor here is high price criterion of growing tendency that prefers the cheapest contractors/suppliers. The other tenders appraisal criteria, e.g. quality, are treated complementary, what in consequence may influence growth in quantity of tenders, as such low quality results in break-downs of equipment (unable to be eliminated) after warranty time is over. It produces extra costs for SPZOZ. The conclusions allow to positively verify the hypothesis of the need for the entity managers to make alternative choices between types of undertaken action (construction works/supplies/services) and of the influence the applied appraisal criteria exert on quantity of incoming tenders. It also allows to state that the cheapest price does not always come as the most efficient (optimal) one.

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