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COMMERCIALIZATION AS A RECOMMENDED APPROACH TO HOSPITAL RESTRUCTURING CASE STUDY OF ŁAŃCUT MEDICAL CENTER[1]

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Abstract

Our society is on the brink of health care system reorganization and implementation of new medical technology. Hospitals have to be a core component of the medical revolution so they have to be prepared for the upcoming leap in their development. If Poland wants to be a pioneer in providing new medical solutions, the current ineffective system has to be changed. The necessary action should be taken to deal with the financial problems Polish hospitals have faced for over 20 years. The current structure of hospitals - SPZOZ, is old-fashioned and cannot adapt to a turbulent social and economic environment. The hospitals should be commercialized and restructured. Being capitalized companies will give incentives and new tools to deal with financial problems.

The article presents an example of the commercialized hospital in Łańcut. We make the observations that commercialization increases: a hospital's profitability, its employment productivity, its capital investment spending and leverage. The case proves that the transformation of hospitals to capital companies proposed by the Ministry of Health may be an appropriate approach and it does work once a reasonable management board is in charge. However, the legal structure alteration should be treated as the first step in the overall restructuring process. The article highlights the problem of managers of Polish hospitals who do not only struggle with financial shortages, but barely know which business model they should follow after commercialization to successfully run the restructuring process. Having examined the LMC the authors are crafting a prelude to the overall research on already commercialized hospitals to find an appropriate business model.

JEL classification: C 53, G38, H51, I18
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Introduction

A strategy for European Union Health Care is called "Together for Health". The term "together" is referred to many times in public debates, which is not surprising as having followed Bismarck's dogmas of replacing an individual approach to health with collectivistic ideas (Palmera, 2012), many institutions cooperate to serve social needs. Representatives of the European Union have strongly emphasized that health is not the issue of an individual person; the health condition of society as well as the condition of the health care system throughout Europe are among the most important factors that may contribute to improving standards of life, competitiveness and the overall condition of the European economy. It is empirically proven that the effective use of health expenditures can enhance the GDP of a country. That is one of the reasons why as much as 10% of the European Union GDP is spent on health care, which makes the sector the fastest developing in Europe. Ten percent of the labor force work in the health care sector in the European Union and it is predicted that 8 million new vacancies will appear in the sector by 2020. Health care programs are the most important part of "Europe Strategy 2020" (European Commission, 2014) which incorporates a very ambitious plan of transforming the European Union economy into a modern, intelligent and fast growing economy. Europe needs intelligent investments in health care, new ways of implementing innovations and smart and reasonable restructuring of the health care system, otherwise the accessibility to health care systems in many societies may be a challenge.

While facing all the changes in medicine, it is important to ask if Poland is prepared for the remarkable civilization leap, and if the Polish health care institutions are ready to adapt to the upcoming transformations (Institute of Economic Sciences PAS, 2012). It is worth highlighting strongly this question since the Eastern European countries are regarded by many experts as an appropriate seat for medical revolutions. The reasons are: low cost of investment implementation and cheap labor force. Poland as the country situated in the heart of Europe and the second fastest (after Ireland) developing economy among OECD countries in the last 25 years, is noted as the most appropriate country to successfully implement the medical changes (Skorupska, 2012).

The fast development of Polish medicine and still visible potential for growth are facts. On the other hand, a problem of permanent dissatisfaction of the Poles with the medical services offered by hospitals is often raised. The authors point out, as one of the relevant steps, a need for overall restructuring of Polish hospitals from both financial and organizational points of view. Paradoxically, financial shortages are not the only issues managers of hospitals often come across. Tailoring a desirable and economically efficient business model is also a core challenge. Taking into consideration an example of the hospital in Łańcut, the authors present a desirable direction of organic changes that may be imitated by other commercialized hospitals. The Medical Center in Łańcut (LMC), in our view, is a case that proves the massive advantages of the restructuring and commercialization process the hospital went through.

Hence, there are three observations made:

H1: Financial standing of LMC improves after its commercialization.

H2: Operational performance of LMC, measured in 4 areas: profitability, employment productivity, capital investments and leverage with the use of 7 variables (ROS, ROE, SaPa, APa, FAS, DA, DEB) also improves after its commercialization.

H3: The quality of services offered by the hospital, measured via a patient satisfaction survey, has not worsened in the post-commercialization period.

The observations are the result of the use of methods described in the research sections.

HOSPITALS IN NEED OF TRANSFORMATION

The Polish health care system has been suffering from underfunding for over 20 years, and at the same time hospitals have faced chronic debt. The data presented in Figure 1 and Table 1 show that financial debt is a permanent problem of Polish hospitals that successively prevent them from becoming effective and financially sound institutions. Consequently, the lack of effectiveness of Polish hospitals is indicated by many experts as the biggest problem of the Polish health system. Despite many attempts at debt reduction offered by the Ministry of Health (which according to the Ministry has cost approximately 20 billion PLN so far), the situation has not improved. Even though the hospitals received the financial help, it was often not connected with overall restructuring of their functioning, and the problem with finance reappeared. The most recent idea of the Ministry of Health to deal with the problem is to allow hospitals to transform their structure from SPZOZ to a capital company. Many experts indicate that the path shaped by the Ministry is finally an appropriate approach and should be treated as the first step toward an overall restructuring process.

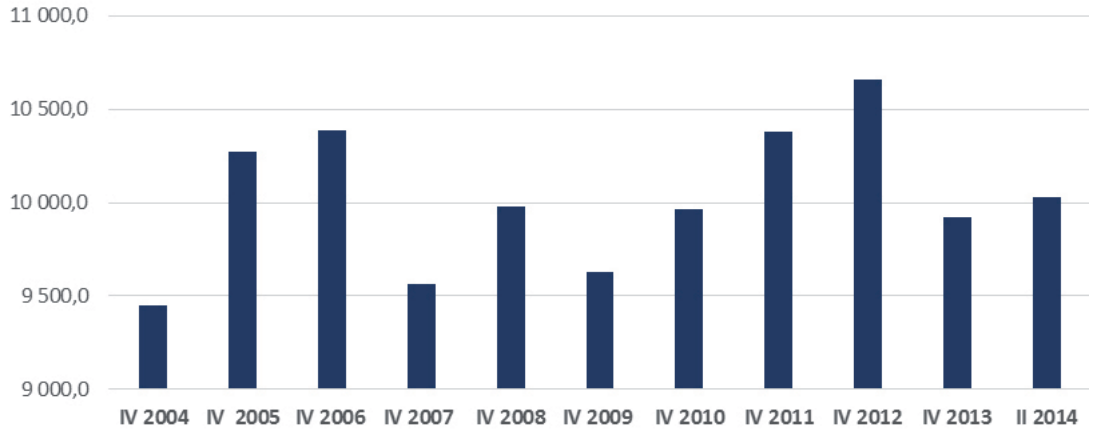

Figure 1. The value of total liabilities of hospitals from 2004 to 2014 (millions PLN)

Source: Based on Ministry of Health data

Table 1. Total liabilities of SPZOZs by provinces from 2004 to 2014 (millions PLN)

No.	Provinces	Total liabilities										
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	II q. 2014
1	Dolnośląskie	1 421,5	1 488,7	1 416,9	1 160,9	1 023,5	904,2	831,1	765,9	712,2	634,6	655,1
2	Kujawsko-Pomorskie	427,7	464,0	517,9	444,9	454,4	428,3	503,1	602,5	752,5	853,2	907,0
3	Lubelskie	532,1	531,7	562,4	510,5	636,6	699,1	766,2	803,8	848,1	849,8	898,4
4	Lubuskie	535,8	599,0	649,9	571,2	491,9	458,8	387,7	385,9	359,2	89,1	85,2
5	Łódzkie	877,4	978,8	1 001,8	918,7	1 029,2	770,1	674,3	747,5	641,3	606,4	581,4
6	Małopolskie	606,6	673,3	669,5	643,1	676,8	666,7	692,7	704,4	762,4	811,0	826,2
7	Mazowieckie	1 037,4	1 217,0	1 204,2	1 292,1	1 484,5	1 505,6	1 637,6	1 598,8	1 740,7	1 551,3	1 605,6
8	Opolskie	169,2	165,8	120,6	107,0	129,8	116,9	114,1	120,7	133,6	130,9	126,4
9	Podkarpackie	301,3	340,7	340,2	318,4	361,0	374,3	432,3	479,2	499,6	545,6	554,4
10	Podlaskie	269,3	279,5	256,5	238,0	258,0	292,4	331,2	364,7	360,7	384,5	384,4
11	Pomorskie	688,2	836,7	955,2	860,8	827,2	709,5	668,1	668,9	640,1	259,0	253,0
12	Śląskie	947,0	993,7	1 056,1	997,7	1 064,0	1 087,0	1 200,2	1 303,5	1 291,1	1 183,4	1 134,5
13	Świętokrzyskie	366,8	374,9	337,4	308,0	288,0	286,0	327,4	344,1	369,9	385,3	384,9
14	Warmińsko-Mazurskie	226,0	220,6	194,6	178,4	182,2	187,7	182,0	171,5	201,3	174,1	169,0
15	Wielkopolskie	333,6	376,4	391,1	371,8	447,4	514,3	562,9	618,5	625,2	635,6	637,0
16	Zachodniopomorskie	302,8	318,1	323,6	284,9	236,9	244,1	264,5	297,0	299,3	363,5	353,3
17	MON	201,3	180,1	167,0	130,2	142,5	152,6	177,0	179,2	177,4	179,5	191,1
18	MSW	206,0	234,5	219,4	226,7	245,7	230,3	210,8	227,4	246,6	285,2	283,3
SUM		9 450,1	10 273,6	10 384,2	9 563,3	9 979,7	9 627,6	9 963,1	10 383,6	10 661,4	9 922,1	10 030,3

Source: Based on Ministry of Health data

The commercialization process was run by almost all outpatient medical care companies (they were usually also privatized). However, the vast majority of hospitals still remain under the SPZOZ structure that does not fit the turbulent environment the hospitals function within (Karkowski, 2012). It is worth indicating that before accepting „Plan B" by the government in 2009 - the new way of conducting the commercialization process, there were approximately 100 SPZOZs that had been transformed into capital companies. However, in many papers the commercialization process undertaken before 2009 is called colloquially 'creeping commercialization' as it seemed to be a rash, politically justified process, which would not help hospitals heal their financial situation. The legislature saw the gaps in the law and introduced the possibility to run sustainable and direct commercialization. Having seen many advantages of hospitals acting as capital companies, the legislature added a financial incentive for local authorities to the Act of Medical Activity from 2009. A massive run for commercialization was then expected to begin but the results are highly unsatisfactory. The number of commercialized hospitals after and before the Act's introduction by the government has not been greatly changed. Despite the financial incentives, the numbers indicate that the government predictions with regard to commercialized hospitals were highly exaggerated. From July, 2011 to October, 2013, thirty four hospitals were transformed based on the rules of law included in the Act of Medical Activity; including 1 hospital in 2011, 13 in 2012 and 20 in 2013.

The data show that despite many clear advantages of running hospitals as capital companies, managers are still afraid of taking the step toward commercialization. One of the constraints is strong social aversion to commercialization that exists in Poland (Horosz, 2013). Access to health care is considered to be a basic human right, and the general public perceives commercialization as the step preceding privatization. Another obstacle is an organizational constraint regarding uncertainty of managers as to the final financial result to be achieved. When it comes to the positive financial result after commercialization, a lot of misunderstanding arise. Commercialization itself is not a panacea for any financial problems as only a complex approach to healing the financial debt can bring positive results. Also the need for overall restructuring is not strongly pointed out by authorities and political institutions. Instead they often mislead and confuse the audience when discussing the consequences of commercialization processes. These points of view were presented by the Highest Audit Office (Najwyższa Izba Kontroli) in the research made to evaluate the results of hospital commercialization entitled 'Information about the results of the audit of ownership transformation of selected hospitals in 2006-2010'. First of all, the very title is misleading because commercialization is not ownership transformation, but judicial and organizational transformation only (Horosz, 2012). Secondly, the methodology used to conduct the research (evaluation of commercialization in the light of financial statements without looking deeply at organizational and management changes) indicates that the misunderstandings are spread even among the officials of highest rank.

The authors would like to indicate that having known the clear advantages of commercialization, managers of hospitals do not know what business model they should implement after transformation and what organizational changes they should make to make hospitals more effective and prepared for implementing the innovations. The information gap in the sector has to be filled as fast as possible. Undoubtedly, the managers of hospitals must know that the financial debt influences all departments of hospitals and is a real constraint of their proper functioning. The financial problem influences both patients and employees. Various problems that might be a consequence of serious indebtedness might include the following: fewer medical services offered, blocked bank accounts and cash inflow to the hospital, problems with a equipment and medicinal supplies, difficulties with the implementation of external medical examinations, employee salaries paid in installments or with a long delay, or blocked sickness benefits and insurance premiums. As experience shows, the situation might also cause social frustration among the employees (strikes and job terminations). The result of that can be seen in relations with business partners as such a hospital would lose its credibility and the business partners would eventually raise prices for products and services (Leśniak, 2014). The hospital would face new costs, and in these conditions the managers of the hospital may find themselves unable to manage the institution.

Commercialization of Polish hospitals in numbers

Before the changes introduced in the Act of Medical Activities in 2011, and despite the lack of appropriate rules of law, some hospitals decided to approach commercialization. The hospitals used a current law to transform the structure, which was mainly based on the Act of ZOZ from 1991. Before 2011, transformation into capital companies required former liquidation of the hospital. The process was complicated. Starting in 2009, hospitals could run the commercialization process directly, without the liquidation. The current structure of hospitals in terms of their organizational and legal frame of business activity is presented in Table 2.

The presented data shows that in 2013 SPZOZ (75%) is the dominant structure of Polish hospitals. Only 15% of the hospitals in Poland are non-public entities, which makes the sector one of the most politicized in Poland. The change in law in 2011 gave a definite boost (13 commercialized hospitals in 2012 and 20 in 2013) to hospital transformation (compare Figure 2), but the process is far from over.

Table 2. Hospitals in Poland in 2013 - legal frame of business activity

All hospitals	736
Non-public hospitals created without transformation	39
Non-public hospitals transformed from SPZOZ	148
Public hospitals (SPZOZ)	549

Source: Based on Ministry of Health data

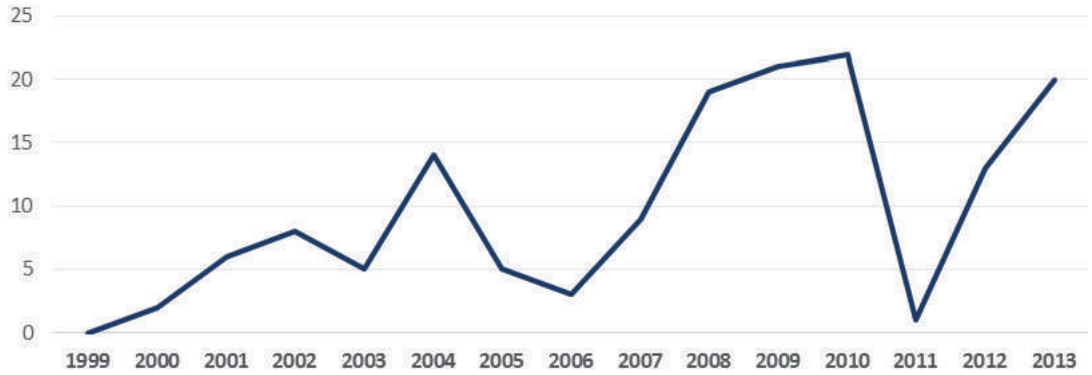

Figure 2. The dynamics of Polish hospitals transformation in 1999-2013

Source: Based on Ministry of Health data

Table 3. The Ministry of Health expenses for commercialization 2012-2013 (PLN)

	Prediction	Reality
2012	400 000	39 080
2013	600 000	230 118
Total	**1 000 000**	**269 198**

Source: Based on Ministry of Health data

At the beginning of the Act's implementation, the Ministry of Health planned to spend 1 000 000 PLN on the commercialized hospitals. The sum is definitely overrated as the whole commercialization process in terms of the Act of Medical Activity cost 269 198 PLN (compare: Table 3). When it comes to the commercialized hospitals with regard to provinces, Dolnośląskie and Śląskie districts had the highest number of commercialization processes from 1999 to 2013. The situation can be explained by the highest financial debt experienced by the hospitals in the regions (compare Table 1). There were no commercialization cases in Podlaskie and Lubelskie districts. Podkarpackie district had only two transformed hospitals.

Table 4: Hospital commercialization by province

No.	Province	Number of hospitals															
		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
1	Dolnośląskie	0	0	0	5	2	6	1	1	0	8	0	1	0	0	1	25
2	Kujawsko-pomorskie	0	0	3	1	0	2	2	0	1	1	1	1	0	0	0	12
3	Lubelskie	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
4	Lubuskie	0	0	1	1	0	0	0	1	2	0	2	2	0	0	2	11
5	Łódzkie	0	0	0	0	0	0	0	0	0	1	2	2	0	0	1	6
6	Małopolskie	0	0	0	0	1	0	0	0	1	2	1	1	0	0	2	8
7	Mazowieckie	0	0	0	0	0	0	0	0	1	0	0	4	0	1	6	12
8	Opolskie	0	0	0	0	0	3	1	0	0	0	2	0	0	1	0	7
9	Podkarpackie	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
10	Podlaskie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Pomorskie	0	0	1	0	0	0	0	0	1	2	3	1	0	5	3	16
12	Śląskie	0	0	0	0	0	1	0	0	3	0	7	7	0	2	2	22
13	Świętokrzyskie	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	4
14	Warmińsko- Mazurskie	0	1	1	0	1	1	0	0	0	0	1	0	0	1	2	8
15	Wielkopolskie	0	1	0	0	1	0	0	0	0	2	1	2	0	0	0	7
16	Zachodniopomorskie	0	0	0	0	0	0	0	0	0	2	0	1	0	2	1	6
	Total	0	2	6	8	5	14	5	3	9	19	21	22	1	13	20	148

Source: Based on Ministry of Health data

Table 5. Operational structure of transformed Polish non-public hospitals

No.	Company	Non-public companies
1	Limited liability company	136
2	Joint-stock company	9
3	General partnership*	1
4	Private partnership*	1

** This indicates that a hospital was privatized after commercialization.*

Source: Based on Ministry of Health data

The legislators allowed the managers of hospitals to choose the most appropriate legal frame of the companies during the transformation process. The vast majority of Polish non-public hospitals (92.5%) operate as limited liability companies.

Many of the opponents of the commercialization process argue that commercialization is simply a step towards privatization. This statement is not supported by any data. Nowadays, as many as 73% of all non-public hospitals are still owned by local authorities typically possessing 100% of shares in hospitals.

Table 6. Percent of local authority's shares in Polish transformed hospitals

No.	Non-public companies	% of shares owned by local authority		
		100%	<100%	0%
1	Limited liability company	5	0	4
2	Joint-stock company	104	13	22

Source: Based on Ministry of Health data

It is worth indicating that the commercialization process of hospitals in Poland has just begun. Twenty-five years after transformation, as many as 549 hospitals may still be potentially commercialized. Apart from judicial problems (overcome after introducing the Act of Medical Activities in 2011), another obstacle often indicated is managerial fear of commercialization (only 32 hospitals were transformed after 2011). The authorities should analyze the problem and, after profound research, the appropriate business model should be found to help the managers approach the issue. This paper presents an example of a well-managed hospital in which managers have made responsible decisions in terms of commercialization and restructuring that positively influenced financial performance and overall effectiveness of the hospital.

ŁAŃCUT MEDICAL CENTER - CASE STUDY

The example of Łańcut Medical Center (LMC) shows that a hospital can benefit from commercialization providing the process is combined with the restructuring led by a decent management team. To evaluate the results of the overall change, first the financial statements from 2006 to 2012 (before and after the commercialization) of the hospital were analyzed. (The financial statements were bought at eforex.pl. for this study.) Then, the observations concerning the performance of the hospital in 5 areas were verified. Finally, the analysis also has a qualitative dimension, based on conversations with the staff of the hospital and the patients. This provided profound insight into the functioning of the hospital in the attempt to evaluate the institution correctly. The results of the survey are presented in this section.

LMC is a limited liability company that was established on February 17, 2009 in accordance with the Act of the Council in Łańcut and the Act of Founding. At the time of creating the new legal structure, the share capital of the company was 50 000 PLN. The local authority was the only owner of the company holding 100% of the shares. The initial capital was raised by 1 000 000 PLN in June 27, 2012 and 20 additional shares were issued. The share capital in 2012 was 54 350 000 PLN - 1087 shares, each worth 50 000 PLN. The main purpose of LMC, according to the Act of Founding is to run medical services as a non- public hospital. The hospital serves all patients but it focuses on the population within the District of Łańcut which covers approximately 78 000 people. Services are provided in the area of primary health care, residential care, long-term care, nursing care, specialist care, surgical rehabilitation, health programs, emergency and occupational medicine.

Hospitals being special entities in economic terms are mostly focused on delivering high quality medical services - that is the core purpose of each hospital. To provide society with high quality services the managers have to prevent hospitals from chronic debt to enable development. Managers having in mind ongoing development should look for appropriate steps to create around them the environment for changes. In the case of LMC the opportunity was realized when commercialization of the hospital was completed. It is visualized in financial statements and the set of metrics provided in the research. It is also tangibly proven by the set of investments in fixed assets undertaken by managers of the hospital. The final proof is provided by the results of the survey conducted among both patients and staff of the hospital.

LMC CASE STUDY - REINVENTING OF THE HOSPITAL AFTER THE RESTRUCTURING

Here is a list of various developments that took place after and partially thanks to commercialization of the LMC.

1) opening of a geriatric department (12 beds) and rehabilitation department for children,

2) purchase of an archiving and distribution digital X-ray system to develop the existing digital radiography system,

3) opening of a modernized and expanded neuro-rehabilitation department including: neurological, surgery, communicable diseases and rehabilitation sections. The investment was financed by the Regional Operational Programme of Podkarpackie Region for 2007-2013,

4) increased number of beds in the following departments: rehabilitation (12 beds), neurological rehabilitation (22 beds), neurological (16 beds) and caring department (54 beds),

5) launching a modern CSSD, several renovations were done to adapt the building of its functioning and washing ultrasonic, steam sterilizer and transport trolleys were bought,

6) the external funds from Regional Operational Programme of Podkarpackie Region for 2007-2013 were accepted by local authority,

7) continuing to re-develop the Hospital of St. Michael in Łańcut under the public-private partnership.

It should be emphasized that all of the goals set by the managers of the hospital were achieved under the regime of independent financial policy (without the local authority support). Thanks to commercialization the hospital receives wider access to bank loans. The LMC hospital took on a 3 500 000 PLN investment loan for 5 years.

All the development steps are made by the hospital to be more competitive on the market. The managers of the hospital know that they have to face strong competition in Podkarpackie district. Observing the environment, the managers set a strategic plan which is based on keeping the investment approach and caring about the quality of services. The hospital agreed to enter a plan of Ministry of Regional Development, which indicates a need for financial help for legal, technical and financial development of the hospital to be carried out via PPP (Public and Private Partnership).

LMC CASE STUDY - FINANCIAL SITUATION

Although the subject of the analysis is the period of time covering the years after the commercialization of the hospital (2010, 2011, 2012), the revenues and costs are presented from 2006 to 2012 to present a complete picture of the hospital's performance. The analysis evaluates steps taken by the managers of LMC from the financial point of view.

Figure 3 shows the revenues and financial results of SPZOZ in Łańcut from 2006 to 2009 and then LMC till 2012. It is worth indicating that in 2006 the hospital suffered from financial turbulence resulting in huge losses. The first step of the board of directors was to reach for external financial sources (from the local authority). The step is highlighted in the balance sheet under 'Other inflows from financial activities' (4 700 356 PLN). Having seen that the external sources did not work without the overall restructuring and having predicted a huge financial problem in 2009, the managers of the hospital decided to transform the institution into a capital company and began all the necessary organizational changes. Having anticipated all possible advantages of the success transformation the managers assumed not only the improvement of the financial condition of the company but also investments in the infrastructure and quality development. As it shows in Figure 3 already in the first year after the transformation in 2010 the revenue exceeds the levels observed in the years 2006-2009, and it is high enough to cover all costs. In the years to follow the revenues systematically grew and reached the highest point of 54 355 092 PLN in 2012.

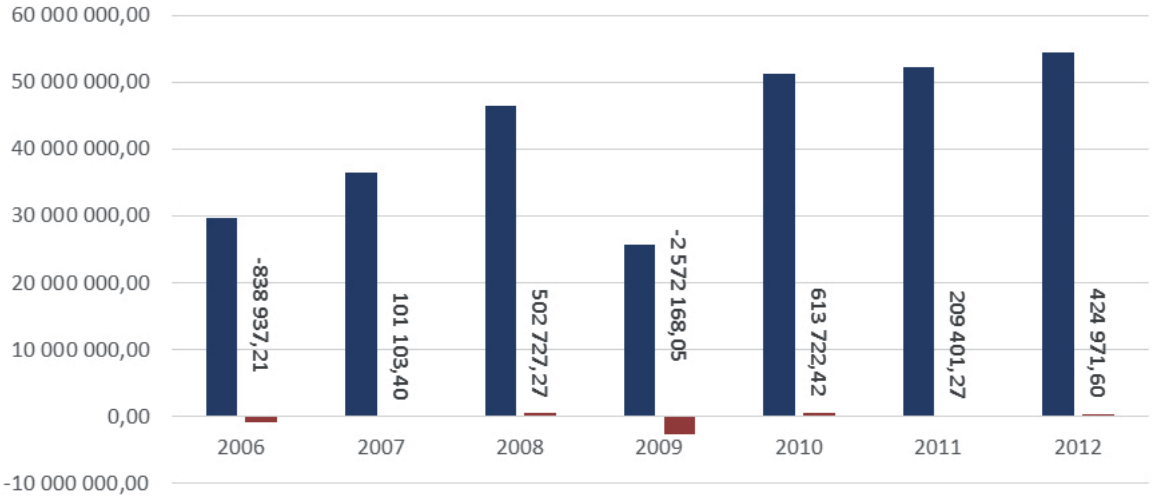

Figure 3. Revenues and profit/loss of Łańcut Medical Center in 2006-2012

Source: Based on LMC financial statements

The analysis of the balance sheet of the company shows that fixed assets started to grow and in 2012 they represent 84.09% (79.05% in 2011, 79.38% in 2010, 84.4% in 2009) of all the assets of the company. A significant increase in tangible fixed assets is clearly visible: the difference between 2011 and 2012 is about 3 288 352 PLN. This was a significant contribution towards improving the quality of functioning of the hospital. Current assets level was more volatile and were 15.91% (20.95 in 2011, 20.62% in 2010, 15.6% in 2009) of all the assets of the company. In the group of current assets a decline of 2 686 624 PLN can be noticed in comparison to 2011. It was mainly the cash deposited in a long-term investment in order to secure the future financial situation. The structure of liabilities (capital structure) indicates the source of financing the assets. There was an increase in debt capital which was caused by taking an investment loan and receiving European Union funds. The access to European Union funds is another advantage of a hospital that functions as a capital company. An increase in liabilities and provisions for liabilities can also be observed. The increase is caused by the rise of provisions for liabilities by 211 800 PLN, long-term liabilities by 308 900 PLN, short-term liabilities by 1 092 500 PLN and accruals by 1 184 500 PLN. It should be emphasized that in LMC's case the golden rule of finance balancing is obtained - fixed assets are covered by the long-term fixed capital (Perechuda & Kowalewski, 2008). What is more, the long-term investments in the group of fixed assets are very liquid.

Table 7. Selected balance sheet entries (thousands PLN)

	2010	2011	2012
Equity	55 148	55 328	57 127
Long-term liabilities	0	1 313	1 621
Long- term provision	2 597	1 787	1 938
Long- term fixed capital	57 745	58 428	60 686
Fixed assets	51 335	53 409	60 596

Source: Based on LMC financial statements

Table 8. Financial ratios

Ratio	2010	2011	2012
Assets (in thousands PLN)	64 669	67 560	72 061
Net profit (in thousands PLN)	614	209	425
Revenues (in thousands PLN)	51 244	52 131	54 355
ROA (%)	0.95	0.31	0.58
ROE (%)	1.11	0.38	0.74
ROS (%)	1.18	0.4	0.78
Current Ratio (CR)	2.01	1.8	1.47
Quick Ratio, (QR)	1.86	1.7	1.3
Liquidity ratio (%)	0.73	0.8	0.45
DSO (days)	43	45	39
Liabilities turnover (days)	11.3	11.7	11.5
Inventory turnover (days)	5.5	6.1	6.1
Ratio of fixed assets to equity	1.12	1.07	1.19
Ratio of the stability of the financing structure	0.89	0.88	0.84

Source: Based on LMC financial statements

Ratio analysis is a fast and trustworthy way of taking a deep look into the financial issues of a company. The proper selection and interpretation of the indicators gives a reliable and comprehensive assessment of the financial situation. The company's financial performance is evaluated within four basic areas: profitability, efficiency, liquidity and debt.

In LMC the revenues generated by the hospital always cover its costs. Profitability ratios are all above zero, although low, which is understandable because, for a hospital, maximization of the profit is not the major goal. What is more, all of the ratios from 2012 were higher than the ones in 2011. All the liquidity ratios are above the appropriate thresholds for the hospital sector. Liabilities turnover ratio is 11.5 days and did not change drastically from 2011. Receivables turnover ratio is closely connected with the inflows from NFZ. The ratio indicates how fast the hospital is able to recover the set amount of money from the payors. In 2012 a slight improvement of the ratio is observed. Inventory turnover ratio (6 days) is very stable. The analysis indicates that in terms of basic financial parameters the hospital functions properly after restructuring. The financial condition of the hospital has improved. Undoubtedly, commercialization, responsible management and organizational restructuring have provided the hospital with the incentives for better coordination of the hospital' activities regarding both revenues and costs.

The analysis presented below shows how precisely the managers of the hospital could predict the structure of revenues and costs. It is worth emphasizing that they worked in the same turbulent environment experienced by any other hospital in Poland. To evaluate the financial result in 2012, one has to pay attention to invoicing extra

services offered by the hospital, which were not included in the contract with NFZ. The sum is 644 372 PLN and the write-down was created for 509 432 PLN. The amount of 134 940 PLN is the value of life-saving benefits. The agreement signed with NFZ in 2009 and 2010 had a very important influence on the financial result in 2012. The agreement included the deals signed for both SPZOZ in Łańcut in the first half of 2009 and LMC. Thanks to the agreement between the hospital, NFZ and the local authority, SPZOZ received 1 204 000 PLN for life-saving services, and LMC received 718 000 PLN in the second half of 2009 and 666 000 PLN in 2010. All the incomes positively influenced the financial result in 2012. The financial result is then 842 000 PLN. After income tax reduction the financial result is finally 425 000 PLN. The situation only indicates that the attitude of managers to make changes in hospitals is honored by NFZ as the payor also sees the better perspective for a commercialized hospital and is able to allocate more funds to such a hospital.

Table 9. Revenues of Medical Center in Łańcut in 2012 (thousands PLN)

No.	Name	Prediction	Results	Result/Prediction
1	Revenues from NFZ	50 144	50 014	99,74%
2	Extra services not included in NFZ contract	780	1 447	185,51%
3	Patients' payments for staying in ZPO,ZOL	610	642	105,25%
4	Payable services	650	623	95,85%
5	Working medical services	70	83	118,57%
6	Vaccination and other medical services	370	115	31,08%
7	**All medical activities**	**52 624**	**52 924**	**100,57%**
8	Rents and others	1100	1056	96,00%
9	Financial revenues	100	291	291,00%
10	Selling of materials	0	2	0,00%
11	Other operational revenues	800	956	119,50%
	All non-medical activities	**2 000**	**2 305**	**115,25%**
	All revenues	**54 624**	**55 229**	**101,11%**

Source: Based on LMC financial statements

Table 10. Costs of Łańcut Medical Center in in 2012 (thousands PLN)

No.	Name	Prediction	Results	Result/Prediction
1	Consumption of materials and energy	10 480	10 130	96,66%
2	External services	11 578	11 127	96,10%
3	Taxes and charges	516	556	107,75%
4	Payroll	23 650	23 357	98,76%
5	Employee benefits	4 460	5 184	116,23%
6	Depreciation	3 000	3 332	111,07%
7	Social security and other generic costs	780	571	73,21%
	SUM	**54 464**	**54 257**	**99,62%**
8	Cost of materials sold	0	0	0,00%
9	Financial costs	100	141	141,00%
10	Other operational costs	60	653	1088,33%
	Sum of all	**54 624**	**55 051**	**100,78%**
	All revenues	**54 624**	**55 229**	**101,11%**

Source: Based on LMC financial statements

The financial analysis of LMC shows that there is no danger to the further financial functioning of the hospital. In such a stable situation the hospital can safely run their services and managers can plan its development, that otherwise - under the SPZOZ structure - would be problematic. The managers correctly perceived commercialization as the first step to undertake overall restructuring that enabled them to modernize and develop the infrastructure of the hospital (Kachniarz, 2008).

LMC CASE STUDY - METRIC BASED ANALYSIS

It is commonly said that while clever transformation (commercialization and restructuration) of hospitals is completed, managers of the hospitals along with the local community may expect significant improvement regarding financial and quality issues. The purpose of the paper was to compare the pre- and post-commercialization performance of LMC hospital. This was measured via 7 metrics in 4 areas: profitability, employment productivity, capital investments and leverage. The following initial observations were made: commercialization increases: a hospital's profitability, employment productivity, capital investment spending and leverage. Within the 4 areas, 7 variables to test the observations were employed. Table 11 presents the testable predictions and the empirical variables (and their definitions). The proposed methodology of measuring the hospitals' effectiveness is recaptured from D'Souza's (1999) seminal paper in which the performance of privatized companies is analyzed.

The analysis of LMC covers 2 periods: after (A) and before (B) commercialization. In both cases three years, before the hospital's transformation (years from 2006 to 2008) and after the process (years from 2010 to 2012), are taken into account. The year of commercialization (2009) was defined as year 0 and it was excluded from the analysis. In sum, the analysis covers 6 years. These two analyzed periods were estimated in terms of the 7 ratios. To test the predictions, first empirical proxies for LMC for a seven year period were computed. Then, the mean of each variable over the pre- and post-commercialization period was calculated. All the variables are ratios, hence they are fully comparable and there is no need for indexing, deflating or changing any nominal data into real values.

Table 11. Areas, metrics and initial observations (to be verified)

Area	Metric	Observations
Profitability	(ROS) net profit / revenue	ROS(A) > ROS(B)
	(ROE) net profit / equity	ROE(A) > ROE(B)
Employment productivity	(SaPa) revenue / payroll	SaPa(A) > SaPa(B)
	(APa) assets / payroll	APa(A) > APa(B)
Capital investments	(FAS) investments in tangible fixed assets / revenues	FAS(A) > FAS(B)
Level of debt	(DA) long-term debt / assets	DA(A) > DA(B)
	(DEB) long-term debt / EBITDA	DEB(A) > DEB(B)

Source: Patena 2015

Table 12. Summary of the results from test of predictions for A and B periods

Metric	Mean B	Mean A	Mean change	Verification results
ROS	-0.004904	0.007937	0.012841	Yes
ROE	-0.004545	0.007451	0.011996	Yes
SaPa	32.614183	41.091909	8.477726	Yes
APa	31.133067	53.159943	22.026876	Yes
FAS	0.049015	0.080306	0.031291	Yes
DA	0	0.013978	0.013978	Yes
DEB	0	0.289650	0.289650	Yes

Source: Own elaboration

The results of the research are presented in Table 12. Generally, they show a significant improvement in all analyzed areas and all employed metrics. However, one cannot say whether the differences in means are statistically significant since by definition the sample is composed of one hospital that is the subject of the case study.

The change in profitability was examined using two measures - ROS and ROE. As it is observed in Table 12 the hospital improved the 2 profitability ratios. The average value of ROS in (B) increased from -0.49% to 0.79% in (A). Huge improvement is also seen in terms of ROE (from -0.45% to 0.75). Both cases unequivocally confirmed the posed observations. After the commercialization profitability of LMC was significantly enhanced.

Typically, governments launching privatization expect that privatized firms 'will increase sales, become significantly more efficient and profitable, increase their capital spending (...), but fear that these benefits will come at the cost of reduced employment' (D'Souza, 1999). Transformation of hospitals raises the same fears. It often discloses an overabundance of employees especially in administration which causes ineffectiveness. It is said that after commercialization, responsible managers would provide a hospital with better allocation of resources. This thesis applies to human resources, capital resources and tangible assets. Here, two ratios (SaPa and APa) were taken into account to verify if managers of LMC undertook an optimization approach regarding human resources in terms of generated revenues and assets. Table 12 shows that both ratios experienced positive change. The average of SaPa increased from 32.61 before commercialization to 41.09 after the process was undertaken. APa increased even more significantly from 31.13 to 53.16. The observation confirms the authors' assumption that to some extent ineffective employment was revealed after commercialization of the hospital which could have led to lay-offs. Another reason, however, could be the significant increase in revenues.

FAS is the ratio to measure investments in tangible fixed assets in relation to revenues. In the research FAS has doubled. It is not surprised as the paper indicates the massive amount of investment begun in LMC after transformation (see the section entitled 'Reinventing of the hospital after the restructuring'). Managers of the hospital realized that responsible investments had to take place in order to maintain high quality of medical services and adapt the hospital to more liberal conditions prompted by the market and competition. The average value of the ratio increased from 4.90 to 8.03. It lets the authors move to the conclusion that the observation made in terms of capital investments (with regard to LMC) is also positively verified.

Ratios in the leverage area are connected with the previous indicator. Investments in tangible assets undertaken by managers were prompted by the bank loan received by LMC. As it was already scientifically proven the commercialization of hospitals reveals the possibility to achieve better access to external funding (Kaszyk, 2014). The results based on DA and DEB ratios proved the fact. It is observed that the scope of both ratios before commercialization is equal to 0. It is consistent with the fact that almost no investments in fixed assets were implemented from 2006 to 2008 and the investments were possible after the commercialization was launched. The average of DA and DEB from 2010 to 2012 is accordingly 1.40 and 29.00. To better visualize the impressive scope of investment overtaken by the hospital Table 13 with long-term liabilities in LMC in nominal numbers that covers 7 examined years is provided. It additionally confirms that commercialization in LMC positively influenced debt ratios in the hospital as it allowed managers to gain external funds.

In conclusion, the analysis shows that, consistently with initial observations, the commercialized hospital exhibits significant improvement in all analyzed areas and all employed metrics. It reveals that ROS, ROE, SaPa, APa, FAS, DA and DEB ratios increased significantly in 3 years after commercialization. The actions initiated by the commercialized hospital seem to go in the right direction: enhanced profitability, employment reductions, increased investment and changed capital structure. Thanks to the organizational and legal transformation, LMC broke the destructive impasse. After commercialization LMC enhanced its management, owner supervision, director responsibility, finance, employees' productivity and achieved wider access to external financial sources. LMC can be seen as a positive example of a commercialized hospital in Poland but of course its outstanding results cannot be generalized into the whole population as the research sample is not representative.

Table 12. The level of debt at LMC

	2006	2007	2008	2009	2010	2011	2012
Long-term liabilities	0	0	0	0	0	1 312 668	1 621 630

Based on LMC financial statements

LMC CASE STUDY - QUALITY IN LMC AFTER COMMERCIALIZATION

The research was so far mostly quantitative. Taking into account the fact that hospitals are unique entities that play an important role in local societies and their public perception is as important as their economic results, the authors made an attempt to provide some qualitative analysis. In particular, we attempted to verify whether the quality of medical services declined after commercialization of LMC, which is often an argument raised by the skeptics of hospital transformation.

The fact that commercialization along with restructuring discloses over-employment (especially in administration) does not implicate the assumption of worsened quality of medical services provided. It is worth emphasizing that the quality and number of medical services offered by the hospital were not lowered. On the contrary, on average one patient was served with a higher number of medicines and more medical equipment was used during the treatment process per patient in the post-commercialization period. Therefore, the popular claim that raising effectiveness of hospitals' medical staff negatively affects the quality of medical services is not confirmed with regard to LMC. Fears about massive medical staff reductions often accompany concerns about the quality of services. The argument has to be dismissed in the view of LMC. Here, the number of medical doctors was not changed, nor was the number of nurses. The staff reduction was observed in administration. It had an impact on declining salary expenditures from 1472463 PLN in 2008 to 1247455 PLN in 2010. Moreover the transformation prompted the hospital to launch new investments that effected new vacancies for medical doctors. In 2010, 58 new job positions were offered in the hospital for doctors and the number increased to 61 job positions in 2012. The managers enhanced human resources management by introducing transparent wage regulations based on the Code of Labor and implemented efficiency criteria. These steps positively influenced medical services' quality and helped the hospital keep high standards of services.

The above conclusions find confirmation in the results of the patient satisfaction survey performed at LMC (charts 4-6). The data are recaptured from an annual satisfactory survey conducted in the hospital. In the standard procedure aimed at monitoring the quality of the services every patient of LMC is provided with the questionnaire. The analysis below is a summary of the survey results - it is based on answers obtained from patients in the years 2010-2012. The charts below indicate that patients of LMC are satisfied with services received in the hospital. In all three questions the vast majority of answers are positive. The average from 3 years after commercialization regarding evaluation of a stay at LMC made by patients is impressive. Ninety percent of respondents assess their stay as good and very good and only 3% during the 3 years evaluated it as bad. Only 0.10% of the interviewees perceived the attitude of doctors as unpleasant and the remaining responses regarding doctors' attitude was positive. In terms of question 3 regarding the attitude of nurses the survey does not reflect any negative answers. In terms of question 3 the average of answers from 3 years after commercialization indicate that 60% of respondents perceived nurses' attitude as very nice and 41% as nice.

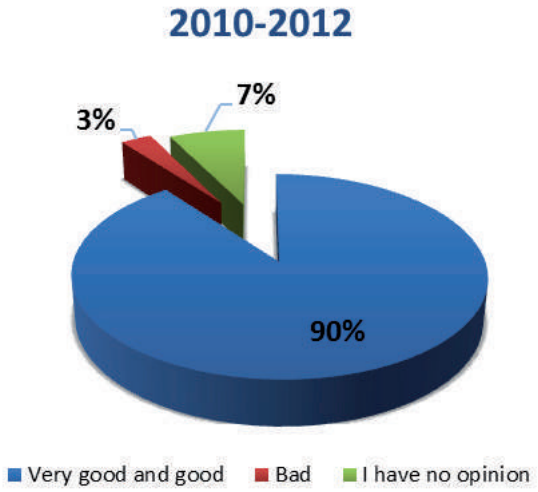

Figure 4. How do you evaluate your stay at LMC?

Source: Own elaboration

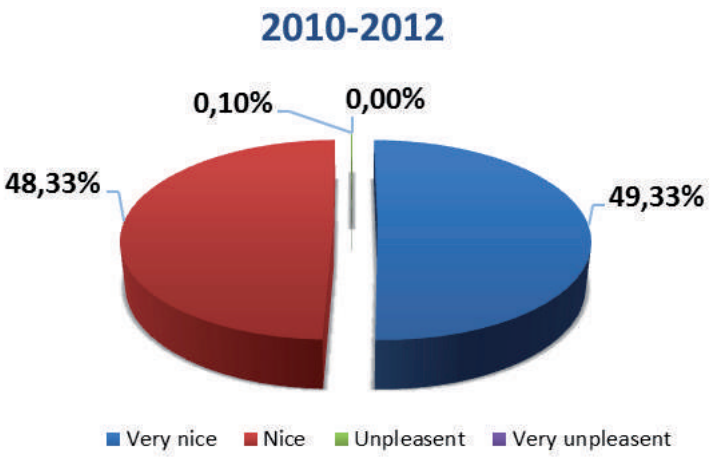

Figure 5. What was the attitude presented by doctors?

Source: Own elaboration

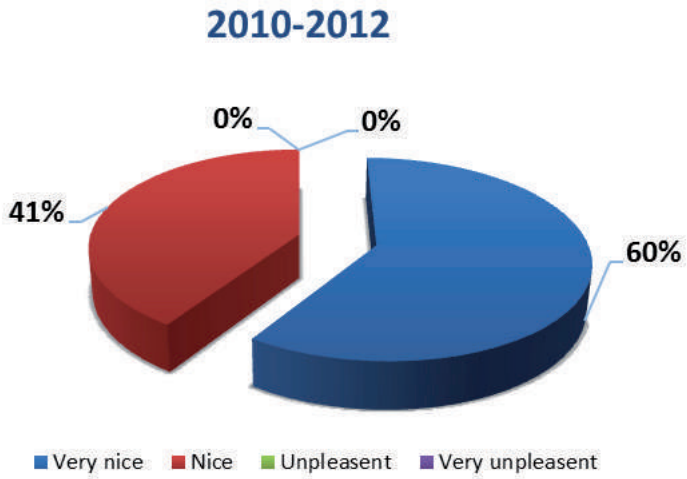

Figure 6. What was the attitude presented by nurses?

Source: Own elaboration

Conclusion

Being on the brink of medical revolution, Poland faces many problems regarding the health care system. The most important medical institutions - hospitals, are not prepared for the implications of new medical solutions. So far there is no discussion about introducing the upcoming innovations in Poland, because Polish hospitals struggle with their financial problems. Hospitals have been suffering from chronic debt for 25 years and when finally the appropriate solution to deal with the issue seems to be found, commercialization is still far from being widely implemented. Decision makers hesitate since they do not know what results the commercialization may bring. And the rumor has it that it leads to privatization of hospitals and higher prices. The fear seems justified as there is no decent research on the subject and managers do not know why some hospitals do well after the commercialization and the others do not. They simply do not know what business model they should choose to run a hospital as a capital company. The dualistic nature of the companies, having to offer public services and having to adhere to the rules of a free market, creates some extra resistance.

It is worth emphasizing that another round of commercialization and restructuring processes can benefit from the positive experiences of the hospitals that successfully went through the process. Presenting the example of the commercialized hospital in Łańcut can be a good starting point. The painful restructuring process was fruitful, the hospital is financially sound, as a matter of fact now it is one of the fastest developing hospitals in Poland. The example also proves that reasonable and qualified managers are a very important part of the process. Analyzing the case it should be emphasized that the transformation is a very complex process which starts with a very clear concept, followed by massive determination and cooperation of various institutions (local authorities, management staff of the hospital and

medical staff of the hospital) involved in the process. The LMC was analyzed in terms of its financial standing, then a few specific metrics were employed in order to verify the initial observations concerning the hospitals post-commercialization performance. The performance was measured via 7 metrics in 4 areas: profitability, employment productivity, capital investments and leverage. The observations that commercialization increases the hospital's profitability, employment productivity, capital investment spending and leverage were fully confirmed. In addition, the results of the survey done on a sample of patients in the post-commercialization period also confirm the fact that LMC transformation is a successful implementation of commercialization procedures. A further step of the research should include a statistically justified sample of commercialized hospitals. Only the fully-quantifiable sample may provide hospital managers with a clear map of necessary points to be followed once the restructuration process is about to begin.

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