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Market Creation of Urban Public Bus Services: A Case Study of the Consequences of Competitive Tendering of Helsinki Metropolitan Area Bus Services

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Abstract. Many European metropolises started to introduce market based models in the provision of urban bus services in the early part of the 1990s. The aims of these reforms have been to increase economic efficiency and implement the policy goals of the European Single Market.

This is a case study of market creation of metropolitan bus service in the Helsinki region in Finland. The aim of the study is to analyze the central events of the market creation and demonstrate the economic consequences of the introduction of competitive tendering.

According to previous studies on competitive tendering, procurement agencies have been able to generate remarkable savings. The research findings of this case study are in line with the previous findings as the analyses demonstrated substantial savings on municipal expenditures. For example, in the first round of competing bids, the price levels of delivery costs of the regional bus services fell 33-34 percent. Competitive tendering has delivered savings many years, but as its ramification the operators of bus services have faced severe financial difficulties. Furthermore, the study also proves many unintended consequences such as the privatization and corporatization of municipal bus enterprises, distorted market structures, and strikes undertaken by labor unions.

Keywords: bus services, market creation, competitive tendering, local government

1. Introduction

In all Nordic welfare societies, the local public sector has a central role in the provision of welfare services by utilizing public law arrangements via public bureaus and public sector employees. Public welfare theorists say that the governmental production of public services guarantees equal access to services and fair treatment of customers, but public choice theorists claim that public bureaucracies are monopolies populated by self-interested bureaucrats trying to maximize the public budgets and causing inefficiencies and government failures. According to the public theory, there should be a large number of service units in order to create competition in the production of public services. Furthermore, the public service units need sufficient autonomy to be able to develop and re-engineer service processes to logistical and technical developments and the changing needs of citizens [1].

The legal and economic environment of the Nordic metropolises has considerably changed during the last thirty years. Open market economy policy has gain ground especially because of the creation of the European Single Market and liberalisation processes of world trade. The big cities have got new residents, who have increased the demand to expand urban services and make new investments to infrastructure. Furthermore, economic recessions have caused serious financial problems to city governments, who have forced them to look for alternative public service delivery systems. For these purposes, many city governments have introduced the purchaser-provider split and some other quasi-market arrangements.

All the classic definitions of a market refer usually to a place where the sellers of a specific commodity can meet with the buyers of those goods and where there is potential for an exchange transaction to take

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place. According to modern conceptions, a market is a social network of relational contracts among economic actors who are potential sellers and buyers and may be engaged in vertical business relationships [2]. Market creation refers to a process, where market institutions are developed and put into practice focused on such commodities, which have not been traded previously under market circumstances. Market institutions are typically laws, regulations, economic incentives and trade customs such as contracts. Pure public goods are not suitable market governance, but market mechanism might provide some operation models for other public services such as merit goods and publicly financed private goods. Sometimes commercial enterprises also have to create new markets, when they have invented new products or services and they start to look for suitable and new customers via new business models. In this study, we focus on the market creation in public bus services managed by urban local governments.

Many European metropolises started to introduce market based models in the provision of regional and local bus services in the early part of 1990's. The primary aims of these reforms have been to increase economic efficiency and improve productivity of the bus industry, and implement the policy goals of the European Single Market.

This is a case study of market creation of metropolitan bus service in the Helsinki region in Finland. The aim of the study is to analyze the central phases and events of the market creation and demonstrate the most important economic consequences of the introduction of competitive tendering in the bus services of the metropolitan area.

2. Short Literature Review and Methodology

As competitive tendering is a radical and controversial alternative to organize public services it is a highly interesting method on implementing public policies. According to previous European studies on competitive tendering of public services, procurement agencies have been able to generate remarkable savings. There is research evidence of remarkable cost savings as a result of market testing and competitive tendering. According to Bailey, municipal cost savings vary widely depending on the sector of the service and the country and region to which the data relate, the gross savings of about 20 percent seem broadly representative [3].

Johnson has concluded that the involvement of private companies in public transportation will bring savings on public spending. According to his findings private bus operators were able to provide the service by 6-18 percent lower costs than public bus operators [4]. When the cities of Sydney and Melbourne introduced competition into the bus markets, researchers were able to conclude that Sydney generated 13-20 percent saving and Melbourne saved 8-10 percent. The researchers also claimed that the quality of services and the experiences of customers were improved [5]. The estimated cost savings due to market creation of public transport services were 7 to 20 percent in Netherlands [6]. Research findings from Germany have demonstrated significant savings (i.e. 25 %) combined with quality improvement due to competitive bidding introduced by local authorities [7]. Kennedy found out that competitive bidding of London buses reduced costs by 14-18 percent and made the quality of the services better [8]. Furthermore, previous research findings have cited achieved public savings also in Poland and Norway [9]

Bel and Costas have claimed that more recent studies cannot show a clear and positive correlation between outsourcing of local public services and cost savings. They have said that new evidence is mixed, because savings seems to vary in different services and disappear over time [10]. Bekken, Longva, Fearnley and Osland have pointed out that it cannot be known whether savings and efficiency gains are sustainable after a few years [11]

3. Methodology

The research has been carried out as a long-term follow-up study [12]. Qualitative empirical data was collected by interviews, a small survey, and a focus group exercise. This data was summarized, compared and consolidated into crystallized observations. Quantitative data was acquired from the official documents of the metropolitan municipalities and official annual report and accounts of companies. Quantitative economic effects were analyzed by making financial statement analysis and illustrated by calculating key ratios. There first materials were started to collect in 2000 and after that new data have been collected from time to time to date.

4. Research Findings

4.1. The Development of The Market of Metropolitan Bus Services

In the 1980s and the early part of the 1990s, the Helsinki metropolitan area included the cities of Helsinki, Espoo, Vantaa and Kauniainen. These local governments independently organized bus services (i.e. bus routes), which operated within the jurisdictions of the individual municipalities. The market of the bus services was closed as the services were procured by the municipal agency from private and municipal bus operators via negotiated contracts. In 1986 a joint municipal authority was established to coordinate regional bus services (i.e. bus routes cross municipal jurisdictions). The joint metropolitan authority had a duty to arrange the regional bus services by using contractors. Municipal regulations did not directly prohibit the metropolitan authority to run its own busses or organize competitive tendering for external contractors, but it decided to imitate the established practices of the individual municipalities and introduced the similar system of the negotiated contracts. Financial compensations for the bus operators were defined in mutual negotiations between the municipal authorities and the incumbent bus operators. It was very difficult or even impossible for potential entrants to enter the markets, because bus operators needed to have special permits given by the state regional authorities.

The city of Helsinki was a special case, because beside contracted services it also had its own in-house unit, which delivered not only bus services but also tram and subway services. The cities of Espoo and Vantaa had municipally-owned limited bus companies, but just before the market of regional bus services was opened they sold (i.e. privatized) those companies. This is illustrated in Figure 1.

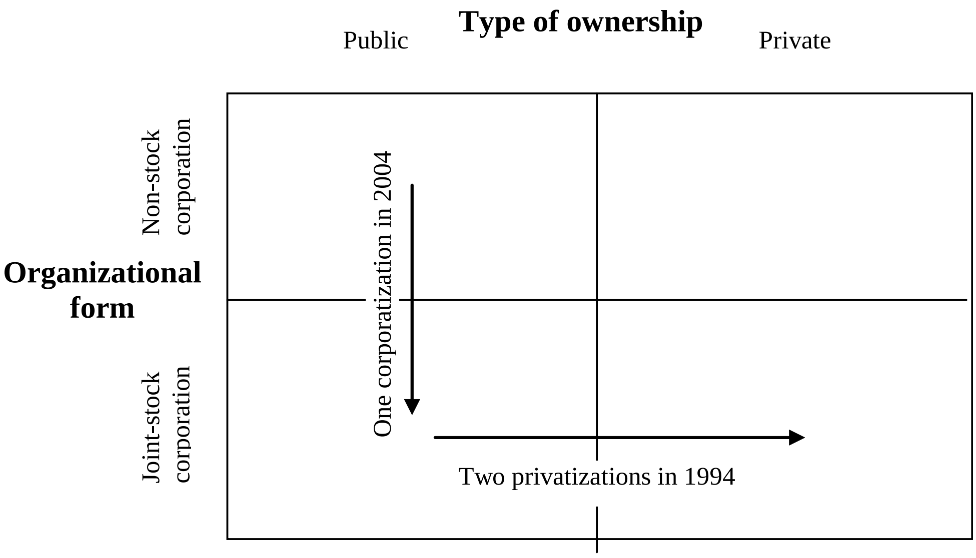

Fig. 1: Organizational changes of the bus operators 1994 and 2004.

A new law of public transport was introduced in 1991 and the first law of public procurement came into effect in 1994. These acts created a preliminary framework of the market creation. Furthermore, Finland became the EU member country in 1995.

Figure 1 demonstrates the main phases and events of the market creation of bus services in the Helsinki Metropolitan Area. It has a timeline in the middle of the figure. On the left side of the time, the crucial policy changes and the changes of procurement agencies are presented. The right side of the timeline demonstrates the main changes and events what have happen with operative services and among bus operators.

The closed market of bus services was expensive for local governments, since the negotiation powers of the bus operators were strong. The central aim of the creation of the open market was to increase efficiency of the services and deliver savings for public budgets. Surprisingly improvements of the quality of services were not considered as an important aim [13].

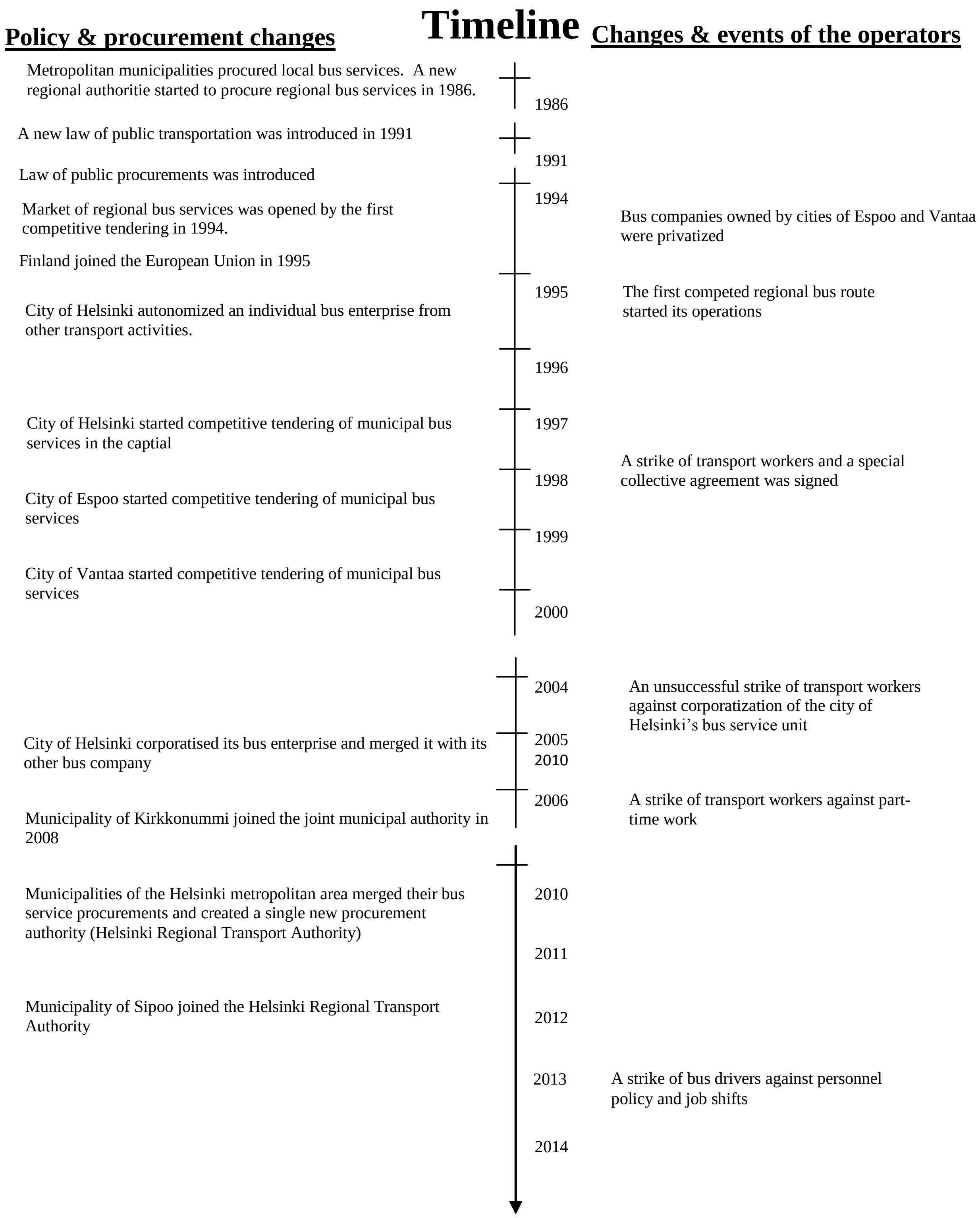

Fig. 2: The main phases of the development of markets of regional and local bus services in Helsinki Metropolitan Area.

The first competitive tendering was organized in 1994 and the first competition based service contracts came into effect in 1995. The winner of the first competitive tendering was a municipally-owned bus operator.

From the beginning of the market creation there have been critical comments and evaluations that private and municipal bus operators cannot compete in the market on equal terms. For example, private limited companies may face bankruptcy, but the municipal operators (i.e. municipal enterprises) are non-autonomous units of local governments and ineligible for bankruptcy proceedings. This situation became unbearable and the city of Helsinki had to introduce some organizational changes. First it differentiated the municipal bus unit from other municipal transport services and in 2004 the city council decided to corporatize its municipal bus enterprise as it illustrated in Figure 1. Since 2005, the unit has been a municipally-owned limited company.

4.2. Cost savings of Local Authorities

In the first round of competing bids, the price levels of delivery costs of the regional bus services fell 33-34 percent in 1994. There was a dramatic reduction in the contract prices and it has long-term consequences on the market. On one hand, this was a great success for the supporters of the public choice theory, since the theorems of the theory could be verified in practice. On the other hand, the first competitive bidding delivered the biased results as it was based on careless planning, since the competitive tendering represented only a fragmental share of the markets. The municipal operator, who won the competition, had its most revenues from non-competitive services, which gave an opportunity to use its monopoly returns as cross subsidies in order to support unsustainable bidding prices as they were possibly under actual production costs.

The annual savings of public expenditures of the procuring municipal joint authority from 1995 to 2008 are presented in Figure 2. First years savings were around 5 million €. After that annual savings were bigger ones, because the proportional share of competed bus services rose. The biggest annual savings around 21 million € were achieved in 2000.

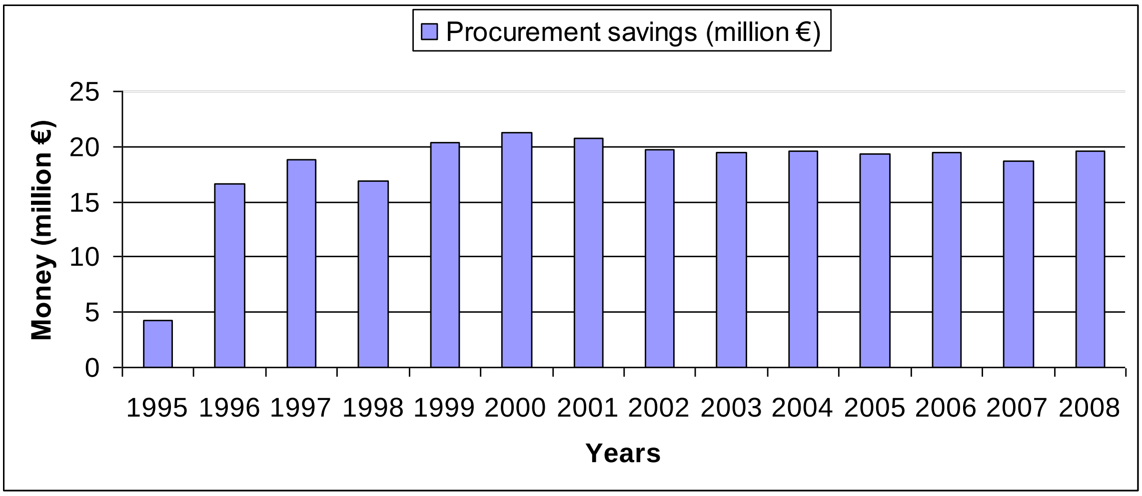

Fig. 3: Absolute annual savings of public spending of metropolitan regional bus services 1995-2008.

The city of Helsinki started competitive tendering of local bus services in 1997 and the cost savings of the first bidding round were 17.4 percent. It is clearly less than in regional bus services, but due to the threat of competition the contract prices were reduced by negotiations before competitive tendering was introduced. The city of Espoo organized the first competitive tendering in 1998 and the city of Vantaa one year later. Their savings were nearly 31 percent [14]

4.3. Economic Effects of Competitive Tendering on the Bus Operators

Before the creation of the competitive market bus operating business was a quite reasonable source of revenues. The negotiated contract prices were not tested by competitive markets at all and the bus operators could ask substantial compensations from their services. Consequently it gave the bus operators an opportunity to be less effective. It was typical the negotiated contract provided such compensations that the bus operators had EBITDA-% (i.e. Earnings from operations before interest, taxes, depreciations and amortizations to Net Sales) between 25 and 40, which are very high values in labor intensive service businesses of any kind [15]

The implementation of the competitive tendering of the Helsinki metropolitan area bus services has changed the business environment of bus operators significantly. To analyze the economics effects of that change to the bus operators, we made ratio analysis for the biggest bus operators in the Helsinki metropolitan area over ten years period (1998 – 2007). The data-set from 1998 to 2004 comprises four operators: Concordia Bus Finland, Veolia Transport Finland, HKL- Bussiliikenne and Suomen Turistiauto. However, at the end of the year 2004, city of Helsinki decided to merger two bus operators, HKL Bussiliikenne and Suomen Turistiauto, in which it held a majority of shares. The new operator, Helsingin Bussiliikenne Company, began operations on January 1, 2005. Hence, over the period 2005-2007 our data-set consist of three bus operators.

The ratio analysis is done as follows. First, we calculated individual key figures for the individual bus operators over the period 1998-2007. Then we calculated mean values for each ratio and these mean values are reported in Table 1. Our analysis provided information about three areas of financial performance, named profitability (panel A), leverage (panel B) and productivity (panel C). Profitability reflects the firm ́s ability to produce a product or service at a low cost or a high price. Leverage is related to the extent to which a firm relies on debt financing rather than equity. Productivity ratios are constructed to measure how effectively the firm’s assets are being managed [16].

The profitability ratios in table 1 panel A show that the average profitability of the four biggest bus operators has gone down dramatically. The EBITDA-% has been established below 5 percent level. In addition, the average EBIT-% (=Earnings from operations before interest and taxes to Net sales), which show the operational profit margin after depreciation and amortization, has been negative since 2000. It indicates that on the average operational earnings are not enough to cover replacement investments.

Negative return on capital employed (ROCE) and shareholders ́equity (ROE) is illustrated in Figure 4. That poor development of capital ratios signifies that the bus operators have consumed they own assets and a proportional share of debt has risen in their balance sheets.

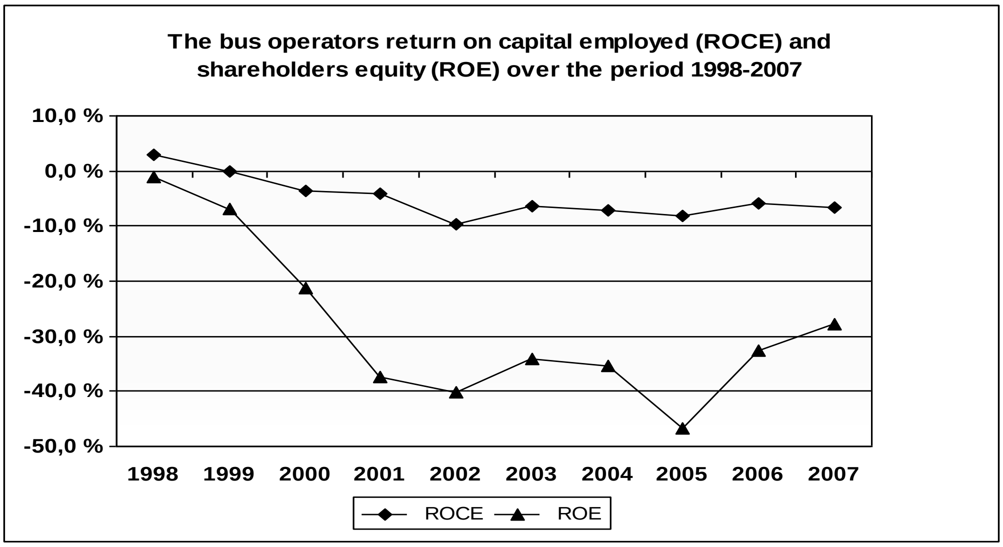

Fig. 4: Development of the bus operator’s return on capital.

More a company has its own equity, more there is buffer for business losses. Table 1 panel B presents that the average equity ratio (=Total equity to total assets) of the biggest bus operators weakened during to competition by around 16 percentage units from 1998 to 2007. Similar, the bus operator’s average Debt-to-Equity (D/E) ratio increased from the level of 1.92 in 1998 to 4.52 in 2007. That substantial increase in debt in balance sheet has caused large financial difficulties for bus operators. Thus, the owners (shareholders) have been constrained to allocate more capital to bus operators by issuing new equity in 2004 and 2006 or grant subordinated loans to them.

Productivity ratios in table 1 panel C suggest mixed findings. The bus operator’s average net sales/employee increased from the level of 52.90 in 1998 to 67.01 in 2007. It indicates that the employer’s productivity has improved during the period. At the same time, however, the ratio added value/personnel costs have decreased from 1.30 to 1.07 indicating decreases in employers' productivity.

Table 1: Some key ratios for bus operators in Helsinki metropolitan area over the period 1998 – 2007

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
(A) Profitability										
EBITDA	14,9 %	12,6 %	9,2 %	7,3 %	5,9 %	5,6 %	4,6 %	4,0 %	3,6 %	4,0 %
EBIT	2,0 %	1,0 %	-3,9 %	-3,5 %	-3,0 %	-3,4 %	-4,1 %	-3,6 %	-2,8 %	-2,3 %
Net profit margin	-0,4 %	-2,7 %	-6,4 %	-6,1 %	-5,5 %	-5,6 %	-5,6 %	-4,4 %	-3,9 %	-3,3 %
ROE	-1,1 %	-6,8 %	-21,3 %	-37,5 %	-40,3 %	-34,1 %	-35,3 %	-46,7 %	-32,5 %	-27,8 %
ROCE	3,0 %	0,0 %	-3,7 %	-4,0 %	-9,6 %	-6,4 %	-7,1 %	-8,1 %	-6,0 %	-6,7 %
(B) Leverage										
Equity ratio	34,2 %	34,2 %	30,3 %	26,0 %	20,4 %	18,2 %	20,0 %	21,5 %	24,2 %	18,0 %
D/E- ratio	1,92	1,92	2,30	2,85	3,91	4,49	4,01	3,66	3,13	4,56
(C) Productivity										
Employees	2 556	2 684	2 664	2 900	3 127	3 047	3 078	2 515	2 936	2 880
Net sales per employee (EUR 1000)	52,90	54,50	51,80	56,00	53,41	57,07	55,83	72,52	63,83	67,01
Added value per personnel expenses	1,30	1,20	1,20	1,10	1,10	1,09	1,08	1,07	1,06	1,07

Note: The ratios are calculated according to recommendations of the Committee for Corporate analysis [17] as follows: **EBITDA** = Earnings from operations before interest, taxes, depreciations and amortizations/Net sales. **EBIT** = Earnings from operations before interest and taxes/Net sales. **Net profit margin** = Net income or loss/Net sales. **ROCE** = Return on capital employed [=Net profit margin/ (Average equity + Interest bearing liabilities during the financial year)]. **ROE** = Return on shareholders' equity (=Net profit margin/Average equity during the financial year). **Equity ratio** = Total equity/total assets. **D/E ratio** = Total debt/total equity. **Employees** = Average number of employees during the financial year. **Net sales per employee** = Net sales in thousands euro/average number of employees during the financial year. **Added value per personnel expenses** = Added value (= EBITDA + personnel expenses - divestment gains)/personnel expenses.

Staff costs represent the biggest cost share of the bus operators. Due to competitive tendering, the bus operators have been forced to make some redundancies and cut back administrative personnel and garage staff. Instead of these negative consequences and somehow surprisingly, the competitive tendering has not reduced the job opportunities of bus drivers, because the population of the metropolitan area has grown and municipalities have been forced to increase public transport services. However, we found out from interview data that the experiences of uncertainty and urgency have increased among bus drives due to competition.

A special and remarkable problem of the bus drivers have been that after the bus operators have lost a competitive tendering the drivers have been forced to change their jobs as they have been hired by the operator who has won the bidding. At the beginning of the market creation, it was called into a question, is it compulsory for a winning bus operator to hire new drivers from the companies who have lost the competition and have the drivers' legal rights to keep their old benefits of the employment (i.e. salaries, holidays, etc). These kinds of open questions caused some strikes of bus drivers in the capital region. A trade union of transportation workers organized one successful strike in the late 1990s, and a new and special collective agreement gave these rights to the drivers.

4.4. Structural Changes of the Market of the Helsinki Metropolitan Bus Services

The opening of the market creates expectations that new entrepreneurs can enter the market and competition can limit the market shares of business rivals. Instead of these expectations, the structural changes of the market have been quite surprising in this case. In 1993, when the competitive tendering was started, the four biggest bus operators had 74 percent market share in the region. The total number of the operators was 16. The four biggest bus operators included two private companies, one municipal company and one municipal enterprise.

Because of competitive tendering small companies started to lose their market shares and the four biggest operators started to extend their market shares. During twenty years follow up time, only one new bus operator has been able to enter the market. The newcomer is a subsidiary company of state-own railway corporation. According to interviewees, a limited availability of deports has been one important explanation, why other bus operators have to been able to challenge the incumbent operator. Secondly, as the systematic competitive bidding makes it a very hard environment to run profitable bus operations the small external operators have not took the trouble to make bids.

	Years		
	1993	**2003**	**2011**
The market share of the four biggest bus operators	74 %	93 %	91 %
Total number of procurement units (i.e. procuring municipal authorities)	4 authorities	2 authorities	1 authority

Fig. 5: Changes of the market shares and the number of procurement agencies [18].

Figure 5 demonstrates how the market structure has evolved. The market shares have concentrated on the four biggest operators. Their market share was more than 90 percent in 2011. Some of these changes are results of merges as the operators have bought small operators. The market structures have also become more sluggish as the service contracts are made for five or seven years instead three year contract periods which were used in the early years of the marketization.

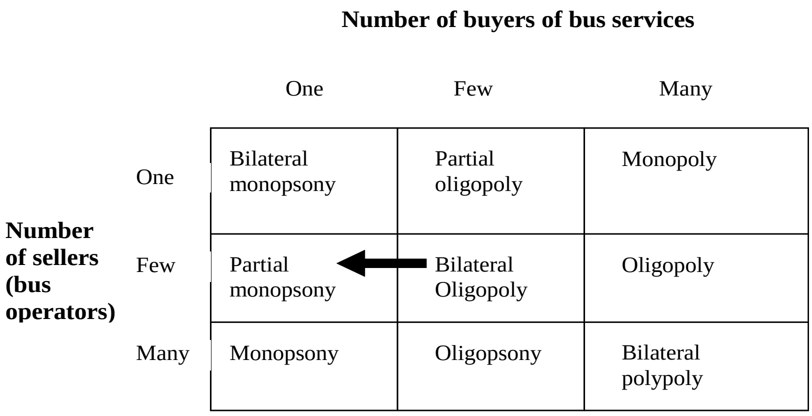

Fig. 6: A fundamental change of the market structure.

At the same time, when the four big operators have strengthened their market positions, there have been structural changes in the system of public procurements. Before the competition was started, there were four procurement agencies (i.e. three municipalities and one joint municipal authority). However, the local governments decided to give up their own procurements and transferred the duties of the organization of bus services to a single joint municipal transport authority. Figure 6 illustrates how the market structure has moved from a bilateral oligopoly to a partial monopsony.

The new joint metropolitan authority (the Helsinki Regional Transport Authority) was established in 2010. Since that time it has been the only procurement unit, who organizes competitive tendering, makes service contracts, and supervises the operators. During the follow up years of this research, the jurisdiction of the joint authority has also grown, since new local governments have joined in. The original joint municipal authority had only four member local governments, but the new joint authority has seven member local governments.

5. Conclusions

The market creation of the Helsinki metropolitan bus services has delivered hoped-for-results as it has generated remarkable savings on municipal expenditures. In this respect, the research findings of the case study are in line with the previous and international findings on competitive tendering. In the first round of competing bids, the price levels of delivery costs of the regional bus services fell 33-34 percent, but municipal savings have been shrinking during the years after the first competitive tendering as the bidding prices have gradually gone up in price. However, it is possible to conclude that the introduction of competitive tendering has been a favorable policy change so far, but this conclusion does not make possible to estimate how sustainable these economic benefits might be for local governments. Nevertheless, it is difficult to think that the local governments would want to return the old system of the bus services with the closed market and negotiated contracts.

The bus operators have been forced to improve their productivity, but the remarkable part of the efficiency savings have come down through the elimination of their gross margins. Before the market creation the bus operators were highly profitable, but the competition has ruined their profitable businesses and the operators have been struggling with severe viability problems for many years. The operators have made some redundancies and the labor unions have organized strikes which have caused unfortunate interruptions of the services. Furthermore, it can be concluded that the planning of the starting phase of competitive tendering was a failure. Only one bus route was put under a tendering, but all the other routes stayed out of competition. The winning operator was able to benefit from this by making underpriced bids balance them by making cross-subsidies.

Both the municipal and private operators have been producing bus services at the market. In the early years, there were many complaints about the unfair institutional settings of the quasi-market, but competitive neutrality of the created market has improved during the period of this follow up study. First, the cities of Vantaa and Espoo sold their municipal bus companies to private investors. Second, the city of Helsinki corporatized its municipal bus enterprise which nowadays has an organizational form of a limited company.

The market structure has developed unfavourably during the years of competition at least if it is evaluated form the perspective of a perfect competition. The four big bus operators have strengthened their positions by expanding their market shares as it has been highly difficulty for new bus companies to enter the market. The market structure has also become distorted on the purchasing side as the municipalities have stopped to independently organize such bus services which are needed inside the jurisdictions of the individual municipalities. Municipalities have transferred these duties to the joint municipal authority, which is nowadays the only procurement agency not only in the capital region (i. e. the Helsinki region) but also in many commuter towns close to the Helsinki region. A single procurement unit can develop a comprehensive urban transport system, but it may not be flexible to be responsive to changing local needs.

The case of the market creation of the Helsinki metropolitan bus has been a remarkable example for other big cities in Finland. For example, the fifth biggest city, the city of Turku imitated the Helsinki region very soon and organized the first competitive tendering in 1995. The third largest city, the city of Tampere has been slower as it has had a strong in-house bus service unit. In 2008, the city government made a fundamental policy change and started to create markets in the Tampere region by organizing the first competitive tendering. Contrary to the case of Helsinki, competitive neutrality has been questionable, since only private operators have been allowed to participate in the competitive tendering in the city.

6. References

[1] G. A. Boyne. Competition and Local Government: A Public Choice Perspective. *Urban* Studies, 1996, **33**(4-5): 703-721; G. C. Scott, G. C. *Government Reform in New Zealand.* Occasional Paper 140. Washington D.C.: International Monetary Fund, 1996.

[2] E. G. Furubotn and R. Rudolf. *Institutions & Economic Theory. The Contribution of the New Institutional*

Economics. Second edition. Economics, Cognition and Society. Ann Arbor: The University of Michigan Press, 2005.

[3] S.J. Bailey. Extenting competition and choice in English local government. *Kunnallistieteellinen aikakauskirja,* 2008, **36**(2): 136-149.

[4] J. Johnson. Privatization of Public Transportation. An analysis Using Forecasting to Predict the Financial Impact. In: L. Brewer (ed.). *Public Works Administration. Current Public Policy Perspectives.* Thousand Oaks, CA, Sage, 1997.

[5] I. P. Wallis and D. J. Bray. The contracting of urban bus services e Recent Australian developments. *Research in Transportation Economics*, 2014, **48** (48-61).

[6] W. Veeneman and d. de van Velde. Developments in public transport governance in the Netherlands: A brief history and recent developments. *Research in Transportation Economics*, 2014, **48** (41-47).

[7] A. Beck. Experiences with Competitive Tendering of Bus Services in Germany. *Transport Reviews,* 2011, **31**(3): 313-339.

[8] D. Kennedy. London bus tendering: a welfare balance. *Transport Policy*, 1996, **2**(4): 243-249.

[9] T. A. Mathisen, and G. Solvoll. Competitive tendering and structural changes: An example from the bus industry. *Transport Policy,* 2008, 15: 1–11. C. Nash and M. Volanski. Workshop report - Benchmarking the outcome of competitive tendering. *Research in Transportation Economics* 2010, **29** (41-47).

[10] . G. Bel, and A. Costas Antón. Do Public Sector Reforms Get Rusty? Local Privatization in Spain. *The Journal of Policy Reform.* 2006, **9**(1): 1-24.

[11] J-T. Bekken, F. Longva, N. Fearnley, and O. Osland. *European Transport / Tranporti Europei,* 2006, 33: 29-40.

[12] P. Valkama, O. Kallio, and J. Kankaanpää. Kuntapalvelujen kilpailuttamisen taloudelliset vaikutukset, II osa. Kunnat ja kilpailu –sarjan julkaisu nro 12. Kunnallisalan kehittämissäätiö.

[13] Helsingin Sanomat 15.12.1992. *Seutuliikenteen kilpailuttaminen lykkääntyy vuoteen* 1995.

[14] Liikennevirasto. *Pääkaupunkiseudun bussimarkkinoiden toimivuus. Talousteoreettinen tarkastelu kilpailuttamisen vaikutuksista pääkaupunkiseudun työssäkäyntialueen bussimarkkinoiden toimivuuteen ja kilpailun edellytyksiin – loppuraportti. Helsinki:* Liikennevirasto, 2012.

[15] P. Valkama, and J. Flinkkilä. *Pääkaupunkiseudun bussiliikenteen kilpailuttamisen talousvaikutukset.* Tampereen yliopisto. Hallintotieteen laitos. Hallintotiede 2003 A 32. 2003.

[16] L. Revsine, D.W. Collins and W.B. Jonson. *Financial reporting and analysis.* Pearson/Prentice Hall, 3rd edition, 2004.

[17] Committee for Corporate Analysis. *The Guide to the Analysis of Financial Statements of Finnish Companies.* Gaudeamus, Helsinki, 2005.

[18] P. Valkama, and J. Flinkkilä. *Pääkaupunkiseudun bussiliikenteen kilpailuttamisen talousvaikutukset.* Tampereen yliopisto. Hallintotieteen laitos. Hallintotiede 2003 A 32. 2003. Liikennevirasto. *Pääkaupunkiseudun bussimarkkinoiden toimivuus. Talousteoreettinen tarkastelu kilpailuttamisen vaikutuksista pääkaupunkiseudun työssäkäyntialueen bussimarkkinoiden toimivuuteen ja kilpailun edellytyksiin – loppuraportti.* Helsinki: Liikennevirasto, 2012.