

# **IS CONTRACTING OUT STILL THE GREAT PANACEA? A META-ANALYSIS OF INTERNATIONAL STUDIES ON COSTS AND SERVICE QUALITY**

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**FIRST DRAFT, PLEASE DO NOT QUOTE, ALL COMMENTS ARE WELCOME**

## **Abstract**

Following a broader trend towards marketization of public service delivery, over the course of the past decades contracting out has increasingly been utilized across a broad range of Western countries. However, in spite of growing usage of contracting out there are still a limited number of studies that attempt to provide systematic overviews of the scientific evidence on price and quality consequences. This paper presents the results from a meta-analysis of all international studies on price and quality effects of contracting out published from 2000-2014. We conducted a comprehensive systematic search for all studies on contracting out and found 43 published studies in the period. There are three main findings with regard to the documented economic effects of contracting out: 1) cost savings from contracting out have been decreasing over time and are much lower in the last part of the period; 2) contracting out in technical services have generated larger cost savings than social services where transaction costs are comparatively higher; 3) economic effects from contracting out have been almost twice as large in Anglo-Saxon countries compared with countries in central and northern European. With regard to service quality we find few studies that assess this element in a comprehensive manner, and most studies treat service quality superficially or not at all. We conclude that firmer evidence concerning service quality and transaction costs is also needed in order to evaluate the overall outcomes of contracting out.

*Key words:* Contracting out, meta-analysis government services, production costs, service quality.

## **INTRODUCTION**

The private delivery of government-funded services by means of contracting out constitutes one of the major alternatives to public sector provision of government services (Domberger & Jensen, 1997; Hodge, 2000; Rostgaard, 2006; Stolt, Blomqvist & Winblad, 2011). International research has generally demonstrated cost savings by contracting out, although with significant variation. Among the most frequently quoted studies are Domberger and Jensen (1997), which concludes that contracting out can deliver savings of around 20 percent at a similar level of service. Similarly, significant savings are reported in studies by Borchering, Pommerehne & Schneider (1982). In a review of more than 50 studies from the USA, Australia, Germany, Switzerland and Canada, Savas (1987) evaluates empirical studies primarily from the U.S. and also find significant cost savings in most studies.

Somewhat smaller effects are found in a comprehensive survey carried out by Graeme Hodge (1998, 2000). The study finds savings in the range of 6-12 percent when taking transaction costs into account. Hodge also points to considerable variation across different task (sector) areas and concludes that the evidence is clearly strongest in technical areas such as waste management and cleaning, while there is more doubt about the effects on other service areas (Hodge 1998: 105). Based on these results, Hodge writes that "expecting contracting to be a panacea for all public services, though, would be foolish" (Hodge 2000: 246-247). In another widely quoted study Boyne (1998) examines almost 40 studies from the UK and USA. This study also finds cost savings, although Boyne is very critical of the methodology and data used in many of the studies reviewed. Boyne is particularly critical of the inadequate measurement of quality in many studies of contracting out effects.

The mentioned research overviews have primarily been based on studies of English and American conditions, and the emphasis has been on technical sectors such as waste management and cleaning, while social services such as health, education and care of the elderly are much less documented. Furthermore the assessed literature in previous meta-analyses was primarily published in the 1980s and early 1990s, whereas more recent studies have pointed to more mixed consequences of contracting at the general level (Hartman et al., 2011; Petersen & Hjelmar, 2013) and within specific sectors, especially in labor-intensive welfare services (Eggleston et al 2007, Hollingsworth 2008). We expect that an updated meta-analysis will adjust the picture of effects of contracting out for several reasons. Firstly, we now have experiences from a longer time span, and many

contractual relationships have moved from first generation to second, third or fourth generation contracts. Both public organizations and contractors have thus gained experience, and we can expect that markets have matured in a number of areas. Secondly the use of contracting has expanded in scope so that many new areas including labor-intensive service sectors are now subject to contracting. Thirdly the scope and volume of contracting out has increased, so we would expect a larger body of publications covering more sector areas. Fourthly, we expect recent publications to provide a more balanced picture of the relationship between economic gains and service quality than some of the early studies. There is this need for an updated assessment of the evidence relating to effects of contracting out in recent studies. The inquiry in this paper will be based on the following research question.

*RQ: Does the evidence presented in research papers from international scientific journals from 2000-2014 show that contracting out has led to cost savings and/or improved service quality?*

The paper proceeds as follows. The next section presents a review of measuring approaches for assessing effects of contracting out based on previous studies and recent theoretical discussions about pros and cons of contracting out. Based on this review we develop more specific questions for assessing the scientific evidence for effects of contracting out. Subsequently, the details of our data collection and assessment methods are presented. This is followed by a presentation of the results of the meta-analysis with a focus on the consequences for price and quality, differences in documented effects within technical and social services. In the penultimate section we discuss the findings and in the final section a conclusion is provided.

## **ASSESSING THE EFFECTS OF CONTRACTING OUT**

Theoretical claims for positive effects of contracting out the delivery of public services typically revolve around either an ownership or a competition argument (Blom-Hansen 2003, Domberger and Jensen 1997). The *ownership* argument states that public sector agencies lack incentives to perform efficiently; they often have broad and ill-defined public service objectives; and they have no bankruptcy constraint, and therefore can go on performing at sub-optimal levels without risking to go out of business. Furthermore public organizations are not accountable to shareholders or private owners focusing on profits and maintaining a positive bottom line. On the contrary public

organizations have multiple stakeholders, and often operate in contexts with heterogeneous and conflicting objectives (Moore, 1995), which may lead to economic inefficiencies.

The decision structure of public organizations is ultimately linked to political arenas, emphasizing deliberation and procedural imperatives. This may lead to less agile decision-making and lower willingness to take risks and pursue business opportunities than in private sector organizations. The *competition* argument states that private sectors producers are forced by competitive pressure to optimize efficiency, while public organizations operate in a monopoly situation and thus with the same risk of inefficiencies as known from private monopolies. Lack of competitive pressures means that public managers are unable to measure the efficiency of their organizations against other similar organizations, and that decisions on resource allocation and survival of the organization is left to public decision makers that are unable to rely on the information about demand and efficient supply that markets can provide.

There are thus a number of generic arguments that would lead us to expect positive economic effects of contracting out public services. However, you can also find arguments that can lead to modification of such positive expectations. The first comes from the theory on transaction costs and underlines the importance of asset specificity and measurability of the service that is to be contracted out (Brown and Potoski, 2003; Hefetz and Warner, 2011) and that transaction costs should be included when calculating the net benefits. It is argued that economic benefits are more likely if the service or product can be clearly defined and with unambiguous measures of quantity and quality. Otherwise the administrative and legal “transaction” costs of writing up the conditions for contracting out; evaluating the offers; monitoring the delivery and possibly sanctioning cases, where private providers do not live up to expectations can be too high, and the total economic benefits low or even negative. These arguments are intuitively plausible, but should be accompanied by the recognition that there are also costs associated with administering production of service in-house within the public sector. Such costs should ideally be weighed up against the transaction costs of contracting out.

A number of other possible secondary (derived) costs have been mentioned in the literature. They revolve around different situations where the competition among private providers in practice is less perfect than assumed in market theory or the consequences of competition lead to unacceptable outcomes. The first deals with the risk that private providers can go bankrupt and that the public principal incurs a cost of maintaining a backup or of being forced to step in or choose another

private provider in a situation of weak purchaser power. Secondly, there may be costs associated with lock-in to particular private providers, where transaction costs of switching can be perceived as higher than paying an extra price to the “known” private provider. This reduces the competition in practice and can lead to situations where private providers may see strategic benefits in “dumping” prices in a first bidding round in order to gain a foothold for subsequent rounds where competitors may have dropped out of the market and prices can be raised. Thirdly, there may be costs associated with adverse risk selection if the private provider is able to select the “easiest” cases within the contract. Fourthly, there is a risk of private providers “skimping” on quality, particularly in cases where this is not clearly defined in the contract, or it is difficult to monitor in practice. One can imagine this leading to extra costs for instance if maintenance is not performed at a sufficient level, poorer materials are used or treatments are below standard and require follow up within the public sector.

However, there is another side to this discussion about quality. It may be that reduced quality is perfectly acceptable for the public principal, if it is accompanied by reduced costs. In other words the public principal may accept a tradeoff between quality and cost, and may consciously use contracting to reduce cost while at the same time accepting a reduction in quality. Regardless of the motives of the public principal it remains an empirical question whether economic benefits of contracting out are realized and how quality is affected. Combining the two dimensions of cost and quality we get a number of different potential outcomes of the studies.

**Table 1. Outcome matrix for cost and quality outcomes of contracting out.**

Higher quality/ higher cost	Higher quality/ lower cost
Lower quality/ higher cost	Lower quality/ lower cost

In the following sections we will present results from our review of the international scientific literature from 2000 to 2011 based on the two dimensions. We will assess the empirical results

reported in the studies in light of the following questions derived from the brief review of theoretical arguments.

- a) What is the general picture across sectors and countries in terms of effects on costs?
- b) Are there differences in cost effects across different sectors and countries?
- c) Do the studies account for quality developments, and do results in regards to quality lead us to modify the general picture?
- d) Do the studies account for transaction costs and other secondary costs, and does this lead us to modify the general picture?

## **METHODS FOR COLLECTING AND ASSESSING STUDIES**

Our meta-analysis is based on a methodical approach that is inspired by the EPPI-Centre's methodology (Gough 2004).<sup>1</sup> A research review may include a statistical meta-analysis, implying that new calculations of effect are made based on the data included in the reviewed studies. We conduct such a meta-analysis in this paper and furthermore test a number of variables that explain differences in outcomes across time, service with high and low asset specificity, and geographical regions. The specific approach to collecting publications was to conduct a search of all studies in relevant databases which seemed to answer the research question, meet the inclusion criteria and not be subject to exclusion criteria.

The following databases were used in the screening of relevant studies: Social Sciences Citation Index, Sociological Abstracts, Social Services Abstracts, ERIC (Education Resources Information Center), PILOT Database, Campbell Library and Cochrane Library using the following terms: contracting, contracting out, outsourcing, tender, competitive tender, competitive bidding, marketisation/marketization and public. Based on this screening, we examined the individual publications and made an assessment of whether those publications answered the research question and whether the publications met the inclusion criteria and were not subject to exclusion criteria. The specific inclusion criteria were: outsourcing in the public sector in western countries (Europe,

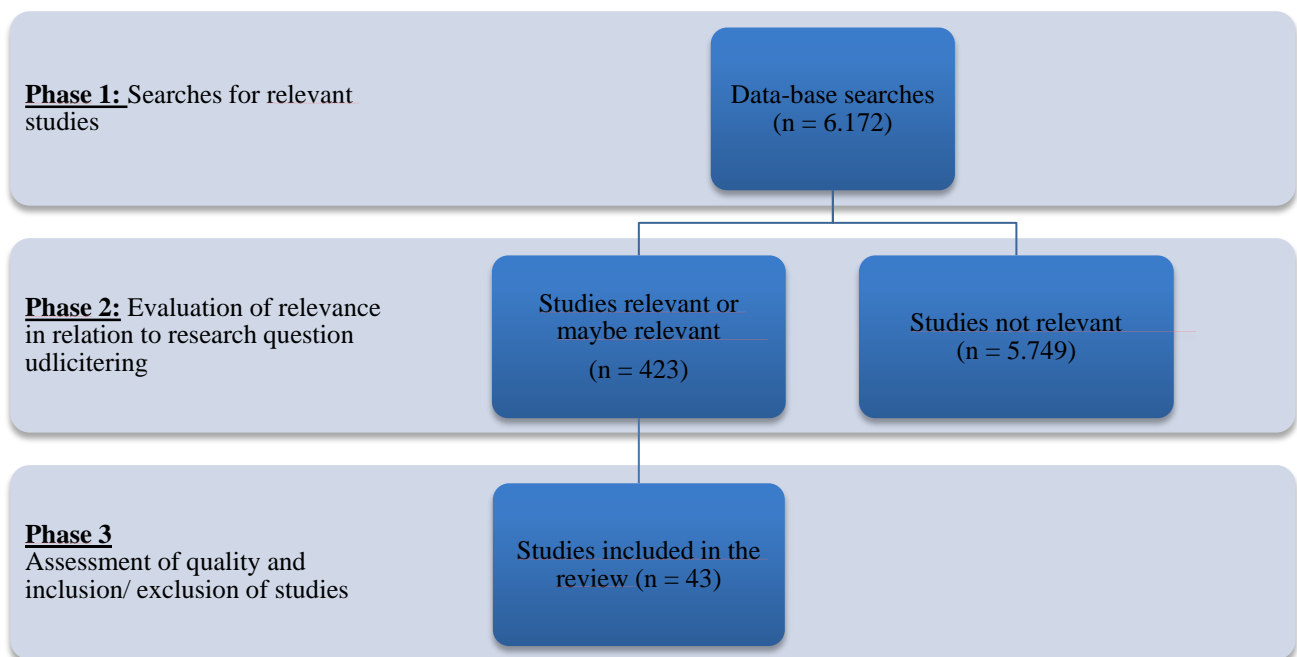
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<sup>1</sup> The EPPI-Centre is a British research center that has developed a methodology, which is broader in its scope than is the case for more traditional research reviews (e.g Cochrane or Campbell). This implies that peer-reviewed research as well as not peer-reviewed research may be included in the review, and it implies that both quantitatively and qualitatively-based studies can be included.

North America, Australia, New Zealand, Japan, Korea) and publication year from 2000 until 2014. Exclusion criteria were: a limited study with very little generalization degree, studies focusing on other forms of public-private partnership (PPP, PPI, free-choice models, privatization), and studies focusing on the process of an outsourcing.

The selected publications were subsequently assessed in order to determine whether the publications met the general quality criteria outlined below. This led us to discard a number of studies due to methodological and data weaknesses. The final set of 43 publications were then evaluated according to their reported results in terms of economic effects, quality effects and whether they included considerations of transaction cost and other secondary costs. In comparison Hodge’s much cited meta-study from 1998 was based on 28 publications.

**Figure 1. Searches and inclusion of studies in the meta-analysis.**



## OVERVIEW OF STUDIES IN THE META-ANALYSIS

This section presents the descriptive findings from the meta-analysis while the second results section presents the findings from the explanatory meta-analysis. Table 2 below provides an overview of the 43 studies that were included in the meta-analysis.

**Table 2. Overview of the 43 studies included in the meta-analysis.**

<b>Study</b>	<b>Country</b>	<b>Service area</b>	<b>Data and sample size</b>	<b>Effects for costs</b>	<b>Effects for service quality</b>
Kavanagh and Parker (2000)	Great Britain	Technical area	Qualitative data (case study)	Reduction of costs (12-25% cheaper)	No results
Reeves and Barrow (2000)	Ireland	Technical area (waste management)	Quantitative data (survey data), qualitative data (case studies)	Reduction of costs (45% cheaper)	Results included
Keane, Marx and Ricci (2001)	USA	Social services (public health)	Quantitative data (survey data)	Reduction of costs	Results included (quality increased)
McDavid (2001)	Canada	Technical area (waste management)	Quantitative data (survey data)	Reduction of costs (20% cheaper)	Results included
Camp and Gaes (2002)	USA	Social services (prisons)	Quantitative data (survey data)	No results	Results included (quality decreased)
Blom-Hansen (2003)	Denmark	Technical area (road maintenance)	Quantitative data (registry data)	Reduction of costs (14% cheaper)	Results included
Dijkgraaf and Gradus (2003)	Netherlands	Technical area (waste management)	Quantitative data (survey data)	Reduction of costs (15% cheaper)	Results included
Ohlsson (2003)	Sweden	Technical area (waste management)	Quantitative data (registry data)	Increasing costs (6% more expensive)	Results included
Duggan (2004)	USA	Social services (health)	Quantitative data (register data N=1.2 mio. patients, N=3.73 mio. infants)	Cost increases (17 % more expensive)	Quality decline (declined with 2 %)
O'Toole and Meier (2004)	USA	Social services (education)	Quantitative data (registry data)	Reduction of costs	Results included
Park (2004)	Korea	Technical area (water services)	Quantitative data (registry data, survey data)	Reduction of costs (21% cheaper)	Results included
Puig-Junoy and Ortún (2004)	Spain	Social services (public health)	Quantitative data (registry data, survey data)	Increasing costs (10-15% more expensive)	No results
Brudney et al. (2005)	USA	Technical area, social services	Quantitative data (survey data)	No significant difference	Results included
Lazarus and McCullough (2005)	USA, Minnesota	Technical (school bus transport)	Registry data for school year 1999-2000 and survey data (2001) for 343 school districts	Public are more cost efficient (10 % marginal cost difference)	Not measured
Bel and Costas (2006)	Spain	Technical area (waste management)	Quantitative data (registry data, survey data)	No significant difference	Results included

Pina and Torres (2006)	North America, South America, Europe, Asia, Africa	Technical area (public transport)	Quantitative data (registry data)	Reduction of costs	No results
Bekken, Longva, Fearnley and Osland (2006)	Norway	Technical (bus transport)	Registry data, pooled time-series data (1992-2005) for 19 counties	Reduction of costs (1 %-point increase in level of competitive tendering leads to 0.1 % cost reduction)	Not measured
Christoffersen, Paldam and Würtz (2007)	Denmark	Technical area (cleaning)	Quantitative data (registry data)	Reduction of costs (30% cheaper)	No results
Dijkgraaf and Gradus (2007)	Netherlands	Technical area (waste management)	Quantitative data (registry data)	Reduction of costs (14-17% cheaper)	No results
Gilmer (2007)	USA	Social services (mental health)	Quantitative data (registry data)	Reduction of costs (20% cheaper)	Results included (quality increased)
Kuhlmann (2008)	Germany, France	Technical area, social services	Quantitative data (survey data), qualitative data (case studies)	No significant difference	Results included
Lalive and Schmutzler (2008)	Germany	Technical services (railways)	Registry data (n=80)	No results	Improved quality (increased frequency)
Chong et al., (2009)	Australia	Social services (public sector audits)	Quantitative data (registry data, survey data)	Increasing costs	Results included
Purse (2009)	Australia	Social services (employment)	Quantitative data (registry data)	Increasing costs	No results
Leland and Smirnova (2009)	USA	Technical (bus transport)	Registry data (2004-2005) for 545 governments	No cost difference	No service quality difference
Tiemann and Schreyogg (2009)	Germany	Health (hospitals)	Register data (2002-2006), n=1,046	Increasing costs (1,8-2,1 % more expensive)	Not measured
Bae (2010)	USA	Technical area (waste management)	Quantitative data (registry data)	No significant difference	No results
Gilmer (2010)	USA	Social services (mental health)	Quantitative data (registry data)	Reduction of costs (31% cheaper)	
Iseki (2010)	USA	Technical area (public transport)	Quantitative data (registry data)	Reduction of costs (6-8% cheaper)	No results
Stolt m.fl. (2011)	Sweden	Social services (elder care)	Quantitative data (survey data)		
Thompson (2011)	USA	Technical area (school busses)	Quantitative data (register data)	Increasing costs (15,8-20,7 % more expensive)	Results included (quality decreased)
Walter (2011)	Germany	Technical services (public transport)	Registry data (n=254)	Reduction of costs (0,7-1,9 % cheaper)	Not tested
Butz (2012)	USA	Social services (social care)	Quantitative data (registry data)	No results	No significant difference

			data)		
Tuominen, Eriksson & Vahlberg (2012)	Finland	Social services (dental care)	Quantitative data (register data)	Increasing costs (14,4 %)	No results
Benmarker m.fl. (2013)	Sweden	Social services (employment services)	Quantitative data (registry data)	No significant difference	Results included (quality increased)
Boitani m.fl. (2013)	9 European countries	Technical services (public transport)	Quantitative data (budget data)	Cost reduction (not specified)	No results
Garcia-Valinas m.fl. (2013)	Spain	Technical area (water treatment)	Quantitative data (budget data)	Mixed cost effects	No results
González-Gómez m.fl. (2013)	Spain	Technical area (water treatment)	Quantitative data (budget data)	No cost difference	No results
Mouwen og Rietveld (2013)	Netherlands	Technical area (bus operation)	Quantitative data (survey data)	No results	No significant difference (user satisfaction)
Rho (2013)	USA	Social services (schools)	Quantitative data (registry data)	Reduction of costs (5% cheaper)	Quality improvement (2 %)
Scheffler m.fl. (2013)	Germany	Technical area (bus operation)	Quantitative data (registry data)	Reduction of costs (5% cheaper)	No results
Stanley et.al (2013)	UK	Social services (orphanages)	Survey and case studies	No results	Results included (mixed results)
Laun & Thoursie (2014)	Sweden	Social services (rehabilitation)	Quantitative data (registry data)	No significant difference	Results included (no significant difference)

## **Findings relating to costs**

In the review of international studies we have identified 3 studies with an “excellent” quality in terms of the employed research design, data and measurement techniques (Reeves & Barrow 2000; Bel & Costas 2006; Bel, Fageda and Warner 2010). All three studies deal with contracting out of waste management. One study shows economic savings up to 45 percent (Reeves & Barrow 2000) while the other two studies show more mixed economic effects (Bel & Costas 2006; Bel, Fageda and Warner 2010). Further, the study by Bel and Costas (2006) conclude that observed cost savings seem to be decreasing over time. Among the remaining 24 international studies that have been assessed as “good” quality, there is relatively large spread in the calculation of the economic effects. There are 11 studies that document economic savings (Kavanagh & Parker 2000; Reeves & Barrow 2000; McDavid 2001; Gustafsson & Busch 2002; Dijkgraaf & Gradus 2003; Park 2004; Jensen & Stone Cash 2005; Pina & Torres 2006; Gilmer 2007; Iseki 2010; Longva & Osland, 2010). The magnitude of the reported savings varies from 5 to 50 percent, with the majority being between 5 and 20 percent.

Five studies calculate the economic effects of contracting out as negative. Of these, only 2 studies quantified the negative economic consequences. Ohlsson (2003) calculates the cost increase to about 6 percent in the waste management area, while O'Toole & Meier (2004) in education concludes that a 1 percentage point increase in contracting out of ancillary services such as cafeteria, cleaning, building operation, etc. provides a 0.25 percent point decrease in funds spent on actual teaching. The other three studies that report negative economic effects, did not quantify these details (Puig & Ortún 2004, Chong et al. 2009; Purse 2009). We also identified 4 studies that calculate mixed economic effects (Harding 2001; Keane, Marx, & Ricci 2001; Brudney et al. 2005; Kuhlmann 2008). The mixed results occur, for example, because the studies had collected several underlying cases that showed diverging effects, or because they were based on surveys with government leaders, where some respondents reported lower costs, while other leaders responded that contracting out had led to unchanged or higher cost. The mixed results of these studies may indicate that even within the same activity area and country rather mixed effects of contracting out can be found. Finally our dataset includes 5 studies showing the economic effects as unchanged (Dijkgraaf & Gradus 2007; Bel & Warner 2008; Davies 2008; Lundahl et al. 2009; Bae 2010), while two studies did not have sufficient data to permit that the economic impact can be measured (Camp Geese –Korrekt??? & 2002; Bel, Fageda & Warner 2010).

The general picture is thus that a number of studies report savings, among them the two “excellent” quality studies, and several studies building on several underlying cases. Yet, there are also a number of studies reporting mixed or negative economic effects. The overall picture is thus mixed and with indication of significant variation in the reported results, which is further examined in the explanatory meta-analysis in the next results section.

### **Differences between technical services and welfare services**

The two “excellent” quality studies are both within technical activity areas (waste management) (Reeves & Barrow 2000; Bel & Costas 2006). The study of Reeves and Barrow (2000) deals with the collection of waste from private households in Ireland in the period 1993-1995 and shows that contracting out itself can lead to savings of up to 45 percent - the highest savings are achieved in the municipalities where competition for with contracting out was strongest. The study concludes that waste - and the technical sector broadly speaking - is easier to outsource because the specification of the outsourced service is relatively simple; the demand is relatively stable; market conditions are relatively transparent; and startup costs are low. The article by Bel & Costa (2006) is also a study of household waste management based on cases from Spain in the period 2000-2002. Based on data collection and a literature review this study demonstrates economic savings in the area of contracting out, but importantly with a tendency that the cost savings are falling over time.

26 international studies have been assessed as “good” quality. Out of these are 17 studies that address the technical areas, while 5 studies deal with both technical and soft (social service) areas, while four studies deal exclusively with the social service areas. Ten of the 18 studies on the technical areas deal with waste management and there is thus a clear dominance of this particular area in the international literature on the economic effects of contracting out. This fact is further underlined by the fact that the 2 most satisfactory studies that have been discussed above, were also in the waste area.

The 17 studies that address the technical fields generally show mixed results in relation to the economic impact of contracting out although with a majority reporting positive economic effects (Kavanagh & Parker 2000; McDavid 2001; Gustafsson & Busch 2002; Dijkgraaf & Gradus 2003; Ohlsson 2003; O'Toole & Meier 2004, Park 2004; Pina & Torre 2006; Dijkgraaf & Gradus 2007; Bel & Warner 2008; Chong et al. 2009; Purse 2009; Bae 2009; Lundahl et al. 2009; Bel, Fageda & Warner 2010; Iseki 2010; Longva & Osland 2010). Some studies show savings within a relatively

broad range of approx. 6-50 percent (Kavanagh & Parker 2000; McDavid 2001; Gustafsson & Busch 2002; Dijkgraaf & Gradus 2003; Park 2004; Pina & Torres 2006; Iseki 2010, Longva & Osland, 2010). These studies mostly refer to waste management, water supply and bus services. There are also other studies in the waste management area, which show mixed results and no clear effects (Dijkgraaf & Gradus 2007; Bel & Warner 2008; Bae 2009; Bel, Fageda & Warner 2010). Finally, there are a number of studies that show an increase in costs in the area (about 1-6 percent) after contracting out (Ohlsson 2003; O'Toole & Meier, 2004; Chong et al. 2009; Purse 2009). These studies are distributed across multiple sectors (waste collection, cleaning, workers' compensation cases, etc.). All in all the evidence can therefore not be considered unambiguous concerning the positive economic effects of contracting out, although there is an overweight of studies which primarily document the savings from a service that is either documented or presumed to be approximately unchanged after contracting out.

The five studies that both address the technical and the soft areas show mixed results in terms of economic effects of contracting out (Harding 2001; Camp & Geese 2002; Brudney et al. 2005; Jensen & Stone Cash 2005; Kuhlmann 2008). Among these studies is a literature study (Jensen & Stone Cash 2005) which contains a review of numerous studies in Western countries, which have outsourced public services. This review shows that contracting out in general leads to financial savings. The four studies that address the social welfare areas also show mixed results (Keane, Marx, and Ricci 2001; Puig & Ortún 2004, Gilmer 2007; Davies 2008). The study of Keane, Marx, and Ricci (2001), and the study of Davies (2008) show mixed or unchanged results, the study of Puig and Ortún (2004) shows an increase in costs after contracting out, while the study of Gilmer (2007) shows a cost savings of around 20 percent. Three of the four studies deal with health care and the fourth with employment, which means that the total number of studies on social services is low and that many social services are not documented in published articles. With this important caveat, the general picture is that the evidence for positive economic effects is stronger in technical areas than in social welfare areas.

### **Findings relating to outcomes for service quality**

Any assessment of the economic effects of contracting out should take developments in the quality of the service delivered before and after outsourcing into consideration. The general picture of the survey is that the studies included have much poorer documentation of the effects of quality than on costs. The studies that do quantify qualitative effects indicate studies show mixed or unchanged

effects on the quality (eg, Keane, Marx, and Ricci 2001; Dijkgraaf & Gradus 2003; Pina & Torres 2006; Kuhlmann 2008; Longva & Osland 2010), but many studies do not report quality measures at all. This must be regarded as significant shortcoming of this field of research (Kavanagh & Parker 2000; eg Puig & Ortún 2004; Bae 2010; Iseki 2010).

We have identified four studies that calculate the qualitative effects as primarily negative, without the negative effects quantified closer (Camp & Geese 2002; O'Toole & Meier, 2004; Jensen & Stone Cash 2005; Purse 2009), and 3 studies, which calculates effects on the quality as positive, but also without a detailed quantification (Park 2004; Brudney et al. 2005; Gilmer 2007). Based on the international studies, it is therefore not possible to determine whether contracting out generally results in similar, improved or degraded quality of public service delivery. There are very few studies that systematically combine economics and quality aspects in a comprehensive assessment of the effects of contracting out. Exceptions are some of the better studies of waste management, which demonstrate cost savings at approximately the same quality. In a number of other sector areas, especially the soft areas of welfare, there are no international studies that document whether savings are achieved with unchanged, worsened or improved quality.

## **META-ANALYSIS**

This section presents the preliminary results of the explanatory meta-analysis using multiple regressions analysis. In this version of the paper, we focus on effects of contacting out relating to cost whereas effects relating to service quality are more difficult to measure in a uniform way and will be included in a later version of the paper.

As explanatory variables, we test three main variables. First, we include a variable for time as a number of previous studies have found that effects of contracting out has been decreasing over time (for an overview see Bel, Fageda and Warner, 2010). Second, a number of studies have shown a correlation between transaction costs and outcomes of contracting out (cf. Brown & Potoski, 2005; Hefetz & Warner, 2011); hence, we include a dummy variable for technical services (low transaction costs) and social/welfare services (high transaction costs). Third, as numerous streams of literature on welfare regimes (Esping-Andersen, 1990) and varieties of capitalism (Hall and Soskice, 2001) have shown that national institutional settings vary and include both more liberal

and more coordinated/regulated market models, we include a dummy variable for geography in the meta-analyses.

**Table 3. Number of studies for each independent variable and descriptive statistics of cost difference between public and private production (negative value=cost savings)**

	Number of studies (N=34)	Cost difference public vs. private production (per cent)
Year 2000-2004	11	-8.5
Year 2005-2009	11	-4.9
Year 2010-2014	12	-1.4
Social services	13	-0.8
Technical services	21	-7.3
Anglo-Saxon	16	-6,3
Other countries	18	-3,5

Table 3 provides a descriptive overview of the variables included in the meta-analysis of costs. The number of studies in table 3 is 34, which means that 34 of the 43 studies examine cost effects of contracting out whereas the remainders of the studies focus only on quality effects. The right column shows some interesting results that widen the knowledge of previous meta-analyses of contracting out. The development in cost difference between public and private production shows a declining trend. In studies from 2000-2004 cost savings are 8.5 per cent in average, while cost savings drop to 4.9 per cent from 2005-2009 and further decreases to 1.4 per cent from 2010-2014. Cost savings from contracting out has in other words been declining over the 15 year period and is approaching zero in the last five-year period.

Moreover, the descriptive results for service types shows that cost savings from contracting out has been 7.3 per cent on average for technical services but only 0.8 per cent for social services. This is in line with our theoretical expectations from transaction costs theory and principal-agent theory that contracting out of social services, which have a higher asset specificity and a more troublesome to measure, is associated with smaller cost savings than technical services that have a lower asset specificity and higher ease of measurability. Finally, in relation to the geographical variable, the descriptive figures shows that cost savings from contracting out have on average been 6.3 in Anglo-Saxon countries and 3.5 in the remainder of countries. This finding is in line with our theoretical expectations to effects of contracting out in coordinated versus more liberal state models and is in

line with the finding by Bel, Fageda and Warner (2010). However, it indicates that previous meta-analyses of the 1990s which mainly or primarily were based on studies from the UK and US might have found larger cost savings from contracting out than is the case in central and northern Europe. If this holds true it means that generalization of economic effects across geographic regions should be made with great caution in the same way as generalization across service types. The early meta-analyses from the 1980s and 1990s that were based mainly on studies in Anglo-Saxon countries and technical services in other words seems to have found larger cost savings than what has been documented in international studies from 2000-2014 where experiences from coordinated economies and social services are to a larger extent included.

We now move on to the explanatory meta-analysis. Table 4 provides further summary statistics for the dependent variable (cost difference between public and private production) and the independent variables in the meta-analysis. It is seen from table 4 that the mean cost difference is -4.8 per cent (i.e. a cost saving of 4.8 per cent) and a minimum of -45.0 (cost saving) and maximum of 18.3 (cost increase).

**Table 4. Summary statistics of variables**

<b>Variables</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<i>Dependent variable</i>				
Cost difference	-4.8	14.0	-45.0	18.3
<i>Continuous independent variable</i>				
Year	2008	4	2000	2014
			Number of observations (total = 34)	
			Variable = 1	Variable = 0
<i>Discrete independent variables</i>				
Service type (1=technical service, 0 = social service)			21	13
Geography1 (1=USA, 0= Europe)			13	21
Geography2 (1= Anglo-Saxon, 0=Europe)			16	18

The meta-analysis is carried out using OLS and using two models; the difference being two different ways of operationalizing the geography variables. The results are presented in table 5.

**Table 5. Meta-analysis of contracting out studies from 2000-2014 (OLS estimates)**

Independent variables	Dependent variable: Cost difference between public and private production	
	Model 1	Model 2
Year	0.970 (.576)	0.866 (.595)
Service type	-4.335 (5.085)	-5.744 (5.109)
Geography1 – Europe etc./USA	2.460 (4.988)	-
Geography2 - Europe/Anglo-Saxon	-	-2.616 (4.987)
Constant	-1950.081 (1157.376)	-1737.589 (1196.578)
N	34	34
Adj. R <sup>2</sup>	0.053	0.054
max VIF	1.117	1.134

Note: Standard errors in parantheses.

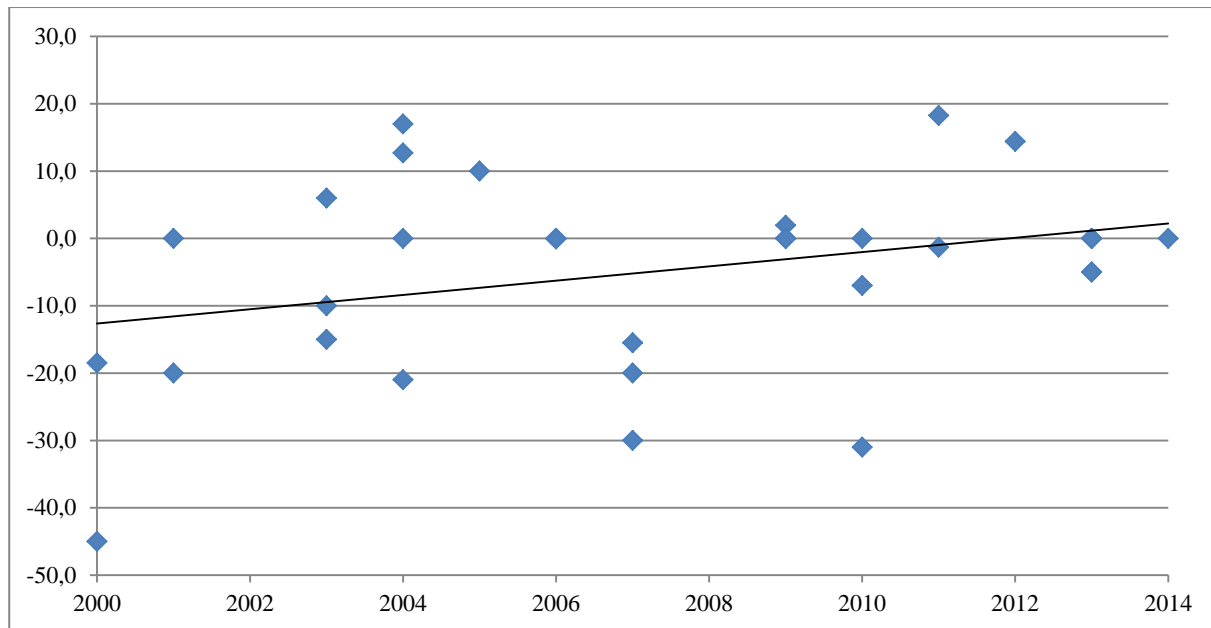
The meta-analysis shows that the correlation between the independent variables “Year” and cost difference is positive with a coefficient of 0.970 (model 1) and 0.866 (model 2). The positive correlation means that the cost difference between public and private production is declining with slightly less than 1 percentage point for each year after 2000. The correlation between service type and cost difference between public and private production is on the other hand negative. Recalling that service type was constructed as a dummy variable with value 1 signifying technical services and value 0 signifying social services, the negative correlation means that cost savings are larger in technical services than in social services. After controlling for the other explanatory variables, the cost saving of contracting out in technical services are app. 4.3 percentage points larger than in social services.

Finally, for the geography variable, the results of model 1 and model 2 show interesting differences. In model 1 geography is operationalised as studies conducted in Europe and other countries including Australia versus studies in the US. The coefficient is positive, which means that cost savings from contracting out are smaller in US studies from 2000-2014 than in studies from the rest of the Western world. However, when the geography variable is operationalized as Europe (particularly studies from central and northern Europe) versus studies from Anglo-Saxon countries including the UK, US, Australia, Ireland and Canada, the coefficient is negative; thus meaning that

costs savings are larger in studies based on data from Anglo-Saxon countries than studies from other countries.

The positive correlation between year and costs is further illustrated by the linear trend line in the scatterplot in figure 1 that visually illustrates the decreasing cost effect of contracting out over time.

**Figure 1. Scatterplot for year and economic effects with linear trend line (negative values indicate cost savings)**



Source: 34 studies on economic effects of contracting out, 2000-2014.

## DISCUSSION

The review of international studies on the effects of contracting out illustrates that the studies are of very variable quality, as also noted by Boyne (1997). There is a distinct lack of studies which, on a solid methodological foundation documents the effects of contracting out in relation to both the economy, quality and transaction costs etc. Most studies refer to economic effects, while in many cases it is left unanswered or poorly documented what the consequences for the service quality are. Some studies assume that quality remains unchanged, while many studies fail to consider the issue altogether. These weaknesses within the existing evidence of effects on the costs and the quality of contracted out public services is problematic because it allows for generalizations and attitude-based interpretations.

In the following we discuss a selection of the problems that have become apparent in our review, and how they may have influenced the results that were reported in the studies.

### **The challenge of comparability**

Ideally, assessments of the effects are organized so you can compare private suppliers of public suppliers that provide exactly the same benefits and exactly, the same organizational and regulatory conditions. This situation is rarely present in practice. There may be differences in scope of services, user and task-composition, regulatory requirements such as training, documentation and research, e.g. in the health care area. Often, we demand that our public organizations deliver a broader range of service benefits, and there is also a requirement for emergency preparedness, security, spaciousness in the labor market and communication. There may also be differences in infrastructure and location. Public organizations are often required to serve a given area, while private can better choose the sites which seem most appropriate for organisation of a concrete task. Investment needs and costs is another parameter that must be adjusted. For example, operating in old and dilapidated facilities are not readily compared with operating in new and well-appointed facilities without having an eye for investment of incurred expenses, depreciation, etc.. This applies to both across public and private organizations across the public actors in the public sector (e.g. municipalities). The problem of comparability creates severe design challenges and failure to account for this can generate unclear results.

### **The challenge of short time perspectives**

When you want to measure the effects of contracting out, it is essential to take a longer time perspective than just the first year or two and to clarify whether this is the first contract period (first generation) or repeated. Yet, most of the studies identified in our survey limit themselves to a short time period and look at first generation contracting only. This is problematic, first, because the first contract period can be considered a learning period for both the public and the private party where transaction costs are likely to be higher than in subsequent tenders. Another possibility that has been discussed regarding tendering on cleaning the area, is that the private party at the first offer may be tempted or pressured to set a low price to enter the market, but may be unable keep service levels and also may feel compelled to raise the price in the next contract round. In this case, the competitive situation in each sector area (and possibly also geographical area) much be examined to

determine whether a public monopoly risks being replaced by a private monopoly, which for instance appears to have happened in the ambulance business and medical transport.

Second, it must be taken into account that public organizations also develop services over time. Thus it is not methodologically correct, if in a before-after study makes an uncontrolled comparison of private alternatives with a public option without taking into account the development, which may have been taken place in price and quality of the service in a similar public organization. One must in other words, avoid using the wrong picture of the public sector at the start time as a basis for subsequent comparison with the private sector after contracting out. A general point is that it is not necessarily ownership form, but very competitive environment that creates positive effects, which also was a key finding of Hodges research overview in the field (Hodge 2000).

### **The challenge of measuring indirect effects of contracting out**

Only few studies in the review provide an examination of actual transaction costs for tendering, contracting, monitoring, etc. There is consensus in the literature that writing up contracts; evaluating the bids; monitoring the delivery and sanctioning can require significant administrative and legal resources that should be included in the assessment of the economic effects of contracting out, yet few studies attempt to quantify such effects. Indeed, when measuring the economic effects of contracting out it is important to include indicators that capture both narrow and broader cost dimensions. The inclusion of transaction costs seems obviously necessary, but nevertheless omitted in many studies. Both public and private sector transaction costs should be included and they should ideally be compared to the administrative costs related to producing services within the public sector.

There are other possible derivative costs that should be considered. This applies to cost of having to maintain a public emergency to ensure security and to take care of the cases in which the private actor may opt out. This challenge is also not unique to contracting out area which has been our focus in this report, but is also likely to be applicable in other competitive areas, and free choice areas. There are also general issues in relation to the transfer of results from one locality to another, for example from a large urban municipality with a small rural municipality. A well-functioning private market requires that there are several providers that compete for assignments. However, this is far from the case in all sectors and all regions of the country. One has to be careful to generalize results from such large cities to rural areas where infrastructure, population density and potential for

recruitment are very different, and which therefore may be a different cost structure for both public and private actors.

There are similar concerns in relation to the measurement of quality effects. But here is added the further dimension that measurement of quality is often relatively ambiguous particularly in social welfare areas. Prison operations may serve as an illustrative example as discussed by the Australian researcher Richard Harding in his review article from 2001. Since the prison system's primary task is keeping prisoners locked up, a primary quality measure could be the number of prison escapes. But security for inmates and staff is another key concern, and this might lead to considering the number of assaults on prisoners and guards or the number of injuries, deaths or suicides in prison. In addition to these security dimensions that could be identified prisoners' physical and mental health, reduction of substance abuse that prisoners are treated fairly and that there are appropriate activities. In a broader sense, quality can further be seen as the prison's ability to help with rehabilitation of prisoners. A goal here would be relapse rates or retention of jobs after release. Some of these measures might lead to conflicting conclusions on the quality.

A way around the issue of multiple purposes of many public services would be to utilize composite indexes, yet this creates other issues of how to weigh different types of quality against each other. In any case the methodological issues of including quality dimensions can probably explain why this dimension is rarely included, - but it can hardly justify this practice, and should lead to severe reservations before issuing general statements about effects of contracting out (see also Boyne 1998).

## **CONCLUSIONS**

The present study set out to update previous meta-analyses of the international literature on contracting out with a main focus on outcomes relating to costs and service quality. In addition we set out to evaluate the state-of-the-art in the literature and particularly whether scientific studies include considerations for transactions costs and other secondary costs that might modify the main results and provide a more nuanced picture of the empirical landscape. The meta-analysis shows that there is a tendency to report positive economic effects particularly within technical areas. The evidence is much less solid when it comes to social services. We have also found that there is a lack of studies that account for quality effects, and that the conclusions in these studies are mixed.

Furthermore it appears that few studies consider transaction costs and other potential derived costs. It may be because they are insignificant, but it can also be due to the significant methodological complexities in taking such concerns into account. Many studies are performed as point in time investigations with limited consideration of the dynamic and longer term effects, for instance by repeated contracting out in particular areas or due to ongoing developments within the public as well as the private sectors. The few studies that do include a longer term perspective indicate that benefits are diminishing over time.

All in all the assessment of the international literature illustrates that there are likely economic benefits of contracting out, but that these benefits have been decreasing over time and are more likely in technical services than in welfare services. Moreover, studies in Anglo-Saxon countries tend to report larger cost savings compared with studies in other countries including central and northern Europe. Furthermore, the review shows that the results are fairly heterogeneous and that there are significant uncertainties related to the failure to take quality developments, transactions costs and other derived costs into account. Our results are generally in line with meta-analyses from the late 1990s, hence like Boyne (1998) and Hodge (2000) we emphasize that the weaknesses in the studies particularly in regards to quality measures should lead to severe caution in presenting aggregate measures for the potential benefits of contracting out. For further research on contracting out we suggest a more contextual and sector oriented perspective, which also includes service quality, transaction costs and other indirect costs and thereby makes it possible to evaluate contracting out in a more holistic and encompassing manner.

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