

Strategic Pricing by Oligopolists in Public Tenders of Passenger Railway Services

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Purpose:

To investigate the bidding behavior of firms in competitive tenders of passenger services

Original intention:

Comparing data on tenders/franchise bidding in Sweden, Germany and Great Britain

This paper:

Sweden only

The Swedish market for procured passenger services – a brief history

Going from vertically and horizontally integrated monopoly to decentralized industry with multiple suppliers in a step-wise process

- 1988** Vertical separation of infrastructure from operations
Transfer of responsibility for subsidized local services to local authorities
- 1989** First competitive tender of local passenger services
- 1990** BK Tåg becomes the first new entrant
- 1993** Competitive tendering of subsidized inter-regional services
- 2000** First new entrants in inter-regional services

The Swedish passenger railway market in 2004

The Swedish State controls and maintains the railway infrastructure through the authority Banverket

State-owned operator SJ still has a monopoly on the so-called profitable passenger lines (trunk lines between Stockholm and some major cities)

Subsidized local lines tendered (gross-cost contracts)

Subsidized inter-regional lines tendered (net-cost contracts)

Out of six new entrants since 1990, four remain as independent actors alongside SJ:
Connex, Keolis, BK Tåg and Tågkompaniet

Public procurement of passenger railway services – some characteristics

Procuring entity has a strong position as a buyer, sometimes close to a monopsonist

Competition only takes place at discreet points in time, often with several years in between

The winning bidder enjoys a monopoly-like position during the contract period, but its actual powers are often restricted in terms of influencing ticket prices and supply levels

A firm that loses its core business in a tender may be forced to dismantle altogether

Contracts are typically prolonged for a couple of years and there are some possibilities to renegotiate the terms

Consequently: *It may be advantageous to become an incumbent*

The bidding process

The conditions in the procuring authority's invitation to tender form the basis for a firm's bid calculation, generally defining the minimum requirements:

- The type and amount of traffic
- Characteristics and demands related to rolling stock, maintenance, performance and quality

The bidder has to combine a set of inputs, and the resulting bid is not only a specified price, but also a presentation of how the bidder intends to perform the services as well as showing that it has the competence and commitment to succeed

Therefore, many tenders may be viewed as hybrids of beauty contests and reverse closed auctions (where the lowest bid wins)

Ideally:

- All firms place bids that relate to their best estimates of costs and revenues.
- A realistic bid from the most efficient firm would then win the tender and force the others to improve their competitiveness in order to stand a better chance in the next tender

However, we suggest that:

On some occasions, firms may place very low bids and on other occasions very high bids, not necessarily related to actual costs or revenues

High and low bids in tenders

2 main reasons:

- Calculations based upon different assumptions than competitors', concerning costs of inputs, market revenues etc
- Strategic bidding, signaling aggressive or soft positioning in a certain market

High bids in tenders

- The bidder is confident that no other firm will place a bid
- Real cost disadvantages, for example due to diseconomies of scale
- Signal no interest in order to get other firms to do the same in other markets
- Driving up the price level for the next period
- Faulty calculations

Pricing strategies and games

The operators in Sweden: Oligopolists like the big international companies and the former monopolist SJ, meeting some competition from start-up firms

The market is a repeated game: new tenders will appear for other parts of the market and the current market will be re-tendered in the future

Pricing strategies and games

Strategy in repeated games: tit-for-tat

Division of markets by means of signaling primary interests

To make the game work, the oligopolistic firms must arrive at playing a delayed tit-for-tat game:

Tender 1: Firm #1 is soft and firm #2 is aggressive.
Tender 2: Firm #1 responds by being aggressive and firm #2 responds by being soft

And so on...

System may collapse for a number of reasons:

- If everyone plays soft, new entrants will be attracted
- If one firm starts to be aggressive at the wrong time the others will be forced to retaliate
- Haphazardly, other small firms may win and force the oligopolists to change their strategy

What firms engage in strategic pricing?

Any firm can make faulty calculations, but small firms are more vulnerable if a pricing strategy goes wrong

Hypothesis:

Small firms will only place very high or low bids due to real cost differences or faulty calculations, while large oligopolistic firms may also offer such bids due to strategic pricing

Consequently, small entrepreneurial firms will offer less extreme bids than oligopolistic firms

Impact of economies of scale

Differences in cost calculations may be caused by real differences in firms' costs of inputs, some of which may be affected by economies of scale.

Firms may also have different or even faulty assumptions on the possibilities to achieve economies of scale

Continuous vs. discontinuous economies of scale

Some production factors are lumpy, resulting in stepwise falls or thresholds in the average cost curve, thereby resulting in discontinuous economies of scale

Under discontinuous economies of scale, small changes in the demanded output may result in very different bids if a bidder thereby falls short or beyond a threshold value

Figure 1. Continuous economies of scale

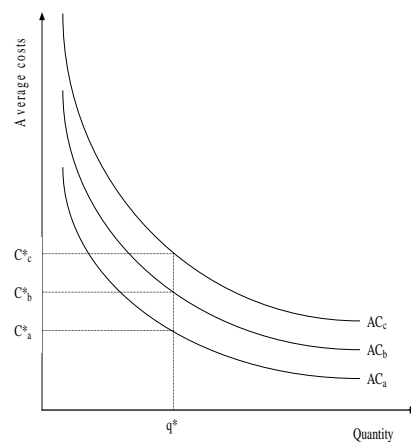
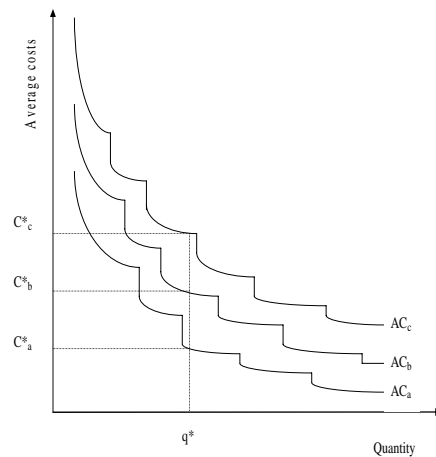


Figure 2. Threshold values



Availability of empirical data

Information on bidders and bid prices in previous tenders of passenger railway services

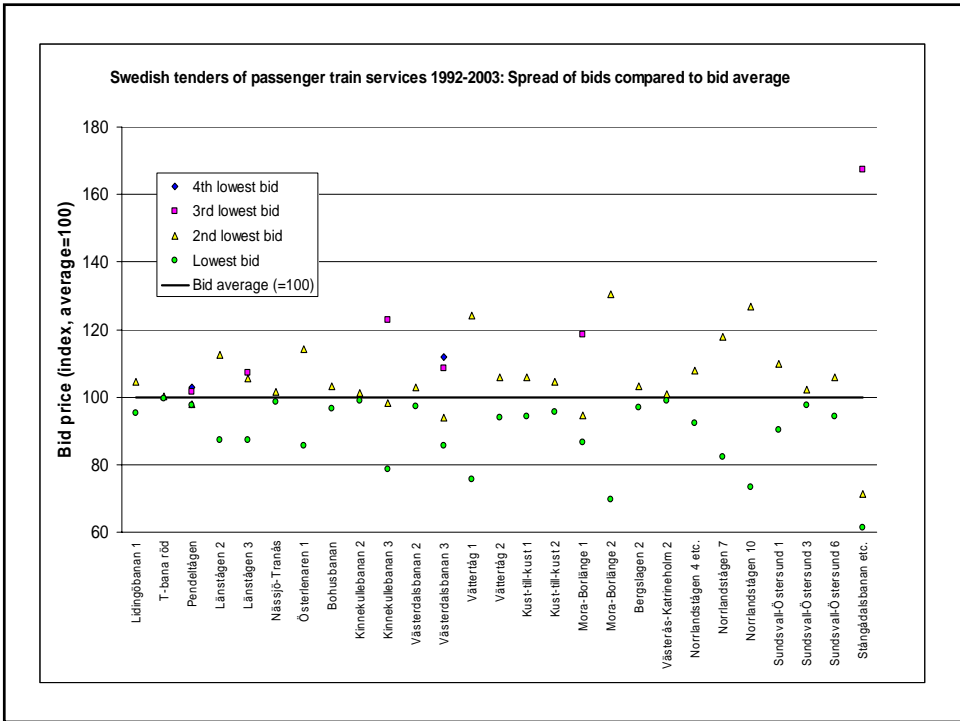
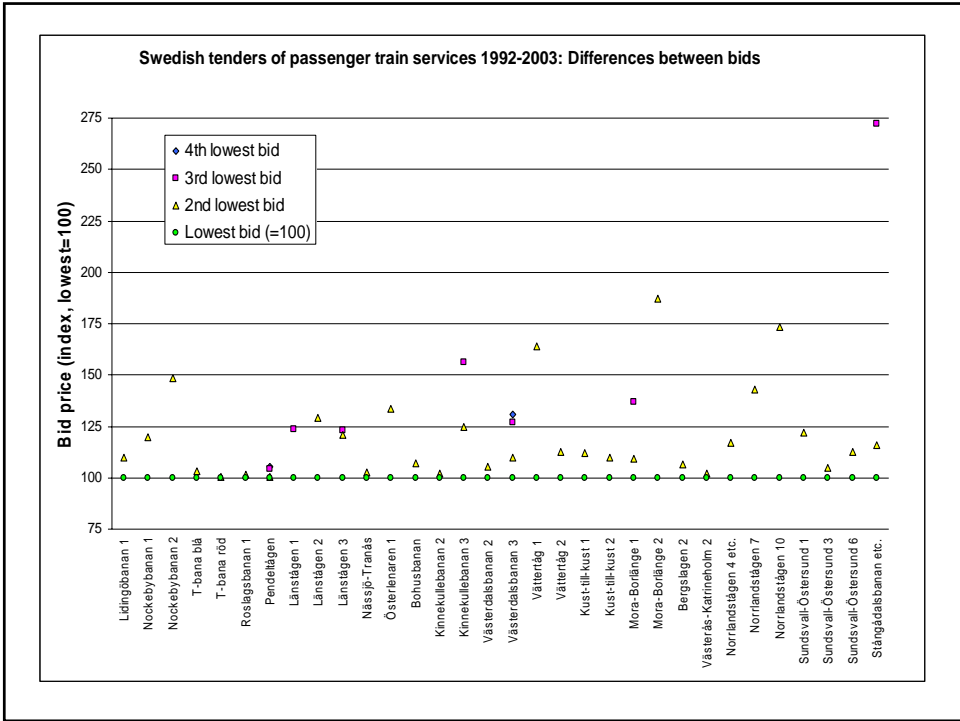
- Great Britain: data not available (just winning bid)
- Germany: data not available (just winning bid)
- Sweden: limited data available

Reasons for limited publication of bidding data:
Help the bidders to keep their “secrets” and thereby their competitive edge

Swedish data on bids in tenders

- About 80 tenders have taken place in Sweden since 1989
- 60 tenders with at least two bidders
- Complete or almost complete information on 32 tenders

Much of the data on Sweden that we do have has not been made public, making it necessary to sometimes mask the identity of the bidders behind the bids



Early observations

- 12 tenders where bidders seem to behave as if economies of scale are continuous and as if different bidders face similar conditions

Typically corresponds to re-tendering of lines where the services have become fairly well-known to the bidders

- 13 tenders where threshold effects may be of importance

Typically first-time tenders with differences in access to information on costs and revenues

- At least 5 tenders where strategic bidding seems to be going on

Table 1. Companies participating in tenders – share of lowest and highest bid

	SJ	Connex	Via GII	Stagecoach	CPTA subsidiary	BK Tåg	BSM	Other small firms
Number of bids	29	10	2	3	7	15	6	7
Lowest bidder; share in %	44,8%	40,0%	0,0%	0,0%	85,7%	33,3%	16,7%	42,9%
Highest bidder; share in %	48,1%	44,4%	50,0%	0,0%	0,0%	53,3%	50,0%	16,7%

Table 2. Deviation from bid average and median

	SJ	Connex	Via GTI	Stagecoach	THM db	BK Tåg	BSM	Other small
Deviation from bid average (percentage units)	9,8%	18,5%	2,1%	1,5%	2,0%	10,5%	11,0%	14,2%
Number of observations	25	7	1	1	3	14	7	4
Deviation from bid median (percentage units)	8,3%	24,4%	1,8%	1,8%	5,1%	8,8%	10,1%	12,0%
Number of observations	25	8	1	1	5	14	6	6

Table 3. Change of bid average when including a specific bidder (tenders with >2 bids)

Traffic / Line	Bid average	Change of bid average when including a specific bidder						
		Connex	Via GTI	Stagecoach	SJ	BSM	BK Tåg	Other small firms
Stockholm commuter trains	655,95	-0,8%	-0,7%	0,5%	1,0%			
Länstågen 3 rd tender	15,47				3,8%	-6,0%	2,8%	
Västerdalsbanan 3 rd tender	18,13				4,2%	3,0%	-4,6%	-2,0%
Mora-Borlänge	25,37				-6,2%	-2,6%	10,3%	
Stångådalsbanan etc.	181,20	50,8%			-12,6%		-16,2%	

Discussion and Conclusions

The empirical data from Sweden shows that there have been actual cases of very high and very low bids in tenders

Some of these can probably be explained by firms' different assumptions on costs and revenues (some realistic – some not) while others may be related to strategic pricing or even multi-period strategic games

Large oligopolistic firms like SJ and Connex have been more likely than other firms to place either very low or very high bids in tenders

Very early observations from a limited data set; very few tenders with more than 2 bidders

Lack of data makes it difficult to perform further testing of hypotheses

Discussion and Conclusions

It is notable that data on bids in tenders is so difficult to get access to, given the official policy of the European Union:

“If a company is awarded the monopoly over a public service that any one of a number of companies could provide, the selection process must be transparent” (Europa 2004)