

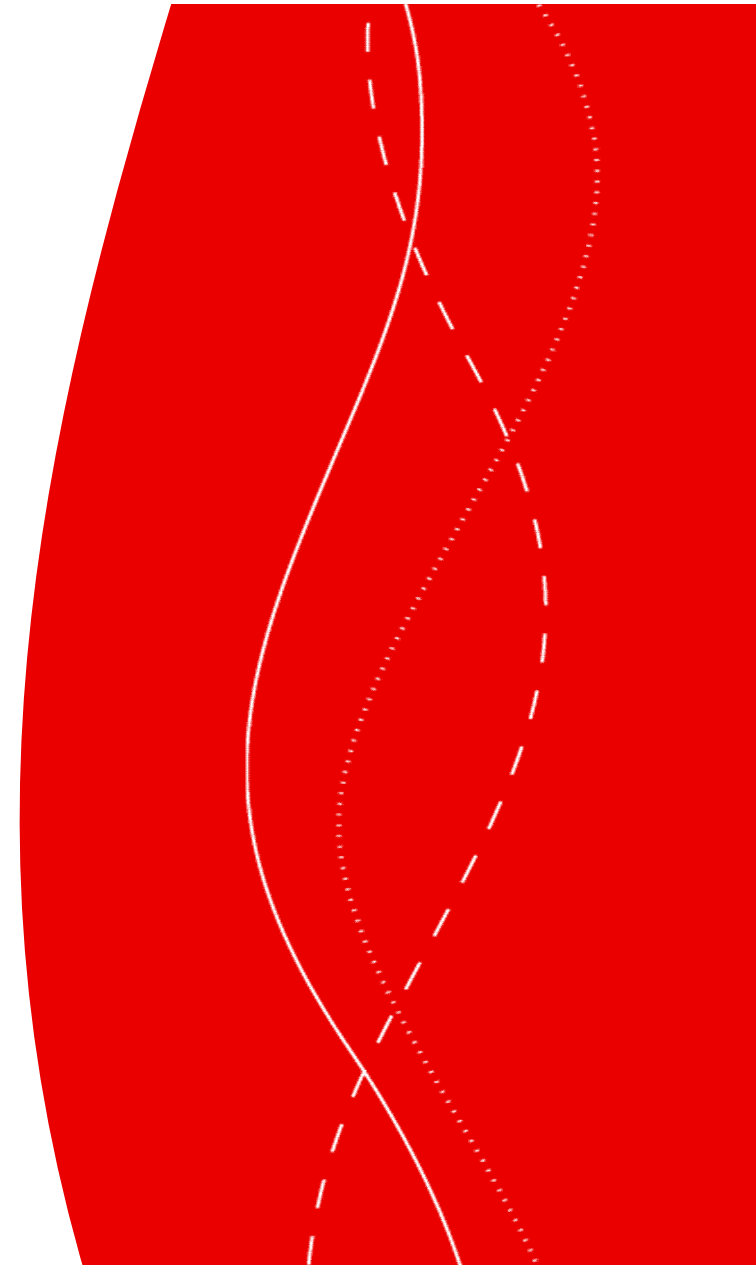


Competition in Swedish Passenger Railway
Entry in an open access market and its effect on prices

Andreas Vigen, PhD

Swedish National Road and Transport Research Institute

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Long-distance passenger transport in Sweden

- Tradition of early deregulation
- Late 1980's, tendering of regional public transport services
- 1990, deregulation of taxi services
 - Higher prices, greater supply. Many entrants.
- 1992, domestic airline
 - Lower prices, greater supply. Many entrants.
- 1999, long-distance bus (coach) services
 - Lower prices (especially compared to the railway), greater supply. Many entrants.
- 2010, open-access regime on railway
 - Lower prices, greater supply. Few entrants.
- 2012, free entry on intra-region public transport
 - Previously, the public transport authorities had monopoly on within-region traffic
 - Overall, no effects
 - Positive supply effects for places along the long-distance bus network



Overall development of the railway market

- European railway sector has undergone major restructuring and liberalization during the last decades
 - Separation of infrastructure management and train operations
 - Opening up and deregulating the freight and passenger markets
- Market opening on Swedish passenger services in 2010 (2011 in practice)
- Operators are free to establish rail services (open access)
- Before the market opening, the state-owned operator SJ was a monopolist on commercial services (not tendered services)
- SJ has instructions from the government to act as a profit-maximizer

The Swedish market opening

- Between 2007 and 2015, 4 entries was made on the passenger railway market
 - Transdev / Snälltåget (Göteborg/Stockholm-Storlien and Malmö)
 - TÅGAB (Falun/Karlstad – Göteborg and later Karlstad-Stockholm)
 - Blå/Gröna tåget (Stockholm-Göteborg)
 - Saga Rail (Stockholm-Linköping) started service 2018. Aimed at the low-price segment.
- On average 1-3 departures per day (generously counted)
- Mostly traffic on small trip relations or niche services
- Not likely to be hard competitors with SJ

- In March 2015, the Hong-Kong based operator MTR Express established a service on the line Stockholm-Gothenburg
- Challenging the monopoly of the incumbent SJ
- Could be regarded an established actor today

Purpose of the study

- Investigate the entry made by MTR express on the Western main line (Stockholm-Gothenburg)
- Answer whether ticket prices faced by travelers are lowered
 - Both MTR and SJ's prices are addressed
 - Main focus on SJ
- Analysis of the short-run effects
- Consider only “express-trains” (snabbtåg, or high-speed trains as labelled by SJ)
 - X2000



The line Stockholm-Gothenburg

- 450 kilometers between Stockholm-Gothenburg
- Two largest cities of Sweden
- Travel time of about 3 hours
- Stockholm-Gothenburg was thought to be SJ's most profitable line when being a railway monopolist
- Average price is 415 kronor
 - Average of SJ and MTRs prices over the sample period
- SJ and MTR runs around 32 and 14 departures per day respectively on a normal weekday
- Number of passengers????



The services Stockholm-Gothenburg

	SJ	MTR
Train	X2 (X2000), ABB from mid 90's	X74 (Flirt), Stadler from 2015
# seats	≈300	244
Duration (hh:mm)	03:00 (avg)	03:20
Departures/day (avg)	32 (both dir.)	14 (both dir.)
Avg. price (fr. data)	445 SEK	290 SEK

Marketing



Disputes on the market

- So far, apart from marketing, SJ has not made much noise about MTR's entry
- MTR, however, has made complaints about SJ's behaviour:
 1. *It has, for the second time, complained to the competition authority for not being let in to SJs booking system (sj.se is generally regarded the national travel site)*
 2. *Previously, MTR has also made several complaints that the Swedish railway laws are not adjusted for on-track competition*
 - *For example, access to depots and the train path allocation process.*
 3. *ALLRAIL (where MTR is a member) accuses SJ of smearing MTR*
 - *Allrail accuses SJ of trying to "stoke nationalist prejudice and turn public opinion against MTR" when SJ calls MTR a "Chinese state company" ¹.*
 - *Remember, SJ is also a state company.*

¹ allrail.eu/wp-content/uploads/2018/05/PRESS-RELEASE-Swedish-rail-incumbent-SJ-smearing-MTR-as-Chinese-state-company.pdf

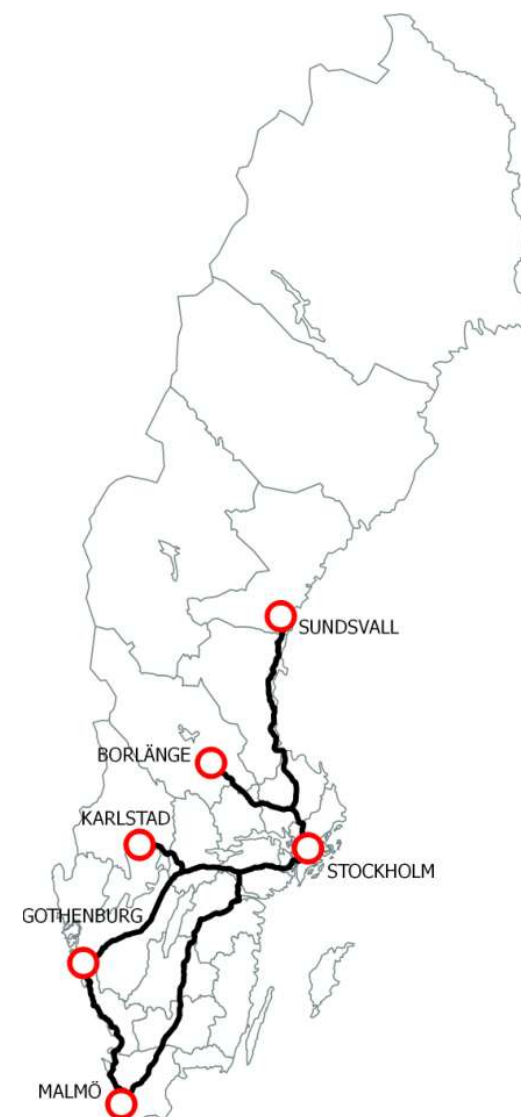
Data

- Price and passenger data is non-existent in Sweden (and most of Europe)
 - This is very problematic for policy evaluation, market surveillance, and research on the subject
- A program was programmed in Python to request prices from operators' websites up to 31 days before departure
- Observes the lowest available (one) price for a departure
- Price information for more or less all departures on six lines has been collected since July 2014 to October 2016.
- 2.2 million observations
- Only express-train services (snabbtåg)

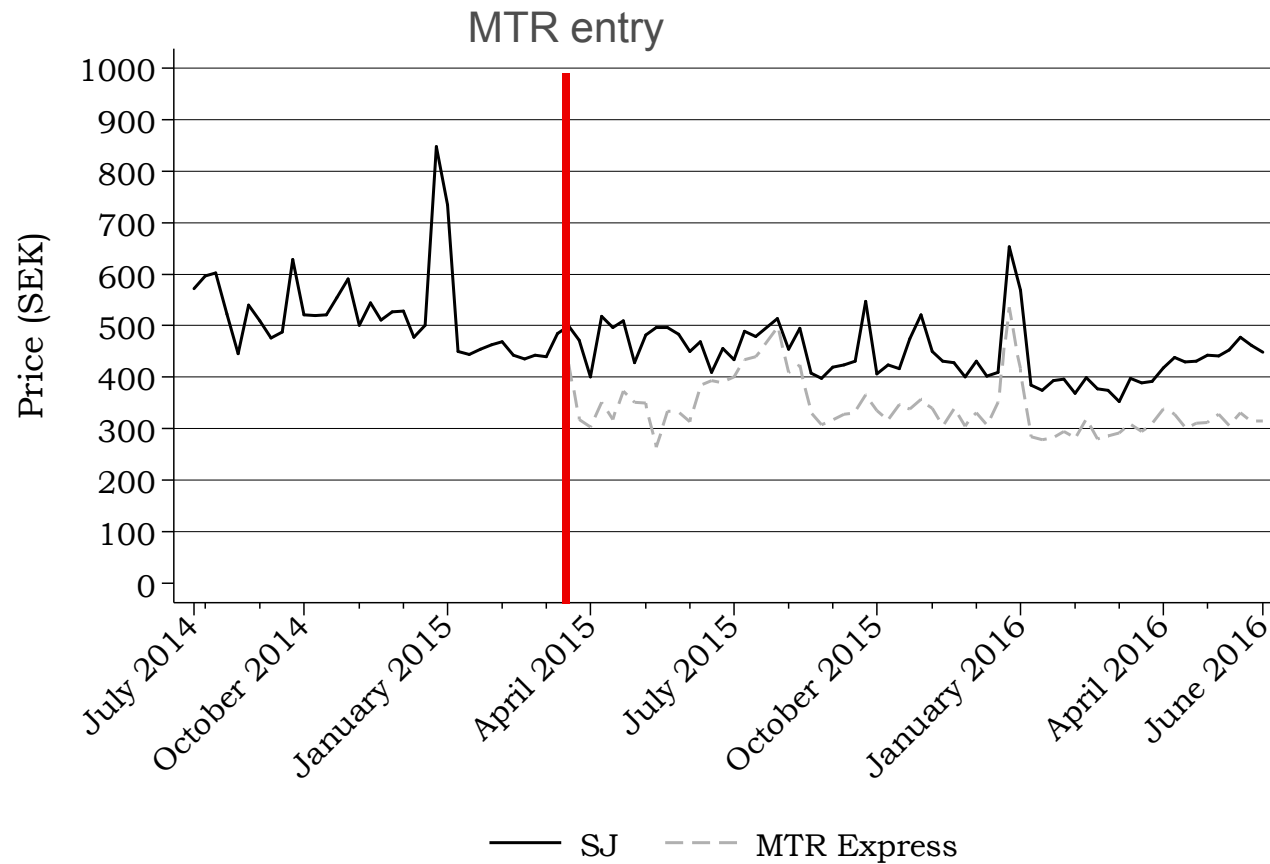
- Ideally, both load factor and price would be observed. Is not here

Treatment and control routes

- Stockholm-Göteborg
- Stockholm-Malmö
- Stockholm-Sundsvall
- Stockholm-Karlstad
- Stockholm-Borlänge
- Göteborg-Malmö
- Popular lines with express services

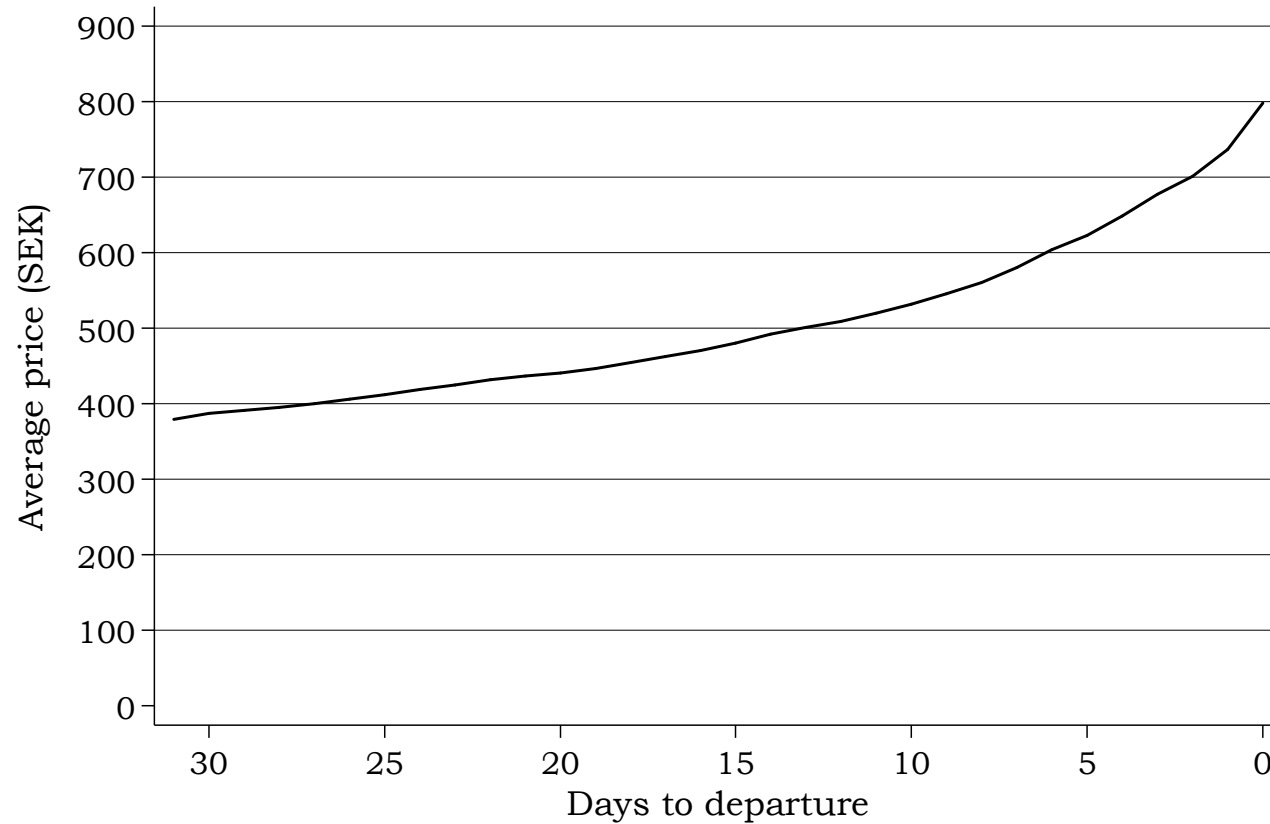


Average weekly price on Stockholm-Gothenburg



10 SEK is roughly 1 EUR

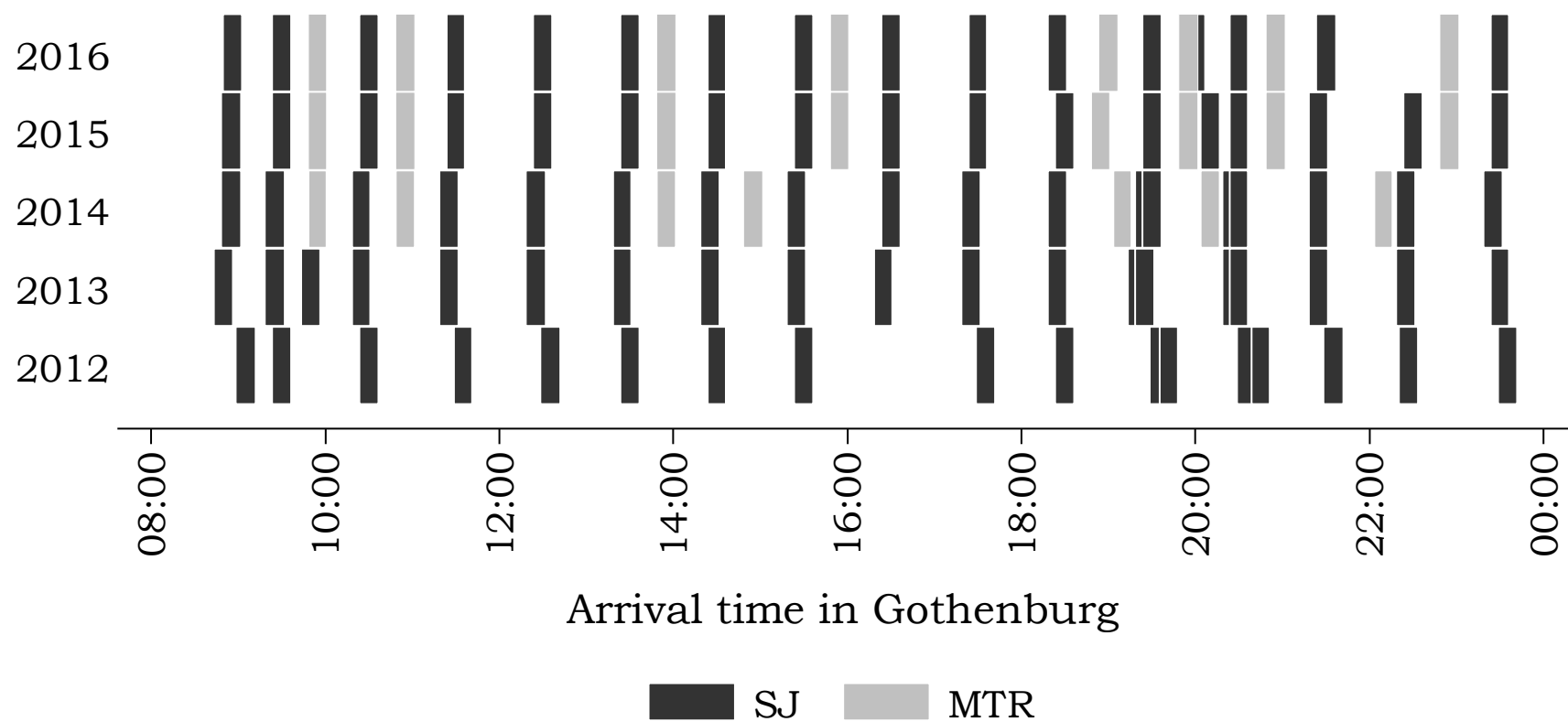
The "days-relationship" (all operators)



10 SEK is roughly 1 EUR



Schedule



The analysis

- Econometric analysis
- Utilizing that MTR only entered on one line, Stockholm-Gothenburg
- The five other lines are used as “control routes”
- The difference between the pre and post-entry period on the Stockholm-Gothenburg line is the average price effect of MTR’s entry
- Uses observations for both operators for all days of the week, and all six lines

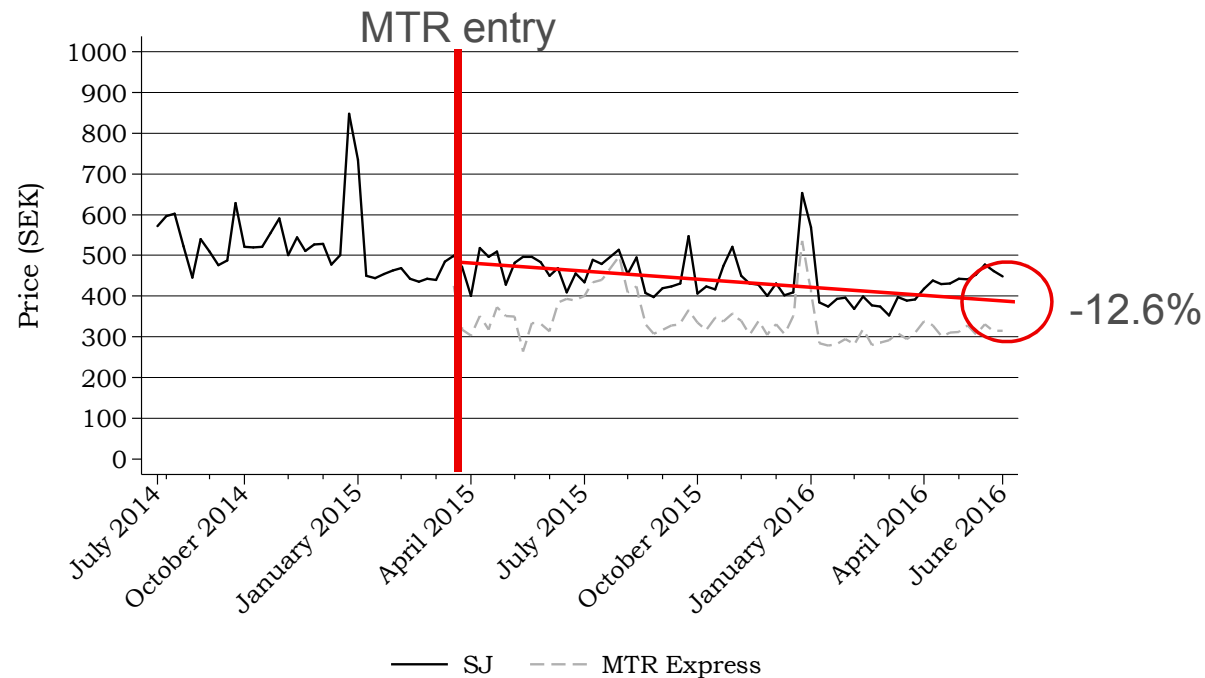


The analysis

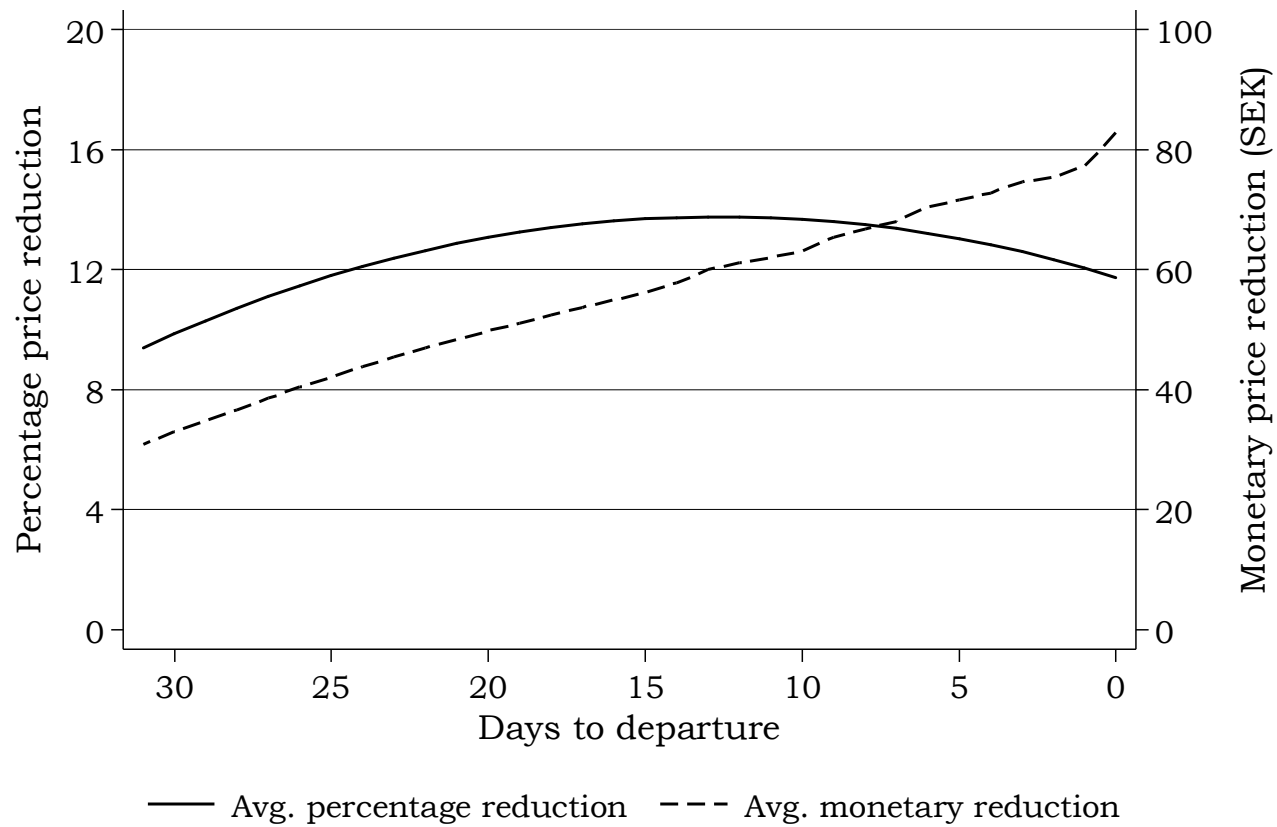
- Use logged price as dependent variable
- MTR treatment dummy, days and days-squared
 - Interaction with the treatment variable and days-variables
- Time and train fixed effects
 - A train is e.g. train 400 departing Stockholm 06:00 and bound for Gothenburg on Monday, Tuesday and Friday.
- The train fixed effects captures line, departure, and arrival heterogeneity
- **The average price change at SJ for a ticket booked at the average number of days before departure (about 15 days)**

Results

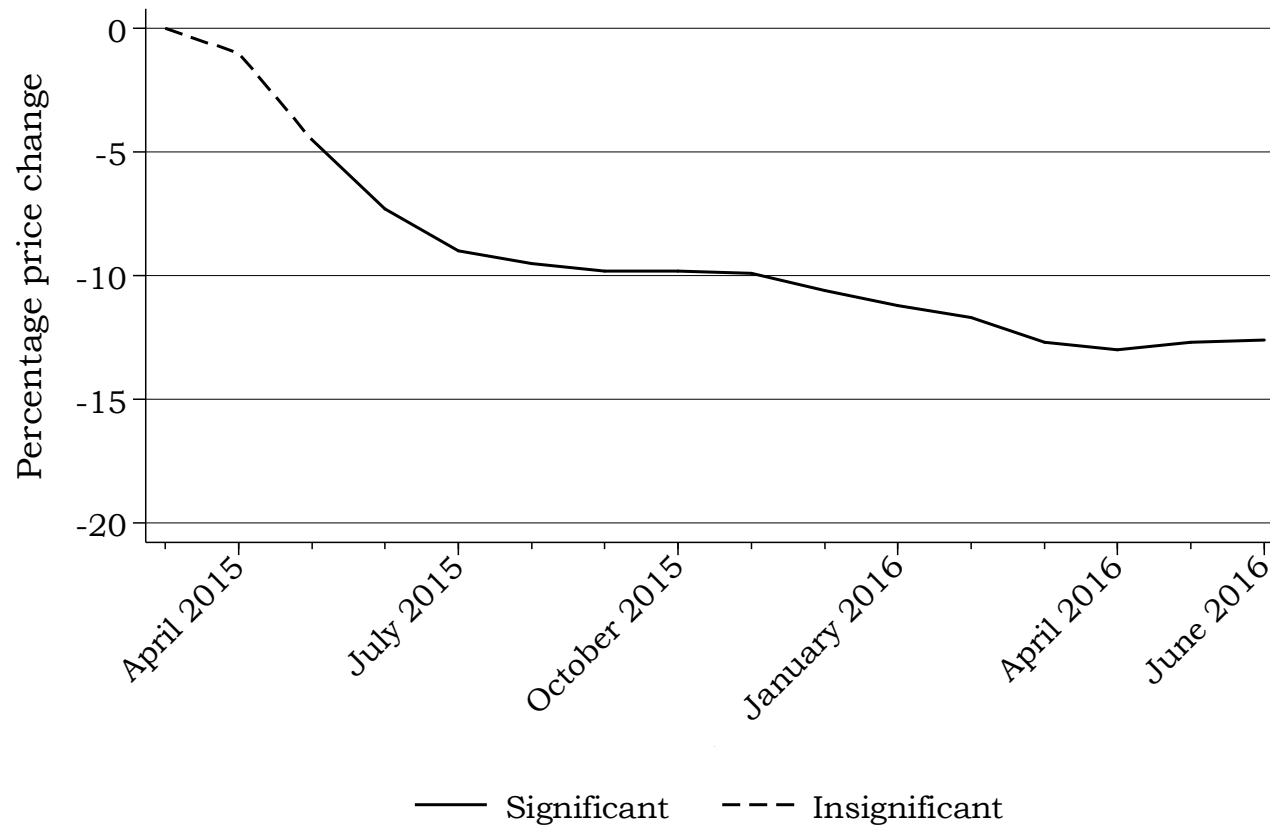
- Already from before did we see that MTR has lower prices, on average, than SJ
- Analysis shows an average price reduction of 12.6 percent following the MTR entry



Price reduction by day to departure



Percentage price reduction since MTR's entry



Why is there competition in Sweden?

- Sweden allowed for open-access relatively early?
 - MTR gets to "practice" on competition before larger countries open up their markets
 - Similar behaviour as when Sweden started tendering bus services (learn tendering). We saw the entry of big foreign companies such as Concordia (NL/NO) and Connex (FR)
- Low track access (infrastructure) charges?
 - Lower than the social marginal cost (SMC)
 - Would fully internalized charges remove the scope (profits) for competition?
 - Should one take into account potential benefits of competition in SMC?
 - One month ago, the Swedish Transport Agency demanded that the Transport Administration must use proper marginal cost pricing for infrastructure charges
- Rail is competitive on some routes?
 - The Stockholm-Gothenburg line is, perhaps, ideal for competing with airlines, bus, and car.

Why is there not more competition in Sweden?

- Too high track access (infrastructure) charges?
- Small market?
 - Stockholm and Gothenburg are the two largest cities with around 1 and 0.6 million inhabitants each
- Distances?
- Strong incumbent? (and strong entrant)
 - There was a third company planning to enter the market at the same time as MTR. It did, however, withdraw after MTR announced their entry.
- Capital costs and labor supply (train drivers)?

Wildcard

- Flixbus recently took over the biggest long-distance bus operator in Sweden, Swebus (previous Swebus Express)
- The long-distance bus market has been deregulated since 1999.
 - Probably not at all as large effects as seen in, for example, Germany
- Likely that Flixbus absorbs more long-distance bus operators
- Implications for rail?
 - Probably depending on line/route
 - Long distances in Sweden



Conclusions (mostly for rail)

- Travellers are facing lower ticket prices after MTR's entry
- MTR offers lower prices than SJ most of the times
- Since March 2015, SJ's prices has decreased by some 13 percent

Common for all modes:

- Operators and PTAs must make data available
 - The American airline industry is a good example
- Otherwise someone else will do that for them...





Thank you!

andreas.vigren@vti.se

Descriptive statistics

	Price (in SEK)						Daily departures					Obs.
	Avg.	Avg. not SJ	Med.	SD	Min.	Max.	Avg.	Med.	SD	Min.	Max.	
Stockholm-Malmö	484	306	430	236	152†	1,686	30	31	5	12	35	579,965
Stockholm-Gothenburg	441	330	402	217	188†	1,689	40	41	11	4	52	712,947
Stockholm-Sundsvall	476	–	438	214	198†	1,491	14	14	3	4	17	274,509
Stockholm-Karlstad	334	–	245	173	198†	1,165	10	12	2	1	12	203,847
Gothenburg-Malmö	259	–	266	67	198†	937	12	14	2	2	14	149,445
Stockholm-Borlänge	239	–	200	58	198†	886	8	8	2	2	18	233,427
<i>Dataset aggregate</i>	<i>413</i>	<i>–</i>	<i>366</i>	<i>217</i>	<i>152</i>	<i>1,689</i>	<i>26</i>	<i>26</i>	<i>14</i>	<i>1</i>	<i>52</i>	<i>2,154,140</i>

Notes: † Nominal minimum prices are 195 SEK on all lines, except Stockholm-Malmö (150) and Stockholm-Gothenburg (185).

Parallell-path assumption

