

A Continued Ban on Frequent Flyer Programs (FFP) in Norway?

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Background

- Late 2010 Konkurransetilsynet started an evaluation of the ban on FFP in Norway
- Frode Steen and Lars Sørgard took part in a specific part of the evaluation
 - Empirical study
 - More general discussion, mostly related to the report submitted by Copenhagen Economics
- We were not involved in the evaluation done by Konkurransetilsynet late 2011 and early 2012
 - We had no prior knowledge about the decision they made ('delt løsning'), nor have discussed it with them

The plan for today

- Potential loss from FFPs
 1. More loyal consumers?
- Empirical results
 - Suction effect?
 - Econometric analysis of route level data
- Potential loss from FFPs (cont.)
 2. Exit on smaller routes?
- Potential gains from FFPs
 - Higher quality?
 - More efficient marketing?
- Some concluding remarks

More loyal consumers?

- FFP leads to a potential for lock-in
 - You can be rewarded for passing a threshold level
 - Analogous to retroactive rebates, which EU Commission (and EU court) are restrictive towards
- But several questions must be addressed
 - How serious is the lock-in, if any?
 - Even if lock-in, do they compete for attracting consumers?
- First, let us understand the motives behind FFP
 - Example from text book on business strategies

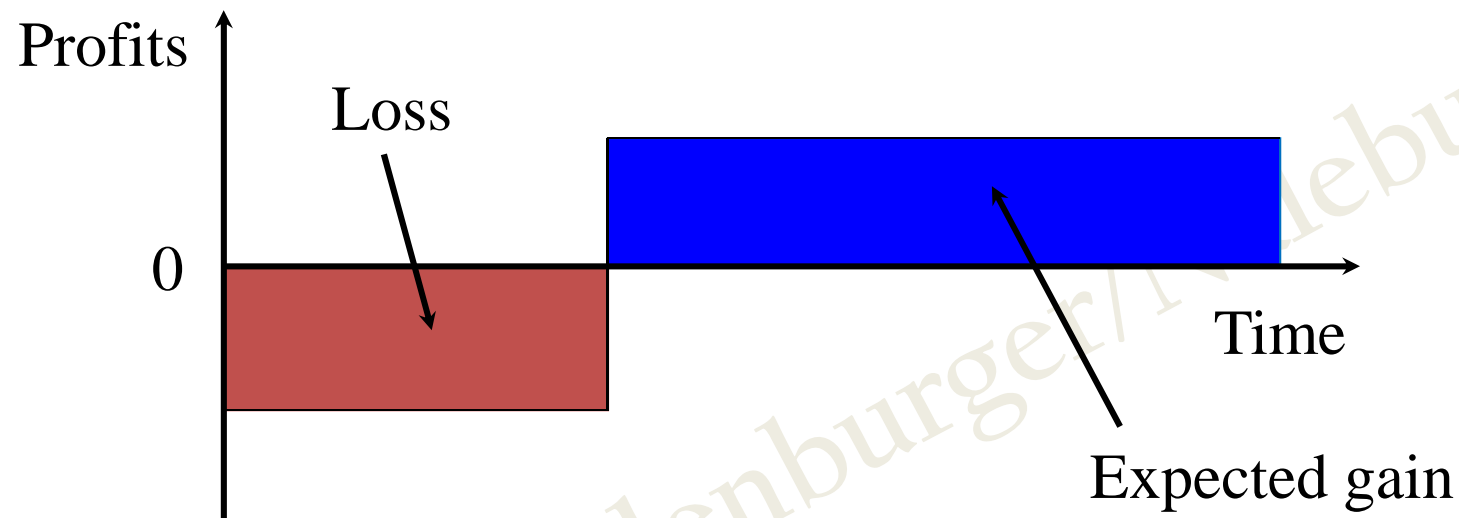
A Loyalty Program introduced

- *AAdvantage* launched May 1 1981
 - American Airlines' *frequent flyer program*
- Created loyalty by rewarding it
 - Earn points per mile, and redeem them for free flights
- Two clever moves that were important
 - Restricting the free travel; black out dates etc
 - Filled seats that would else have been empty
 - Making the points personal
 - Prevented resale
 - The firm paid, and each person captured the points
- Added value: made the pie bigger
 - AA spotted empty seats, and utilized them

Dampening price competition?

- Low price to attract rival's customers leads to a lose-lose situation (prisoner's dilemma)
- Instead you should offer higher prices to your rival's customers than your loyal
 - That's exactly the effect of a frequent flyer programme
- Combined with accumulated, progressive discount
 - Loyal even after points is cashed in
- You benefit from your rival having loyal customers
 - Less incentives to cut prices when own loyal consumers

But competition for lock-in?



- Two elements of importance:
 1. Own consumers are more loyal if FFP
 2. Not outweighed by competition for new members

In practice own loyal consumers ...

- No doubt a lock-in effect, although it might be less serious today than 10 years ago
 - Firms have more guidelines for booking tickets
 - A free flight less valuable (but easier to earn points)
- But the main elements for lock-in remains
 - Firms pay, but points are personal
 - Threshold levels still present
 - 80 % book their own tickets (e-systems in place), although often through a travel agency web page
 - De facto no taxation of redeemed points

.. and limited competition for lock-in?

- Norwegian not expected to match SAS' FFP:
 - *'Norwegian may introduce MyReward program on domestic routes, but will most likely not match the costly service level of a full service carrier'* (CE report, page 2)
- In that case, SAS and Norwegian may end up with primarily serving different niches?
 - SAS more attractive for business people than Norwegian?
- Product differentiation will dampen price competition?
 - They avoid *'ensidig konsentrasjon om pris'*, a problem in the present situation according to SAS

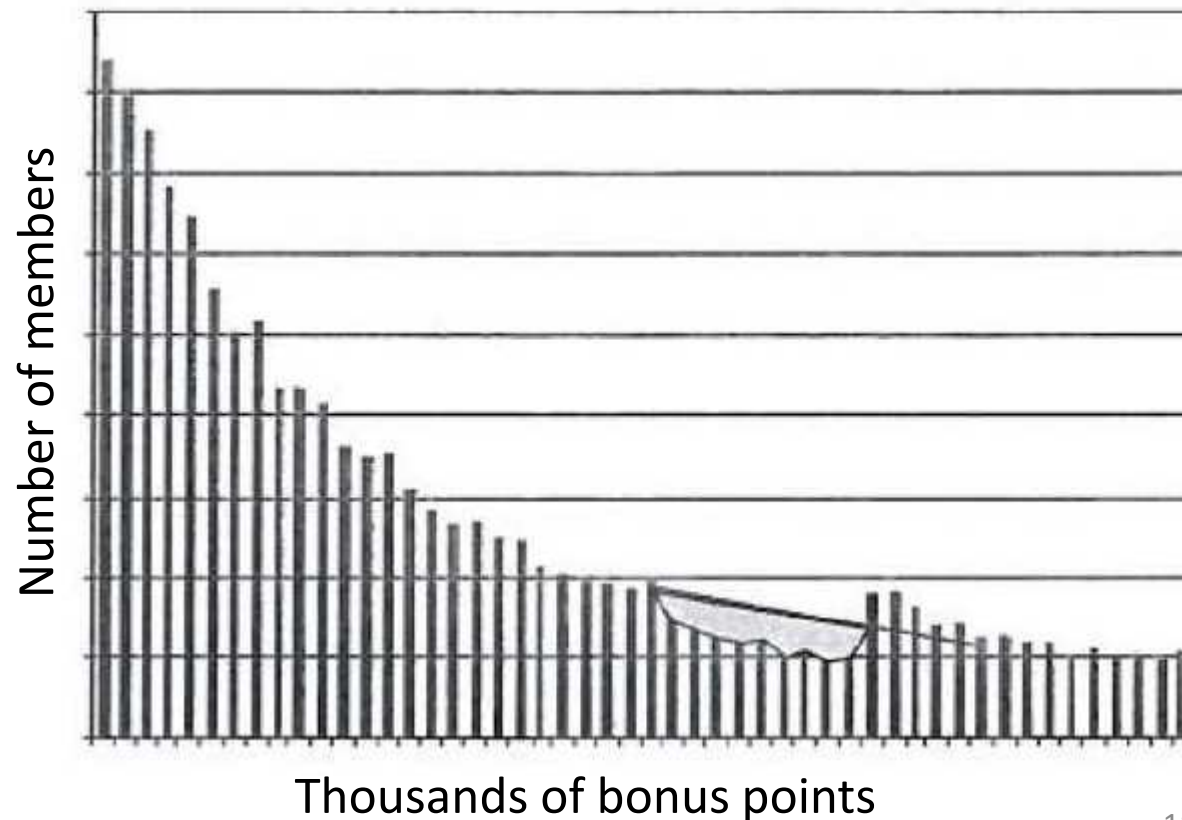
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A proof of very limited lock-in?

- Copenhagen Economics (CE) shows some suction effect of the Gold threshold level

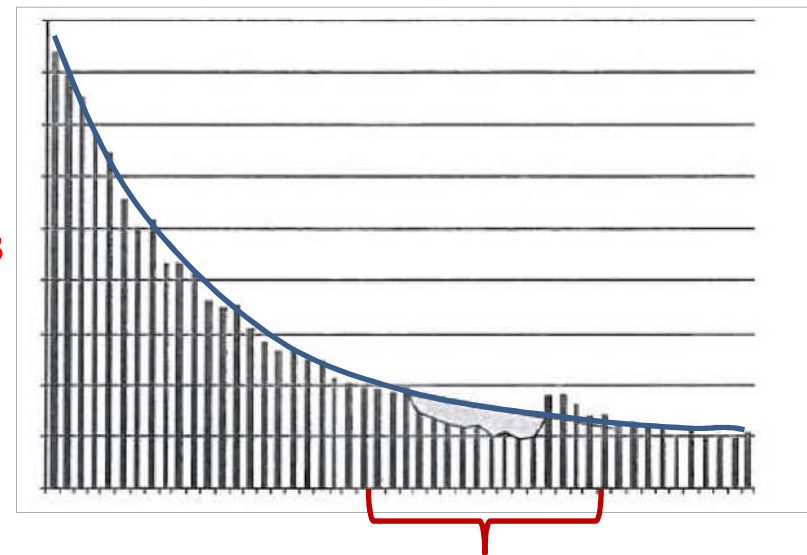
CE Fig 3: Effect of Eurobonus Gold, Denmark 2009



- Is this a 'test' or a count?
- AND is this a plausible comparison?

Our alternative statistical test!

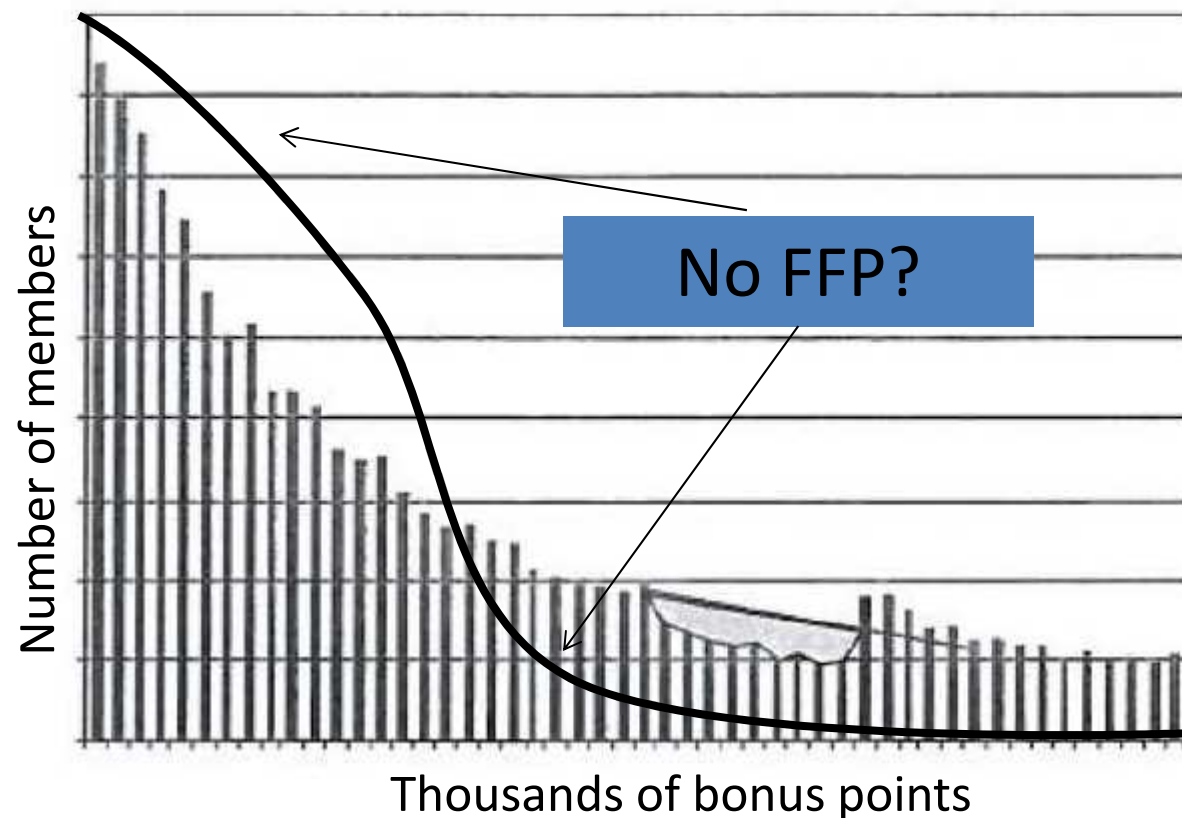
- Copenhagen economics are counting the deviation according to a linear trend
- We estimate the **counterfactual distribution** of points and compare it statistically to the observed pattern
- We find that more than 700 customers change behavior to reach the Gold-threshold faster. The numbers are somewhat higher for Sweden and Norway
- This is a very modest share of the total number of Eurobonus members **BUT a significant share of the customers in the relevant Eurobonus categories**



A proof of very limited lock-in?

- Copenhagen Economics (CE) count up some suction for the Gold threshold level
- What would be a more realistic scenario if no FFP?

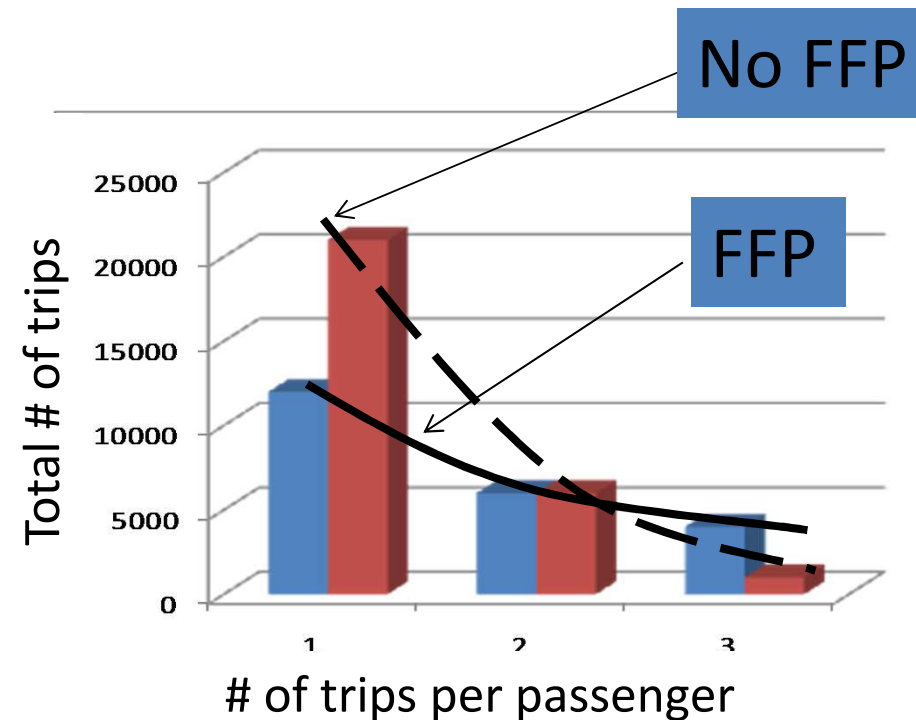
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Banning FFP?

A counterfactual example

- How will passengers be allocated in duopoly?
 - $24000x_1 + 12000x_2 + 8000x_3$ per year
 - If FFP we assume loyalty, and if no FFP we assume a random distribution
- FFP affects the total distribution
 - Not only an effect close to thresholds
- Not captured in CE Figure



Analyzing route level data

- Data on domestic routes in Norway and Sweden and international routes on the triangle Stockholm-Copenhagen-Oslo, and routes out of these
- Analyze various sets or routes, i.e., domestic, international, regional w/without bonus for different groups.
 - Nordic capital triangle
 - Sweden, Norway, Denmark
 - C- vs M-class
- We distinguish between where tickets are bought; from home country or one of the other Nordic countries or elsewhere

Method

- (i) Test the natural experiment in Sweden, bonus allowed-not allowed-allowed again
 - (Challenge: The Swedish ban was only against usage-, not collection of points)
- (ii) Use bonus passenger share as an instrument (RHS) to explain the effect of bonus.
 - (Challenge: Bonus passenger=business passenger, however should give bias in overestimating bonus effects)

Models estimated - Demand

- Systems of demand models for C-/M-class, control for income, frequency, competition (Herfindahl), New passenger class (Y), large customer shares, seasonal- and route specific effects.
 - International routes out of Nordic capitals
(17 routes, 2410 month/route/tickets bought home/elsewhere)
 - Swedish domestic routes (#=873)
 - Nordic triangle routes (#=426)

Models estimated - Demand

- Largest dataset gives reasonable economic predictions;
 - Business customers are elastic: Twice as elastic as the leisure customers
 - Leisure price relevant for the business customer, but business price not relevant for the leisure customer
 - ‘Domestic’ customers less price sensitive than ‘international’ customers
 - Large customer effects larger among ‘domestic’ customers than among ‘international’ customers.
 - Competition and frequency effects are reasonable

Models estimated - Demand

- Prior on bonus share results: The effect should either be positive or equal to zero
- RESULTS: Net effects of bonus shares across domestic and foreign passengers are positive across groups, though individual effects are both negative/positive
 - Net effect positive and significant out of Norway in business class, similarly for routes out of Sweden, but here in M-class
 - Effects are small,; an increase in bonus share of 10% (eg.: from 0.20-0.22) increases pax by less than 2%

Nils-Henrik suggests that negative numbers are ok (N-H.M.von der Fehr 2012, pp. 3-4)

Således heter det for eksempel om bonusprogrammets innvirkning på etterspørselen på utenlandsrutene: *"Vi ville vente å finne enten positive effekter eller ingen effekter. Av 12 mulige ... er 6 positive og signifikante, 2 ikke signifikant forskjellige fra null, og 4 er signifikant negative."* (Steen og Sørsgard, 2011b, s. 3). Steen og Sørsgard legger til at *"det siste representerer et tolkningsproblem"*, men det er egentlig ikke riktig; resultatene er riktignok det motsatte av det man forventer, men tolkningen er enkel nok - bonusprogrammene har i disse tilfellene en positiv og ikke en negativ konkurranseeffekt.

- What do we find? An increase in the bonus-share (when controlling for *a lot* – including price and concentration level) reduces SAS quantity?
- Seems hard to reconcile with a behavioral model of competition or?

Models estimated – C(business) -share equations

- Systems of C(business)-share equations are estimated. Same controls as for demand.
- **Reduced form challenge:** We anticipate both a price effect and a quantity effect from having more bonus passengers on a route: since price is not controlled for results are harder to interpret.
 - Generally we find that the C-share increases in bonus share across models, and models behave better. (Most likely due to less structure being imposed)
 - Despite being significant, the effects are small in magnitude and the lack of price controls makes us conservative with regards to interpretation.

Models estimated – C(business) -share equations

C-share tests across SAS and Norwegian routes as an add-on

- **Idea:** If Eurobonus allows SAS to keep a higher business share on international routes relative to domestic routes as compared to Norwegian, Norwegian would be more negatively affected by a reintroduction of Eurobonus
 - Results show asymmetries but the asymmetries are different whether we look at absolute- or relative numbers. The results lend some evidence for Eurobonus being less strong as a lock-in device, but also here caution is needed when interpreting results.

SWEDISH experiment

- Also based on C-class models, but more robust since we can estimate before/after effects
 - **Result:** No effects whatsoever: *Usage restrictions do not matter, the lock-in effects (if any) emerges via point collection and membership levels.*

Summarizing econometric results

- Lack of bonus data on Norwegian domestic routes prevents any real test of the Norwegian ban.
- The Swedish ban was not restrictive enough to be an effective ban (even having a very high share of business customers)
- We are forced to rely on indirect tests, looking at international routes
- International routes have a significant lower business share than domestic routes reducing the transferability of our results
- Small positive net effects and both positive and negative individual bonus share effects call for carefulness when interpreting the results

Nils-Henrik summarizing econometric results

(N-H.M.von der Fehr 2012, pp. 3-4)

Saken er at til tross for at man har villet, og til tross for at man har gjort et meget hederlig forsøk, har man ikke funnet noe som tyder på at bonusprogrammene har konkurranseeffekter. Den mest nærliggende forklaringen er at det simpelthen ikke er noen slike effekter. Uansett er det misvisende når Konkurransetilsynet anser at *"det er vanskelig å trekke klare konklusjoner"*, for konklusjonen er klar nok: Det er ikke empirisk grunnlag for å hevde at bonusprogrammer har hatt - eller for den saks skyld har eller vil ha - noen avgjørende innvirkning på konkurransen i norsk innenriks luftfart.

- Being surprised does not imply 'wanted to find'
- The conclusion is clear yes – *the data, for various reasons, and partly to our surprise due to the strange Swedish regulation, are not suited to conclude on effects – whether they are positive or negative!*

THAT CANNOT BE USED TO CONCLUDE 'NO EFFECT' NILS-HENRIK

Two (only) quantitative published studies:

- Lederman (2007) in RAND and (2008) in JEMS
- Natural experiment in US airline market
 - Checks how an extension of the airline alliance affects firm behaviour
- She finds a significant effect of FFPs
 - Higher prices, in particular in the business segment and at hubs where they are dominant
- Refers to other studies with analogous results, in particular the 'hub' premium
- Surveys indicate that that FFPs are loyalty-enhancing
 - See for example Dolnicar (2010)

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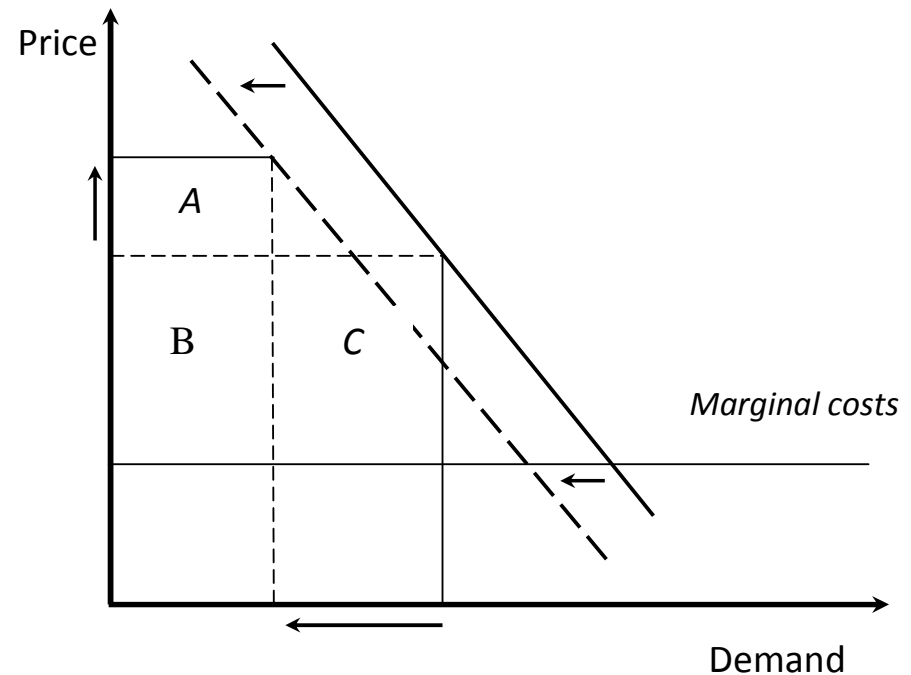
Asymmetries on smaller routes?

- FFP is expected to have asymmetric effects
 - SAS a network company, which overnight can introduce a full-fledged FFP also in Norway
 - Norwegian not part of an alliance, and can not in short or medium term match such an FFP
- Given asymmetry, we have to consider two effects of the introduction of FFP
 - Strategic effect: Dampening of competition
 - Direct effect: Reallocation of sales (business people?)
- Strategic effect is positive for both, while direct effect is expected to be negative for Norwegian

The trade off for Norwegian

- Lower profits in business segment if $C < A$
- Can estimate a critical reduction in tax
- Change in profits depends on
 - Price-cost margin
 - Price increase
- Trade off between strategic and direct effect
 - No trade off for SAS

Effect of FFP for firm with least attractive FFP



Lower profits on smaller routes?

- Business segment is most affected by FFP?
- Relevant for the interpretation of the most likely scenario in the table?
 - High price-cost margin?
 - Not large price increase, since SAS more attractive?
- KT's numerical model not helpful
 - Only direct effect modelled

Reduction in pax that leads to zero change in profits

		Price increase		
		2 %	5 %	10 %
	20 %	9 %	20 %	33 %
Price-cost	40 %	5 %	11 %	23 %
margin	60 %	3 %	8 %	14 %
	80 %	2 %	6 %	11 %

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Higher quality with FFP?

- A SAS survey among 1300 passengers shows that the most important benefits from FFP is:
 - Priority check-in (42 %)
 - Access to airport lounges (33 %)
 - Chance to upgrade (27 %)
 - Free flights (23 %)
- But many of these benefits can be attained even without FFP
 - For example, by purchasing a flexible ticket
- What are the benefits that it is not possible to have if no FFP?

Better marketing with FFP?

- SAS can better target the group of consumers they will inform about their offers
- Can be cost efficient for SAS
- This is relevant , especially if we use a total welfare standard
- But if total welfare standard, what should then be relevant?
 - How to consider profit changes for SAS, Norwegians and other players?

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Some concluding remarks

- We have no natural experiment in the Norwegian market, that could help us to reveal effects of FFP
- There are arguments in favor of a continued ban, on all routes (not only large routes)
 - Lock-in effects still exist, and expected to dampen price competition on small and large routes
 - Efficiency defense limited, since high quality can be achieved by other means than FFP
- But is it enough to ban it?
 - We have no clear empirical evidence of the magnitude of the dampening of price competition

'Delt løsning' no good idea

- If lock-in leads to dampened competition, this will be the case on small **and** large routes
 - If two firms compete, a dampening of competition will take place on both a large and a small route
- The largest routes have the largest turnover, so large harm for consumers on those routes
 - The price increase on a large route can harm more than a shift from duopoly to monopoly on a small route
- Therefore, the choice is either to ban FFP on all routes or ban it on no routes