

Pass-Through of Airline Cost Changes

What Does Economic Research Say?



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seo economic research

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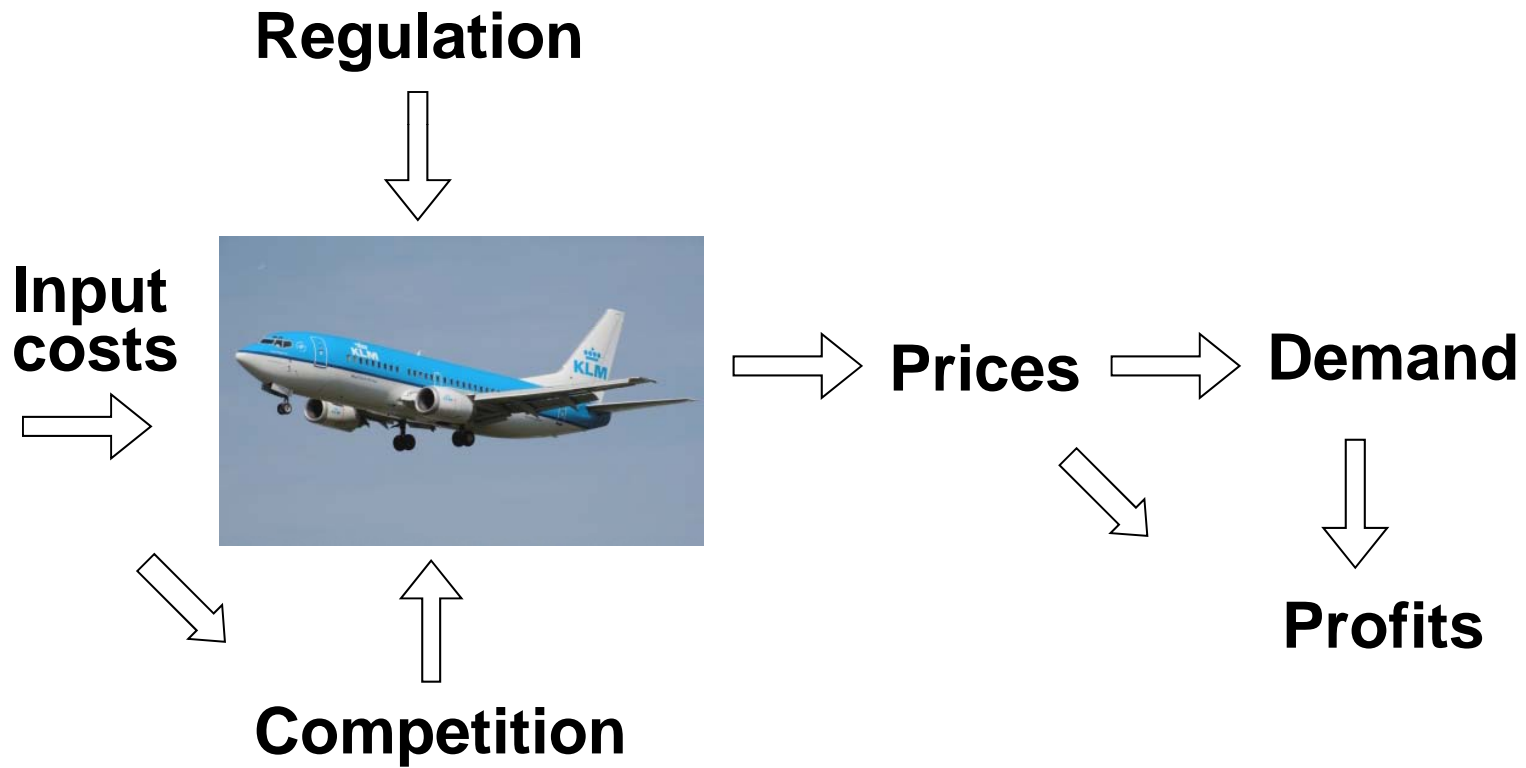
Part 1: Introduction



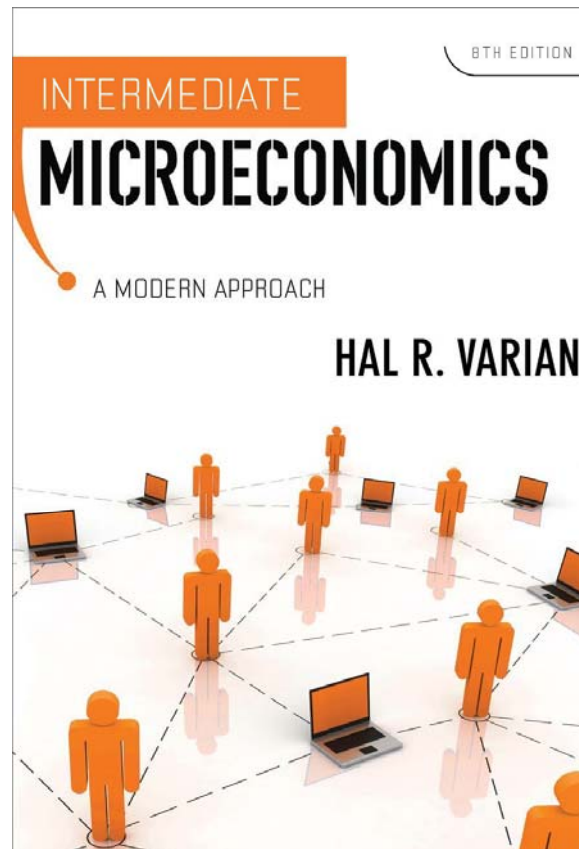
Research questions

- **Airline costs change over time:**
 - **Focus on cost savings**
 - **Fuel prices**
 - **Labour costs**
 - **Government regulation**
- **Who bears higher costs, or benefits from lower costs?**
 - **Which part of cost changes is passed through to aviation users?**
 - **On which conditions does the rate of pass-through depend?**
 - **How are demand and market shares affected?**

A simple framework



Part 2: Economic Theory



Market types

- **Perfect competition**
 - many identical suppliers, homogenous product
 - no economies of scale, free access for new competitors
- **Monopoly / Oligopoly**
 - homogenous product
 - one supplier / limited number of suppliers
- **Monopolistic competition**
 - slightly different products (substitutes)
 - many suppliers



Pass-through in different market types

Type of competition	Assumption	Pass-through
Perfect competition	One-firm cost change	0%
	Sector-wide cost change	100%
Oligopoly	One-firm cost change	<50%
	Sector-wide cost change	>50%
Monopoly and monopolistic competition	Linear demand	50%
	Constant elasticity demand	>100%
	Power demand curve	0-100%
	Log demand curve	100%

Source: survey of academic literature

Aviation markets

- **Number of suppliers: oligopoly**
 - **Limited number of suppliers per origin/destination trip**
 - **Sometimes only one supplier (monopoly)**
 - **Supply changes are 'lumpy' (aircraft sizes, frequencies)**
- **Demand side: airlines offer different products:**
 - **Different routes per origin/destination (direct versus indirect flights, different hubs for indirect flights)**
 - **Frequencies, waiting times, on-board service, ...**
- **Market type 'Differentiated oligopoly' fits best**
- ➔ **One-firm cost changes passed through by (much) less than 50%**
- ➔ **Sector-wide cost changes usually passed through by 50% or more**

Special situations

- **Cross subsidisation**
 - Airlines using profits from low-competition links to reduce prices in high-competition links
 - May be used to ‘cushion’ cost increases in high-competition links
 - ➔ Lower pass-through rate
- **Limited slot capacity**
 - Prices determined by demand vis-a-vis capacity
 - Rent (profit) = Price minus Production costs per unit
 - Airport and governments may claim part of the rent
 - Pass-through rate is zero (except when costs exceed prices)

Cost reductions

- Reducing the costs which have risen is a viable response, e.g.:
 - Higher fuel costs stimulate fuel savings
 - Emissions costs (ETS) stimulate CO2 reduction
- Reducing other costs (e.g. labour costs) raises questions:
 - Why were these costs not reduced without (or before) the cost increase?
 - Irrational behaviour? Not in the interest of shareholders?

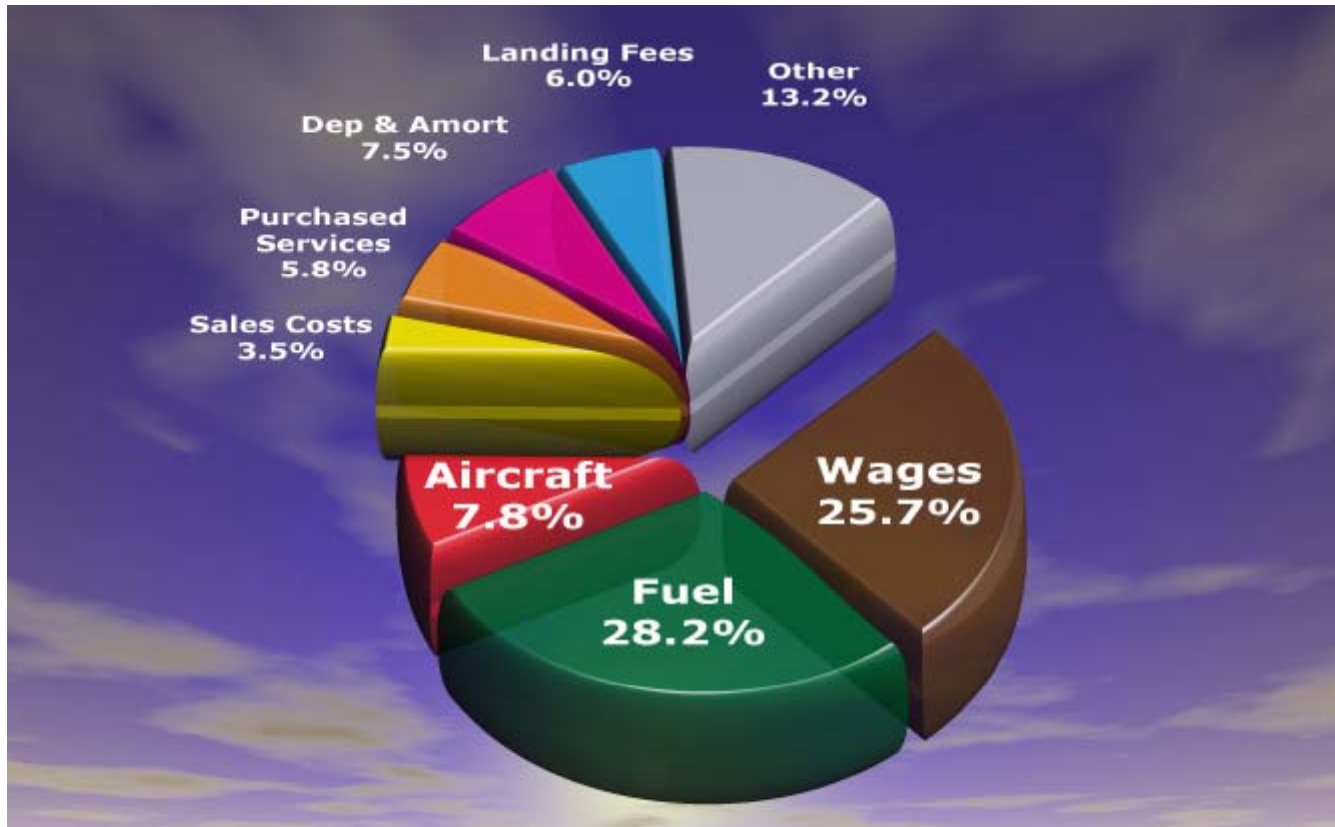
Lagged pass-through

- **Pass-through may be delayed:**
 - **Menu costs**
 - Changing prices itself incurs costs for suppliers
 - **Costs of changing supply**
 - Price changes will induce demand changes, to which supply will have to be adapted
 - **Switching costs**
 - Switching between suppliers will incur costs for customers, inducing them to accept rising prices
- **Short term effect of increasing costs**
 - **Lower profits**
- **Long term effect of increasing costs**
 - **Unprofitable routes are dropped, profitability restored**

Asymmetric pass-through

- **Focus on market share**
 - Price reductions are followed by competitors
 - Price increases are not followed by competitors
- **Co-ordination between suppliers**
 - If co-ordination fails while costs fall, prices will drop strongly
- **Search costs**
 - Consumers may search harder for alternative suppliers when prices go up
- **Consumer response**
 - Consumers may buy early when prices rise, accelerating the price increase
- **Perishable goods**
 - Sellers do not raise prices (fear of spoiled goods)

Part 3: Aviation Practice



Fuel costs

- **PwC (1995)**
 - **90-105% pass-through of kerosene costs**
- **Duplantis (2010), Toru (2011)**
 - **Pass-through close to 100%, but only in times of capacity changes. Otherwise pass-through zero.**
- **Borenstein and Rose (2007)**
 - **Rapid capacity changes impossible for logistical reasons**

Emission costs (ETS)

- **No empirical evidence, only model studies**
- **Many studies use full pass-through, assuming:**
 - **Aviation industry is highly competitive**
- **Other studies use partial pass-through, assuming:**
 - **Monopolistic competition, oligopoly**
 - **Capacity restrictions**
 - **Focus on market share**
 - **High price sensitivity**
 - **Unlevel playing field (EU-based / Non-EU-based airlines)**

Part 4: Conclusions



Conclusions

- **Market-wide cost changes pass-through higher than one-firm cost changes**
 - **Sector-wide cost changes: 100% pass-through in competitive markets, mostly lower (but >50%) in other market types**
 - **One-firm cost changes: 0% pass-through in competitive markets, mostly higher (but <50%) in other market types**
- **Pass-through may be slow and asymmetric**
- **Pass-through zero for congested airports**
- **Fuel costs pass-through close to 100%, although delayed and limited by capacity restrictions**
- **ETS pass-through: only models available, no empirical information**
- **Unlevel playing field on specific routes will limit pass-through**

THANKS FOR YOUR ATTENTION