

NETHERLANDS INSTITUTE FOR SPATIAL RESEARCH

# Noise around airports

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# Research

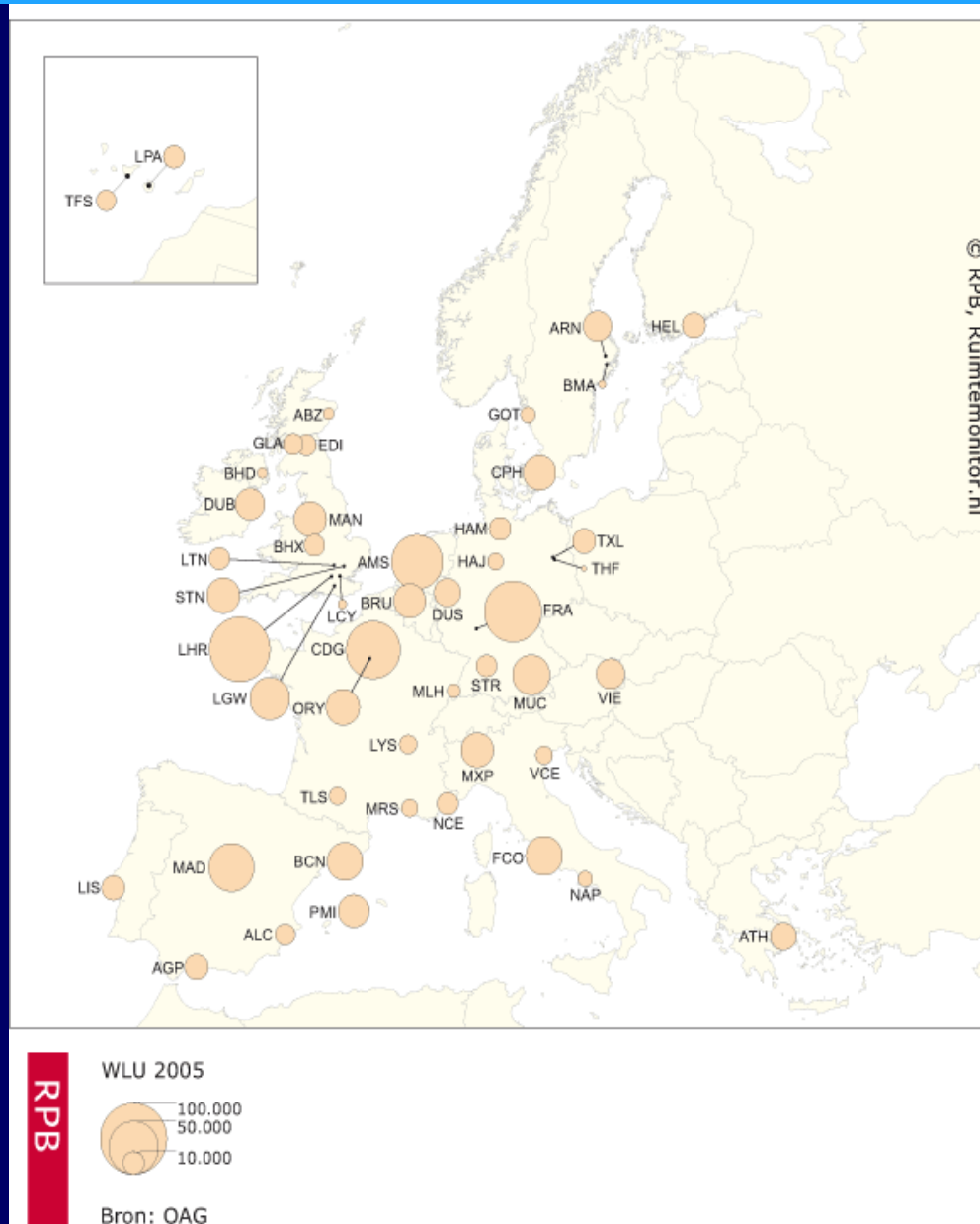
Focus on minimizing noise:

- Most heard disadvantage
- Spatial dimension (localized)

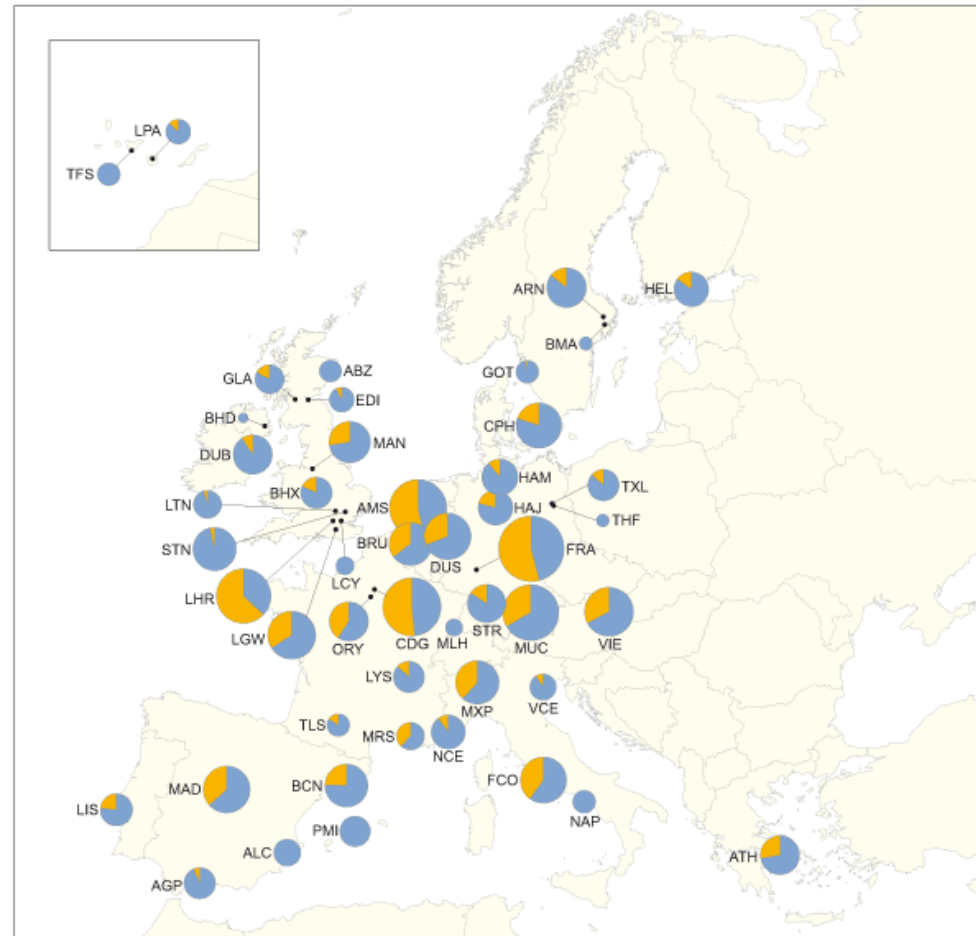
... in relation to transportation output/function of airport



# Transportation output: WLU

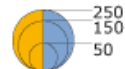


# Transportation output: destinations



RPPB

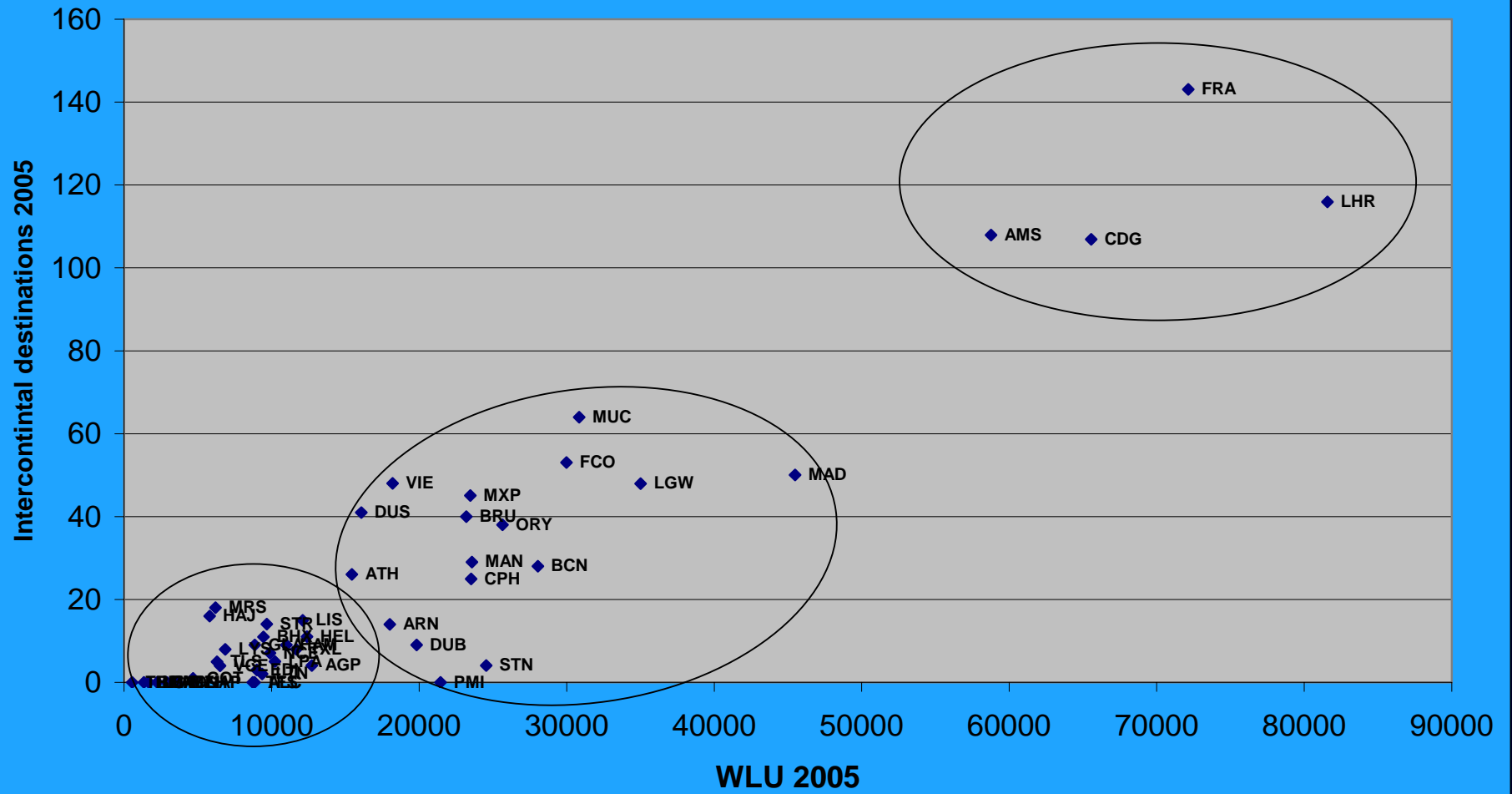
Totaal aantal bestemmingen binnen en buiten Europa 2005



■ Aandeel bestemmingen binnen Europa 2005

■ Aandeel bestemmingen buiten Europa 2005

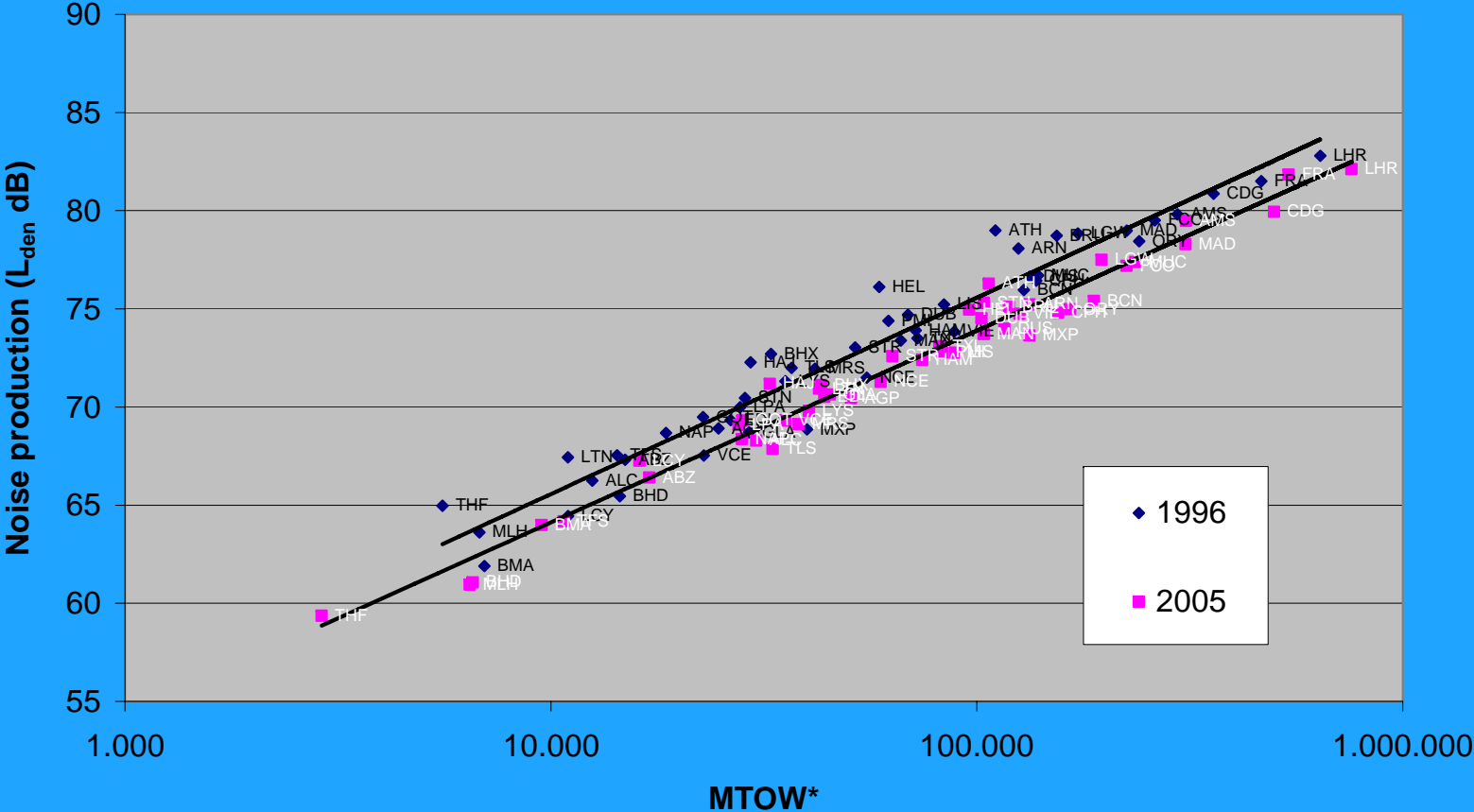
Bron: OAG

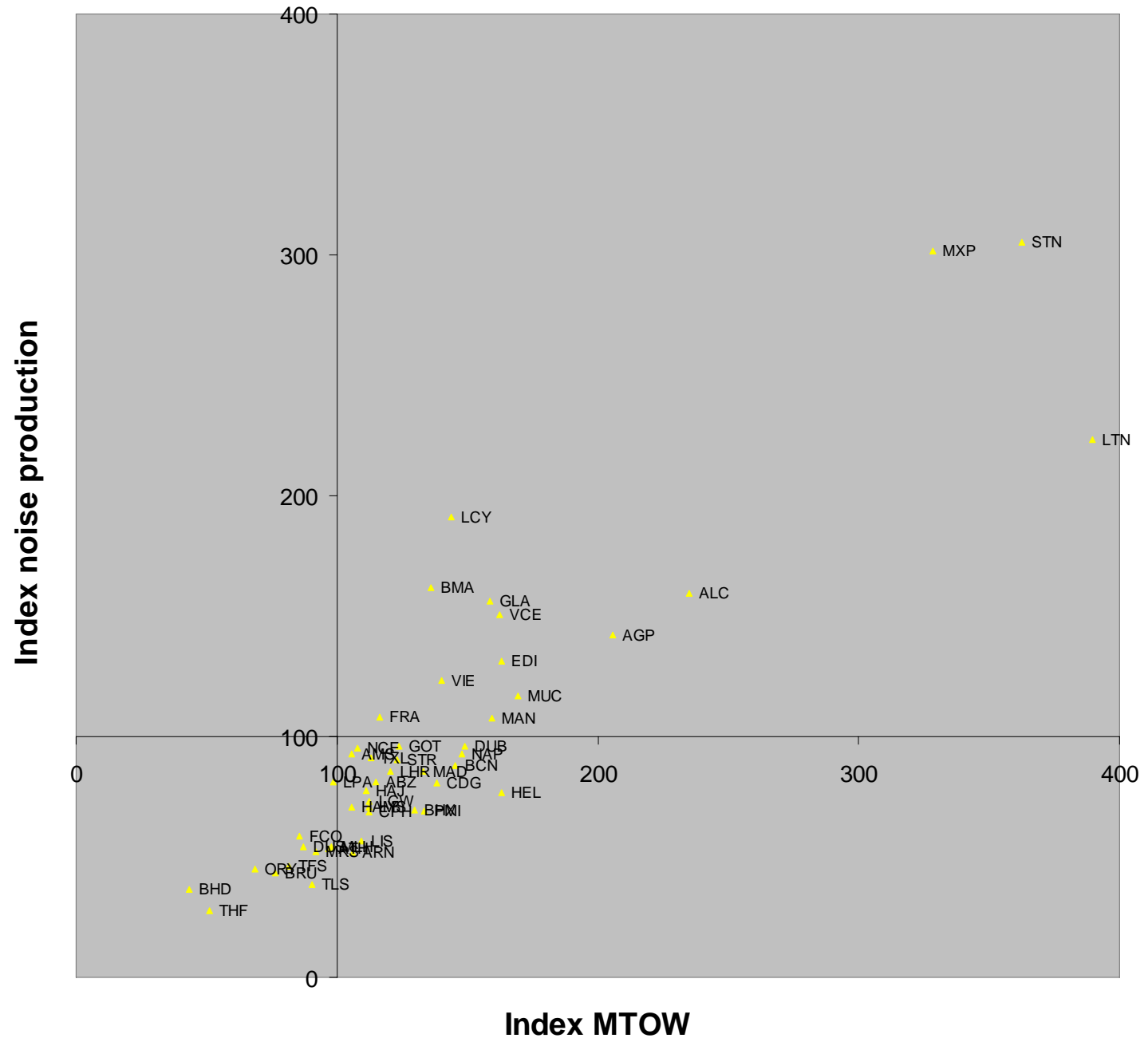


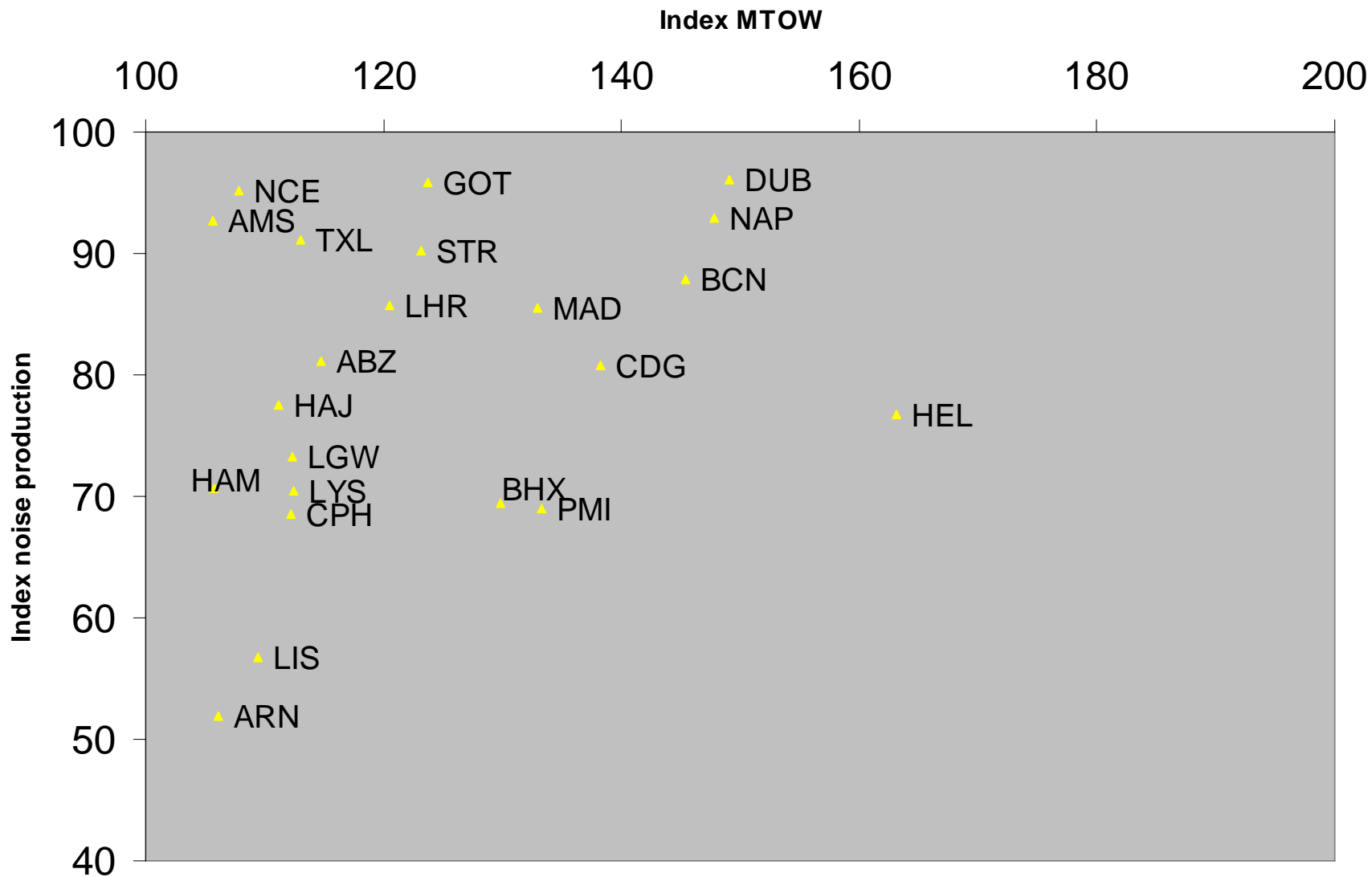
# Airport hierarchy

1. Primary airports: intercontinental hubs
2. Secondary airports: continental hubs
3. Tertiary airports: feeder airports (OD)

# Noise production (emission) in relation to transportation

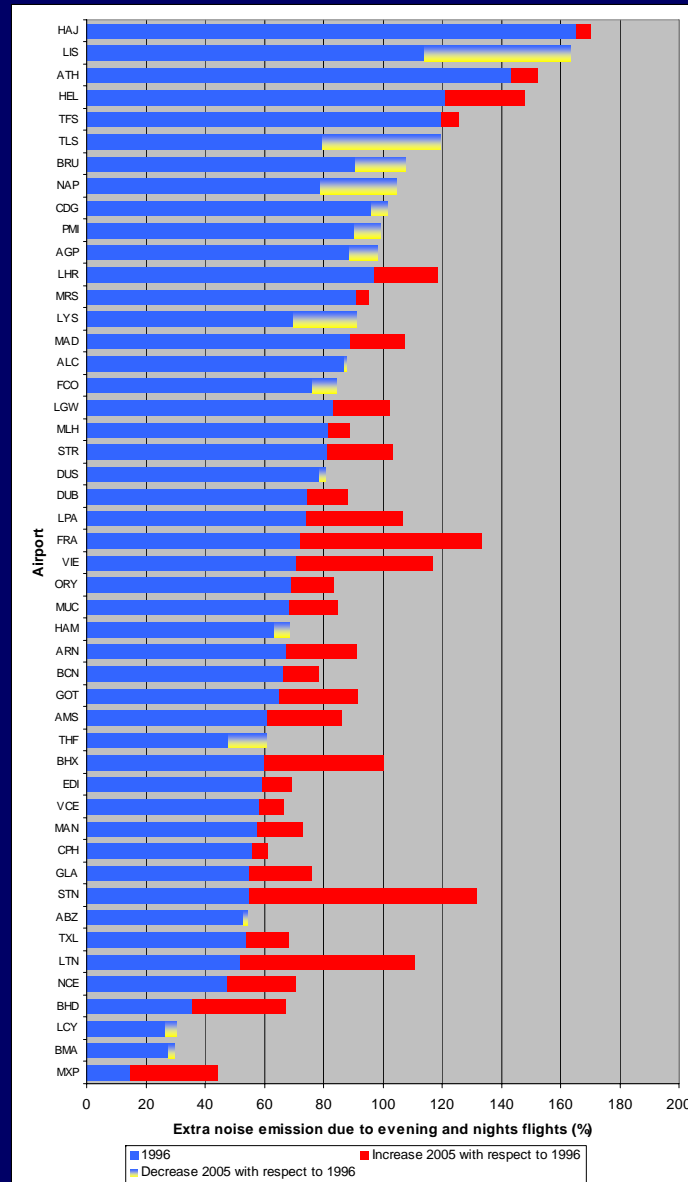






# Differences in noise efficiency explained

- Fleet mix
- Flights at night

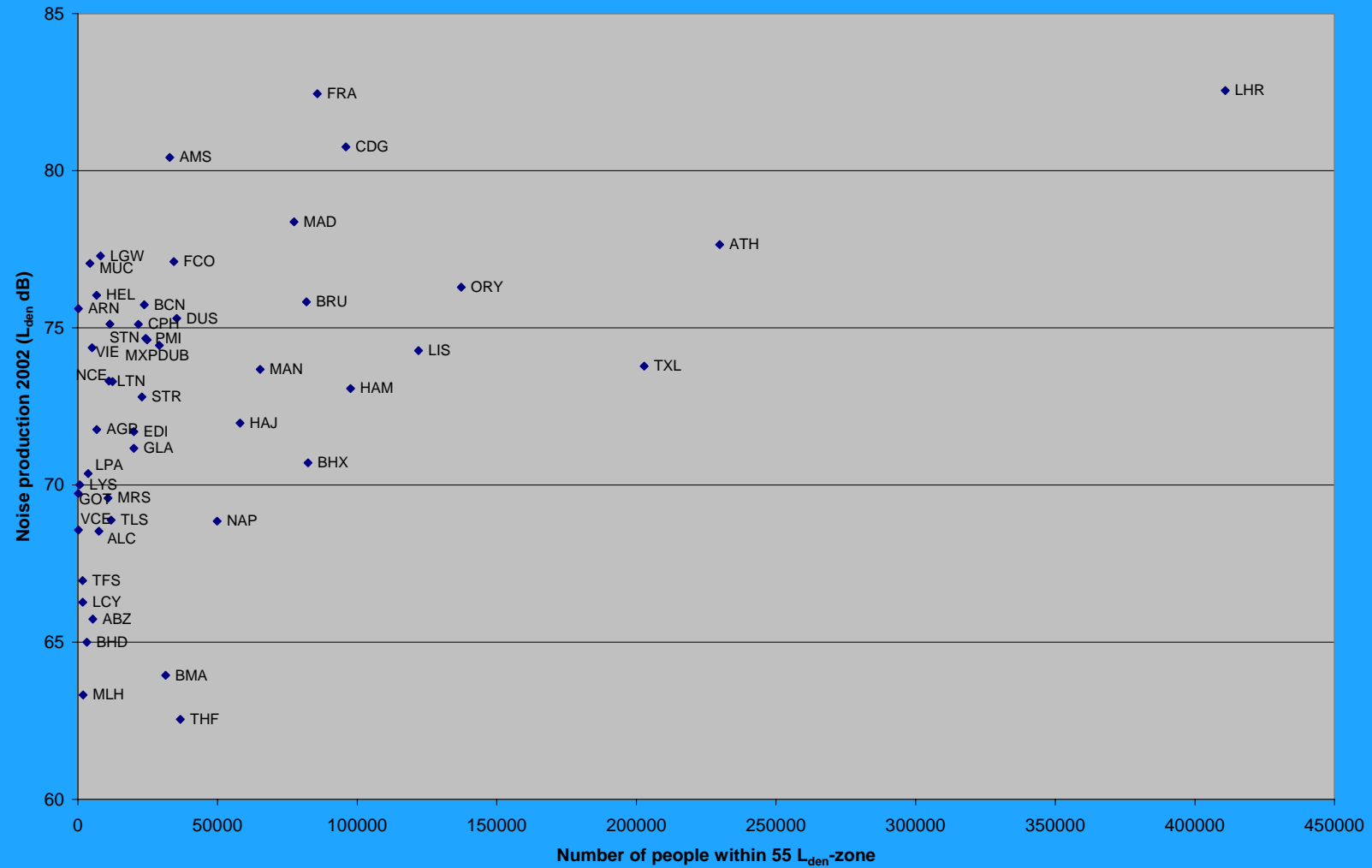


# Mitigating measures

- Limiting exploitation (quota for no. Flights/pax, curfew):
  - noise production: ++,
  - transportation function: --
- Procedural measures:
  - noise production: +,
  - transportation function: +
- Selectivity (financial stimuli):
  - noise production: ++,
  - transportation function: +



# Noise burden: imission



# Annoyance

Relation between immision and hindrance is influenced by personal, cultural, political and institutional factors.

Reducing annoyance implies also investing in communication, trust and compensation.

# Conclusions

- Sustainable development of airports in terms of less noise production and continuation/growth of transportation seems possible
- Different ways to improve this sustainability (noise-efficiency); selectivity most promising
- Spatial planning is important in managing noise immission

New developments offer new opportunities for airports and their noise-efficiency:

- Regional airports/LCC
- City airports
- Cargo airports

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# The role of Cargo



RUI MTELI JK PLANBUREAU

# Cargo is strongest grower

Source: ICAO	Passengers	Passengers	Freight
Year	Million	Billion pKm	Billion tonKm
1950	31	28	0.8
1955	68	61	1.3
1960	106	109	2
1965	177	198	4.8
1970	383	461	11.9
1975	534	687	19.4
1980	748	1089	29
1985	898	1366	40
1990	1165	1894	59
1995	1304	2248	83
2000	1656	3017	118
2005	2022	3720	143
Mean Growth 1975-2005	4.50%	5.80%	6.90%

# Characteristics of AirFreight

- Traditionally shipped in the belly of intercontinental planes.
- But full-freighters take a growing share
- Fast growing are Integrators (FEDEX, UPS, DHL, TNT).
- They operate their own fleet. Fedex 670 airplanes, larger than American airlines or Lufthansa group. DHL with 420 airplanes is also in the top-10, before Air France / KLM.

# Environmental impact of Freighters

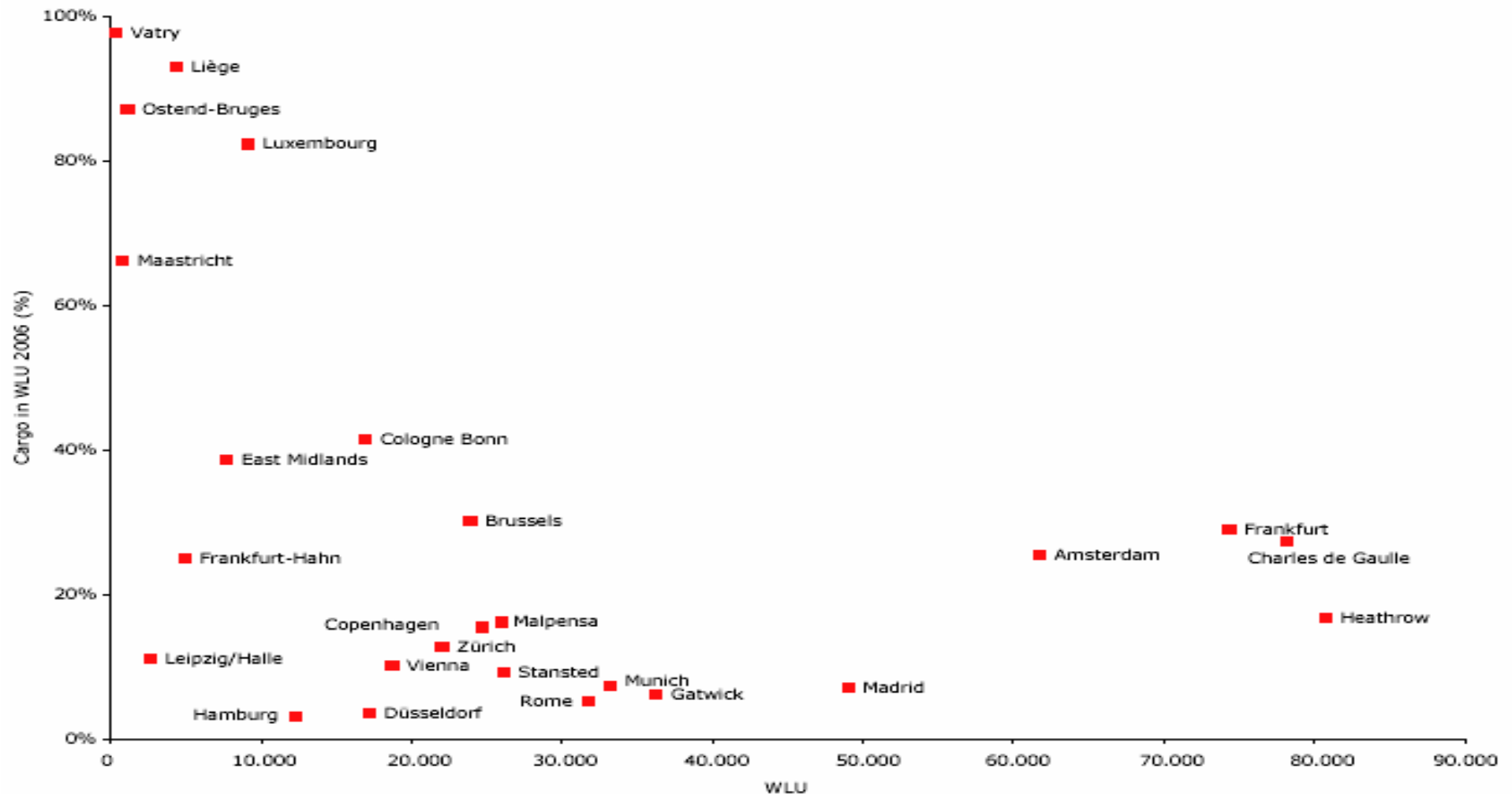
- “ next day delivery”
- night-operations are necessary.
- heavy intercontinental planes
- big role in noise-hindrance.
  
- At Schiphol airport full freighters make only 4% of the flights but contribute for 25% of the noise emissions calculated in Lden.

# Government reactions

- DHL : Brussels => Leipzig/Halle
- FEDEX Paris : no more night slots
- TNT : No hub allowed in AMS and MAA  
=> Liege
- UPS: Koln/Bonn night license until 2015
- Lufthansa cargo : shift to Hahn ? Teaming up with DHL in Leipzig/Halle
- LinkGlobal : buys Parchim Airport
  
- High-speed rail transit : CAREX
- French government pushes Vatry

# Cargo Airports in Europe

Cargo share in WLU (2006) vs. WLU (2006)



## Conclusions, Aviation and the Environment

- Growing prosperity leads to growing propensity to fly but also to higher expectations for the quality of the environment and thus to more restrictions for aviation and airports.
- Fuel-taxes will be applied on aircraft fuel and also TVA. The high taxation will not decrease aviation, only a slow-down in growth will be visible (like the effects of automobile-taxation).

## Some speculations about future developments

1. There will be more specialization and differentiation of airports.
2. The Hubs will remain very important for organizing efficient Intercontinental transport by bundling traffic.
3. Regional airports will provide the connections to the main European destinations and European holiday regions.
4. City airports will provide efficient connections with important city centers for business travelers.
5. Integrators will concentrate on airports apart from high density areas.
6. There will be specialized night-flight airports in more sparsely populated areas.
7. The private-jets revolution will take place because of lowering prices, easy-access, privacy and the malfunctioning of airlines and congested airports. They will use local airports.

## Sensible Policy-making required

- Technology will advance and in the end environmental concerns (noise pollution and emissions) disappear to a large extent.
- Every region will want an airport in that case, like in the past.
- That's why sensible policy making is required.
- It's better to have harsh requirement on maximum noise production and opening times now than to give up international accessibility forever!