Answer **all** questions.

**Question 1 Issues in Aviation, Travel and Tourism**

# Table 1: Price Elasticity of Demand Values for Air Travel

# as a Function of Booking Characteristics

|  |  |
| --- | --- |
| Advance Booking: Days from Departure | Price = $199 (median) |
| 1 – 2 days | -0.57 |
| 3 – 7 days | -1.03 |
| 8 – 14 days | -1.36 |
| 15 – 21 days | -1.58 |
| 22 – 28 days | -1.89 |

# Source: [www.elsevier.com](http://www.elsevier.com), Transportation Research Part A (2014)

**Table 2: Average Income Elasticity of Demand for Inbound UK Tourism**

**By Nationality of Tourists**

|  |  |  |  |
| --- | --- | --- | --- |
| **European Union (EU) Countries** | | | **Non-EU Country** |
| **France** | **Germany** | **Italy** | **US** |
| 1.37 | 1.5 | 1.37 | 2.01 |

Source: European Journal of Economic Studies, 2013, Vol. 4, No. 2

# Table 3: Annual Growth in GDP Per Capita (%) for Selected Countries, Constant Prices

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **France** | **Germany** | **Italy** | **US** |
| **2013** | 0.1 | 0.2 | -2.2 | 0.9 |
| **2014** | 0.4 | 1.2 | -0.1 | 1.6 |
| **2015** | 0.6 | 0.8 | 0.9 | 1.8 |

Source: OECD, accessed 18 August 2017

# Extract 1: A Growth Strategy for Inbound Tourism to Britain from 2012 to 2020

Britain has, in general, a strong product offer. Luxury hotels, shopping, heritage, culture and attractions are world-class and are considered to offer good value for money by people who have visited Britain.

In addition, many visitors are attracted to the countryside and to experiences available outside of London, but are unaware of the opportunities as the majority of product on offer through the tour operators is London-focused.

# Adapted from: http://www.visitbritain.org, April 2013

# Extract 2: Airline Fare Riddle – One Route, Two Prices

Airlines charge different prices for the same trip depending on which direction passengers are flying. International flights had the biggest directional price differences. Between New York and London round-trip, travellers paid $2,507 on average if they started in New York, and $1,672 if they began the trip departing from London, a 50% difference. Between New York and Tel Aviv (major city in Israel), people leaving from the U.S. paid 28% more on average than people in Israel if the round-trip began from New York than if the trip started at Tel Aviv.

In theory, there are just as many passengers traveling back and forth between any pair of cities. And there isn’t any cost difference to the airlines for the round-trip no matter which direction is flown first.

“I think the U.S. consumer is being gouged by the airlines, but it’s the nature of commerce,” said chief executive officer of Da’at Educational Expeditions, which organises group tours in Israel. “There’s no way a 28% price difference between New York and Tel Aviv can be attributed to fewer travellers on a round-trip route. Travellers go both ways.” Airlines try to get the most revenue out of each flight based on what people are willing to pay, said a former airline-pricing executive.

American Airlines, Delta and United Airlines all say directional differences result from simple supply-and-demand pricing. Some cities have more buyers of last-minute tickets at higher prices, which drives up the average for tickets sold in one direction over another, a Delta spokesman said. A United spokesman said holiday travel periods drive demand directionally, pushing fares higher.

Airlines say their prices vary between countries, which is why airline websites often ask travellers to identify their country when they first begin shopping for fares. A weak economy in a particular country might prompt airlines to offer lower prices to stimulate travel from that location, while not offering those prices on the same route in the opposite direction.

In Israel, travellers headed for New York are willing to make a stop in Europe to get lower fares. U.S. travellers prefer the convenience and perceived safety advantages of nonstop, direct flights. That forces airlines to offer lower prices in Israel to better compete against European airlines on the New York-Tel Aviv route.

Adapted from: The Wall Street Journal, 7 January 2015

# Extract 3: London’s Airports

London, Europe’s financial centre, needs more airport capacity. In 2014, its three main airports (Heathrow, Gatwick and Stansted), with 4 runways between them, handled 130m passengers, 16m more than New York’s main three, which have nine. Heathrow is operating at full capacity, and has been for at least five years. This congestion is damaging. As routes become busier, ticket prices go up and other hubs, such as Dubai International, become more attractive to travellers. Dubai has already overtaken Heathrow in terms of international passenger numbers.

Without expansion, both regional and international passengers lose out. As airports become more crowded, fewer domestic flights can be slotted in, potentially hindering business people in places such as Manchester and Newcastle who use Heathrow to transfer to America or Asia. Crowding also leaves less scope for links to emerging markets. Expanding Heathrow is estimated to boost GDP by 0.65-0.75% by 2050.

Although the number of residents affected by aircraft noise has fallen sharply over the past two decades as planes have become quieter, it still affects over 200,000 people. Air pollution, already high in areas near the airport, would increase and could blight up to 47,000 homes, unless a low-emission zone was put into place. However, the expansion is likely to be beneficial if Heathrow provides more generous compensation to those who are affected by noise or have to relocate their homes.

Adapted from: The Economist, 4 July 2015

# Extract 4: Airport Expansion – What Happens Next?

The plan involves building a new **3,500m runway** at an estimated cost of **£18.6bn**. The Heathrow scheme is predicted to create the most jobs and make the most money for the country, adding £147bn in economic growth and 70,000 jobs by 2050. Heathrow expansion is seen as the best short-term option to keep Britain competitive with its European rivals. Heathrow is a big employer and supporters cite a knock-on effect on businesses in the area.

A report by economist Sir Howard Davies said that the new runway should come with severe restrictions to reduce the environmental and noise effects. Night flights should be banned and the government should pledge not to build a fourth runway. The report also recommends an aviation noise levy to fund insulation for homes and schools, and says a legal commitment should be made on air quality.

## What are the downsides?

Heathrow would become the biggest emitter of carbon dioxide in the country. Noise pollution would become even worse for the 760,000 people already living under the flight path – and nearly 800 homes would have to be demolished to build the new runway due to its location in a heavily built-up area.

No one really knows whether long-term aviation will continue growing as it has so far. Even those who are building the new generation of airports wonder if the trend will hold.

Adapted from: BBC, 29 June 2015 and 1 July 2015

**Questions**

1. Explain why the magnitude of the price elasticity of demand for air travel increases the more days in advance of the departure the booking is made. [2]
2. (i) Explain what a value of 1.5 for the average income elasticity of demand for inbound   
    UK tourism from Germany means. [2]

(ii) Explain whether tour operators can make use of the information in Tables 2 and 3 and Extract 1 to boost total revenue. [4]

1. Discuss whether the ‘Airline Fare Riddle – One Route, Two Prices’ (Extract 2) is an example of price discrimination. [8]
2. With the aid of a diagram, explain what determines whether consumers or producers would likely bear a greater tax burden when ‘an aviation noise levy’ (Extract 4) is imposed. [4]
3. In view of the possible economic impact, assess whether the expansion of the Heathrow runway can ever be justified. [10]

**Question 1 – Issues in Aviation, Travel and Tourism**

1. Explain why the magnitude of the price elasticity of demand for air travel increases the more days in advance of the departure the booking is made. [2]

Question Analysis

|  |  |
| --- | --- |
| *‘why… PED for air travel increases’* | * *asking for PED factor relevant to air travel market* |
|  |  |
| *‘more days in advance of departure the booking is made’* | * *PED factor of ‘time period’ 🡪 to be explained* |

Consumers have the time to search for alternative substitutes when the number of days is further from the departure date. For a 1% rise in airfare tickets, consumers are inclined to switch to other airline companies 🡪 leads to a larger than proportionate fall in quantity demanded by 1.89%, implying a price elastic demand

1. (i) Explain what a value of 1.5 for the average income elasticity of demand for inbound   
    UK tourism from Germany means. [2]

Question Analysis

|  |  |
| --- | --- |
| *‘what a value of 1.5 … means’* | *explain the significance of:*   * *a positive value* * *a value of 1.5* |
|  |  |
| *‘YED… from Germany’* | * *apply to incomes of Germans (refer to Table 3)* |

It means that when incomes of Germans rise\* (Table 3) by 10%#, the quantity demanded for UK tourism rises\* by 15%#, **ceteris paribus**, suggesting a luxury good.

(ii) Explain whether tour operators can make use of the information in Tables 2 and 3 and Extract 1 to boost total revenue. [4]

**Thesis: tour operators can make use of the info (Tables 2 & 3 & Ext 1) to ↑ TR**

Given the fastest GDP per capita growth rate in US (Table 3) and highest income elasticity of demand (Table 2), tour operators should focus on organising tour packages:

1. to the target audience of Americans
2. that tends to be more high-end in nature e.g. luxury hotels’ accommodation and the itinerary should include luxury shopping spree tours, heritage trails, sightseeing places to cultural sites such as museums, countryside stay-overs as well as visiting places beyond / outside of London (Ext 1)

* more than proportionate (largest) ↑ in demand🡪 shortage 🡪 exert upward pressure on price 🡪 largest ↑ equilibrium P and ↑ equilibrium Q 🡪 largest ↑ in TR

**Anti-Thesis: tour operators cannot make use of the information to ↑ TR (any ONE)**

* <P> The given information in Tables 2 and 3 is incomplete 🡪 need other pieces of info. to complement the given info. for the tour operators to make use of to ↑ TR
* Table 2 only provides YED value for 4 selected countries but for an unknown time period of when the YED value is measured (likely before 2013 as stated in the source), i.e. limitations of YED values in terms of:

1. limited number of 4 countries only and tourism to UK only 🡪 lack of YED values on other countries that tour operators could also make use of to ↑ TR
2. limited and obsolete data for years 2016 and beyond 🡪 YED and EG rate values may change over time, for e.g. tourists from certain countries may perceive overseas travel to UK as more of a necessity in future

* Table 3 only provides EG rate values on (1) 4 selected countries and (2) for a short time period of 2013 to 2015 🡪 limitations of EG rate values in terms of:

1. limited number of 4 countries only and tourism to UK only 🡪 lack of income values on other countries that tour operators could also make use of to ↑ TR
2. limited and obsolete data for years 2016 and beyond 🡪 EG rate values may change over time, for e.g. Italy’s EG rate went from negative to positive within 3 years

* Over time, tour operators have to adjust their strategy in terms of their itinerary and tour packages so as to ↑ TR. However, due to the limited info., tour operators may be less able to ↑ TR by the largest extent.
* Ceteris paribus assumption is unlikely to hold true in reality (another limitation of elasticity concept) 🡪 changes in other factors such as changes in external environment / conditions also affect TR, for e.g.:

1. there could have been an appreciation of UK pounds against currencies of major economies that may make travelling to UK more expensive
2. ↑ terrorism may deter consumers from travelling 🡪 change in tastes and preferences towards overseas travelling

* despite EG of the 4 countries, their citizens ↓ demand for UK tourism 🡪 tour operators’ TR may not ↑

1. Discuss whether the ‘Airline Fare Riddle – One Route, Two Prices’ (Extract 2) is an example of price discrimination. [8]

<Define price discrimination (P.D.)>: P.D. is defined as the selling of the same good at different prices for reasons not associated with differences in marginal costs (MC).

**Thesis: the airfare riddle is an example of price discrimination P.D.   
(3rd degree)**

For P.D. to be successful, the firm must meet the following 3 conditions (2nd and 3rd conditions are much more important than 1st condition):

1. The firm must have the ability to set price, i.e. it is a price setter, which gives it the ability to charge different prices to different consumers or for different units.

* Airlines are oligopolists that generally possess high market power due to the high barriers to entry (BTEs – to define) in the form of structural BTEs. Airlines have to purchase costly aircraft fleets that require the spreading of such high costs over a large output to allow the lowering of average costs of production (AC) via the reaping of internal economies of scale (EOS). New entrants that usually start small for an untested product cannot gain significant internal EOS to lower AC, thus are less able to effectively compete with incumbents as they are less price competitive, deterring them from entering the market.
* Thus, due to the high market power that airlines have, they are able to set prices.

1. The firm must have the ability to separate / segment the market into separate and identifiable groups at low or no cost, so that the firm can charge different price to different consumers or groups of consumers. Also, there must be no possibility of resale between the different markets. Else, consumers can buy goods in the cheaper market and resell it in the more expensive market, thus restoring price equality, and remove the firm’s ability to price discriminate.

* <E & E> Airlines can segment the market into those who make advance booking air ticket purchases (early birds) vs. last minute buyers or for different flight routes (New York to London vs. London to New York) etc. based on the different booking characteristics of the different consumers (Table 1 & Ext 2) or different travel origin and destination at the same costs. Once the online airline booking system is properly established, airlines do not need to incur additional costs to identify these different travellers. The system will be able to capture the air ticket purchases of different travellers based on the difference in the number of days between the booking date and the flight departure date, difference in travel origin and destination, and then adjust the airfares accordingly via some pricing formula embedded within the system.
* There is no possibility of resale between the different markets as different passengers have different flight departure timings and dates, different flight origin and destination, different luggage requirements, different needs (e.g. wheelchair-bound passengers or those with children). Also, air tickets are non-transferrable and thus resalable, as each air ticket bears the name of the flying passenger.
* Hence, airlines are able to segment the market into separate and identifiable groups at no cost, as well as prevent the resale of air tickets between markets.

1. The price elasticity of demand (PED) must differ between different consumers and / or groups of consumers so that the firm is able to charge a higher price in the market where demand is more price inelastic and a lower price where the demand is more price elastic. <Explain a

Different PED due to differences in proportion of income spent on the good likely because of differing economic conditions between different countries

* Based on the difference in the proportion of income spent on air tickets, the magnitude of PED is much higher for lower-income consumers.
* Fro Ext 2 🡪 Travellers pay a difference of up to 50% due to a **higher proportion of income spent on the good** for an average citizen living in London / Israel (lower-income countries relative to New York) compared to an average citizen living in New York. Passengers (New Yorkers) who are relatively higher-income earners than lower-income earners (Londoners and Israelis) spend a small % of income on air tickets. They are likely to be indifferent even if airfares were to rise, hence face a relatively price inelastic demand compared to Londoners and Israelis.
* Similarly, from Ext 2, a weak economy in a particular country (e.g. Italy in 2013 and 2014 in Table 3) might prompt airlines to offer lower prices to stimulate travel from that location due to relatively more price elastic demand (higher proportion of income spent on the good), while not offering those prices on the same route in the opposite direction that could have a relatively more price inelastic demand.

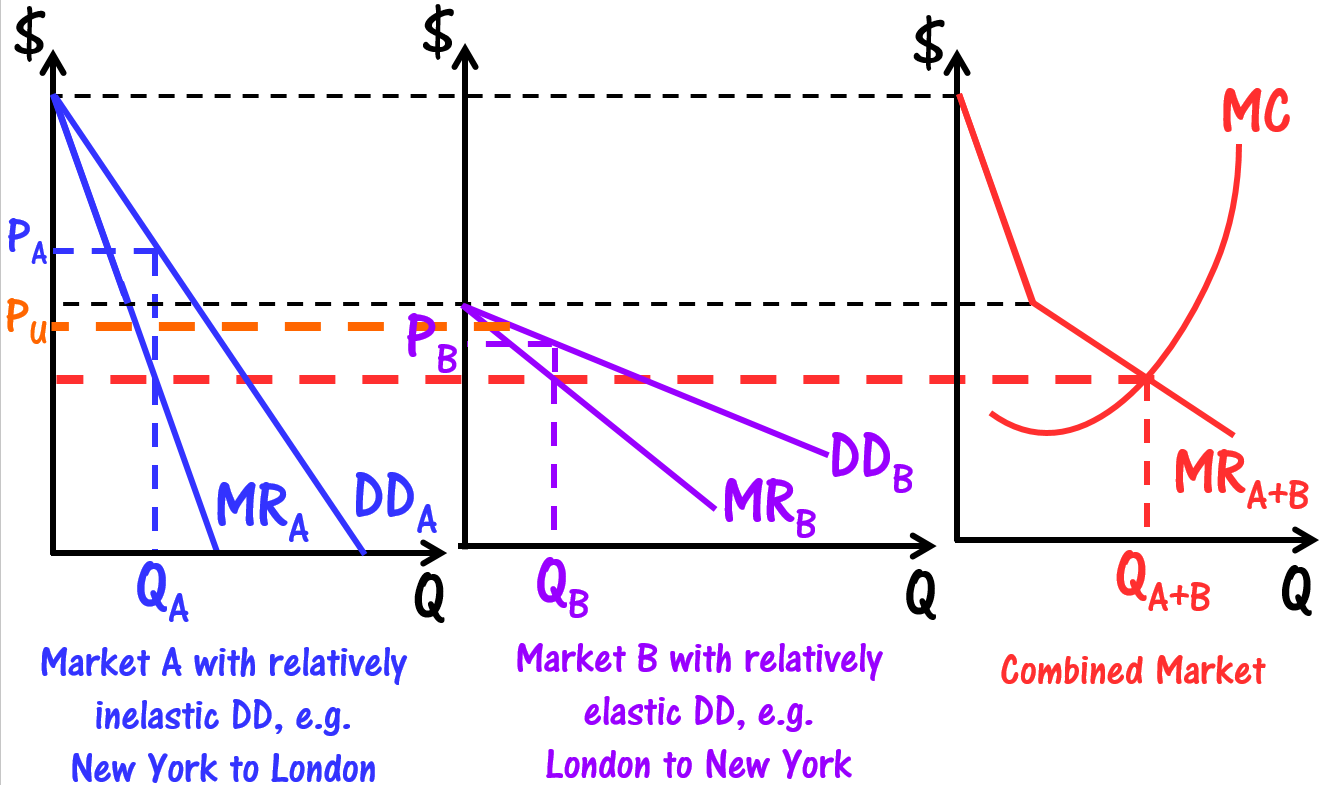


Figure 1: charging different prices in different markets – 3rd degree P.D.

Airlines are practising third degree P.D. based on the differences in PED. This explains why travellers paid a much higher price of PA ($2,507) on average if they started in New York, and a lower price of PB ($1,672) if they began the trip departing from London, a 50% difference; and people leaving from the U.S. paid 28% more on average than people in Israel if the round-trip began from New York than if the trip started at Tel Aviv (Ext 2). By charging those with a relatively price inelastic demand a higher price and those with a relatively price elastic demand a lower price, airlines are able to generate higher total revenue (TR), since quantity demanded falls less than proportionately for the former and rises more than proportionately for the latter. In contrast, uniform pricing at PU does not allow airlines to maximise profits, since TR can be ↑ by shifting output from Market A to Market B as the ↓ TR in Market A (given the lower MRA) is more than compensated by the ↑ TR in Market B (given the higher MRB).

Given ‘no cost difference to the airlines for the round-trip no matter which direction is flown first’ (Ext 2), airlines are able to ↑ profits that is in line with their profit-maximising aim, incentivising them to practise third degree P.D.

Different PED due to differing degree of necessity

* Based on the different booking characteristics of the different consumers, the magnitude of the PED value increases the more days in advance of the departure the booking is made.
* Ext 2 🡪 for the same round-trip, **some cities have more last-minute ticket buyers** (usually business travellers who may have to travel urgently / close to departure date) usually have a very price inelastic demand (Table 1) as they may not have sufficient time to search for other alternatives as explained in part (a). Also, due to the high degree of necessity in terms of having to fly on a specific date to clinch business deals overseas unlike leisure travellers who can fly on another date.
* Thus, last-minute ticket buyers (usually business travellers) face a very price inelastic demand as they are not very responsive to airfare increase, compared to early birds. From Ext 2, airlines usually charge last-minute buyers more expensive airfares due to the higher willingness to pay, and charge early birds lower airfares to ‘try to get the most revenue out of each flight based on what people are willing to pay’ due to differences in PED. they began the trip departing from London, a 50% difference; and people leaving from the U.S. paid 28% more on average than people in Israel if the round-trip began from New York than if the trip started at Tel Aviv (Ext 2). By charging those with a relatively price inelastic demand a higher price and those with a relatively price elastic demand a lower price, airlines are able to generate higher total revenue (TR), since quantity demanded falls less than proportionately for the former and rises more than proportionately for the latter. In contrast, uniform pricing at PU does not allow airlines to maximise profits, since TR can be ↑ by shifting output from Market A to Market B as the ↓ TR in Market A (given the lower MRA) is more than compensated by the ↑ TR in Market B (given the higher MRB).
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Different PED due to differing degree of necessity

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* Given ‘no cost difference to the airlines for the round-trip no matter which direction is flown first’ (Ext 2), airlines are able to ↑ profits that is in line with their profit-maximising aim, incentivising them to practise third degree P.D.

**Anti-Thesis: airfare riddle is not an example of P.D.**

1. The different airfares could be due to differences in demand 🡪 **differences in MC**.

* The higher the demand, the higher the MC 🡪 directional differences in pricing of air tickets. The difference in demand could be due to for e.g. <explain any ONE>:
* more holiday travel periods (Ext 2) in New York than London and Israel 🡪 more people in New York go to London / Israel than the other way round
* smaller ↑ demand in a weak economy e.g. France in 2015 compared to a larger ↑ in demand in a booming economy e.g. USA (Table 3), and also due to a more income elastic demand for USA than for France (Table 2)
* More passengers on board likely means a higher MC for airlines, as they need to have more flight attendants to service the passengers, incur higher jet fuel costs etc. 🡪 airlines pass on the higher MC to consumers as higher prices <graph + explain>
* Also, there could be differences in airport landing fees in different countries 🡪 difference in MC
* Thus, the different airfares is due to different MC, and not a case of P.D.

In theory, there are just as many passengers traveling back and forth between any pair of cities 🡪 unlikely to be due to differences in the number of travellers on a round-route trip, i.e. no difference in demand, as ‘travellers go both ways’ (Ext 2). In reality, even if there is indeed difference in MC, the difference is unlikely to be so vastly different to justify the huge difference of 28% and 50% in airfares.

The air flights could be deemed as **different goods** in the eyes of the consumers 🡪 different utility derived by consumers, thus differences in demand 🡪 justifies the difference in airfares.

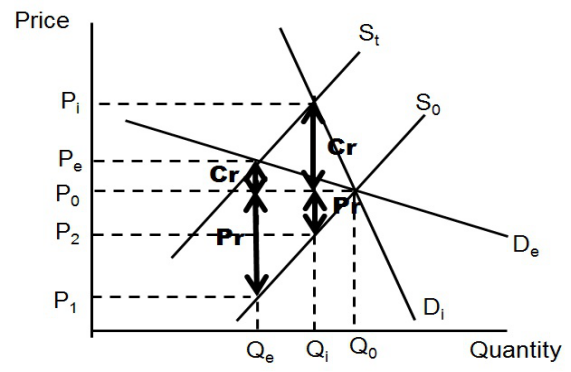
* Due to the convenience and perceived safety advantages of nonstop direct flights from New-York to Tel-Aviv (Ext 2), the flight experience is smoother than making a stopover In Europe first (different service) from Tel-Aviv to New York. Thus, the utility derived from such nonstop direct flights is higher (different good). Also, the MC could be higher since the airlines may have to offer more frills on board e.g. more food and beverage for direct flights compared to stopover flights.
* Thus, the case of non-stop direct flights vs. stopover flights is not an example of P.D. since they are different goods, with higher cost differences that justify the difference in airfares.

**Evaluation**

* Vested interests of airline companies to account for the difference in airfares by justifying the differences in demand and supply in different countries 🡪 need to conduct more research / have accurate information on the MC of round-trips that depart from New York to London / Israel and then compare against the MC of round-trips that depart from London / Israel to New York fly 🡪 help to determine if the difference in airfares is largely due to differences in MC or airlines’ attempt to gouge consumers because of different PED. If there is indeed MC difference, the airfare riddle may not be an example of P.D. However, even if there is MC difference, it is unlikely to result in a 28% and 50% difference in airfares, thus the airfare riddle is likely to be an example of 3rd degree P.D.
* Depends on the type of air flights 🡪 stopover flights vs direct flights could be perceived as different services with different MC 🡪 not an example of 3rd degree P.D.

1. With the aid of a diagram, explain what determines whether consumers or producers would likely bear a greater tax burden when ‘an aviation noise levy’ (Extract 4) is imposed.   
    [4]

* There is a need to consider the price elasticity of demand (PED) relative to its price elasticity of supply (PES). The economic agent who is more responsive to price changes will bear a lower incidence of the aviation noise levy (indirect tax).
* Supply of air travel is likely to be relatively more price inelastic compared to demand, i.e. absolute value of PED > PES, since the number of seats on an airplane is fixed and for domestic flights, consumers have substitutes of coach and rail to switch to.
* Airline companies are less able to pass on a larger proportion of the aviation noise levy to the passengers as the airline companies are less able to adjust quantity supplied. This is because even if an airplane is half filled with passengers, it will still have to take-off. Similarly, the airline companies cannot allow one additional passenger on board if the flight to a specific destination at a specific timing is already fully booked.
* Thus, the passengers have the greater bargaining power over the airline companies, as they can cut back the quantity demanded for air travel by a much larger extent if the airline companies attempt to pass on the aviation noise levy to them by raising prices.
* As such, for every unit of air travel consumed, passengers bear a smaller tax burden of PeP0, whereas the airline companies bear the remaining greater tax burden of P0P1.



1. In view of the possible economic impact, assess whether the expansion of the Heathrow runway can ever be justified. [10]

**Thesis: -ve impact if runway is expanded (not justified)**

* Costs to society 🡪 allocative inefficiency due to air and noise pollution <graph>; MPC and MPB for consumption of Heathrow runway (airline companies’ POV) 🡪 at the expense of sustainable EG, non-material SOL

Other costs include:

* Costs to residents who reside at where the runway will be constructed 🡪 must relocate to a new location 🡪 must search for a suitable location to relocate, refurbishing of new home etc. 🡪 ↓ utility derived
* Increased costs to residents near the airport after the runway is expanded due to more air flights 🡪 increased noise pollution

**Anti-Thesis: +ve impact (justified)**

* Benefits to economy 🡪 creation of jobs and generates EG via multiplier effect <graph> + rise in competitiveness due to more scope for links to emerging markets

however, more benefits enjoyed by workers in tourism sector 🡪 may not be inclusive EG

Other benefits include:

* Benefits to businesses in the airport and beyond e.g. tourism sector that includes food, retail, hotel accommodation, entertainment, sightseeing / attractions 🡪 gain in potential profits <graph> due to more tourists 🡪 EG and employment created
* Benefits to travellers 🡪 reduced congestion 🡪 faster time (rise in utility) but more importantly, this raises tourism demand 🡪 higher X revenue 🡪 EG
* Could be better for the residents who relocated as they suffer less from noise pollution. However, this depends on whether the govt compensation is sufficient.

**Evaluation**

* Ext 3 and 4 🡪 uncertainty / imperfect information in terms of whether aviation industry will continue to expand in future / no one really knows whether long-term aviation will continue growing as it has so far 🡪 difficult to assess if the benefits enjoyed will be significant and sustained into the long run
* Difficult to estimate the monetary value of the MEC 🡪 difficult to assess the costs
* Based on the above, govt may have to gather accurate, reliable and sufficient information to assess feasibility of expansion as well as ensure that benefits exceed costs, as there are opportunity costs incurred due to the runway expansion (**£18.6bn +** compensation of residents who must relocate due to runway expansion) 🡪 strain on govt budget 🡪 less budget on other areas
* Depends on whether govt is able to mitigate the costs 🡪 increased tax revenue from aviation noise levy (Ext 4) / EG (from expansion of runway) and then compensate the relevant parties involved