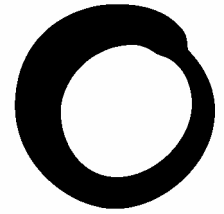


September 2006



**Friends of
the Earth**

Briefing

Pie in the sky

Why the costs of airport expansion
outweigh the benefits

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Executive Summary

This report examines the economic costs and benefits of the Government's plans for airport expansion across the UK.

Tony Blair has said that climate change is "*a challenge so far-reaching in its impact and irreversible in its destructive power, that it alters radically human existence*"¹. To combat this threat, the Government has a target that, by 2050, the UK's carbon emissions should fall by 60 per cent, if we are to avoid dangerous climate change. Recent academic analysis suggests that far greater cuts will be needed². But whether it is 60 per cent or some greater percentage the point is that the aviation sector's growth plans are completely at odds with either target³. Its airport expansion plans would mean a doubling of its carbon emissions - even with the best technological measures - at the same time as almost all the world's Governments are stating that global carbon emissions must come down.

The aviation industry and Government argue that despite this, expansion can – and must – go ahead, because the economic benefits are too large to ignore. Friends of the Earth strongly contests this view. Economy and environment should not be traded-off in this manner; the Government should champion forms of growth which do not damage the environment, and should discourage environmentally destructive types of growth. As Gordon Brown said in his speech to the United Nations in April 2006: "*Failure to protect the environment will put at risk future economic activity and growth...we must match growth and justice with environmental care*"⁴.

However, even if it were acceptable to trade-off the environment for economic benefit, the economic case would need to stand-up to scrutiny. In this report, we analyse whether the economic benefits for aviation are indeed as strong as claimed. The conclusions are that the economic case for airport expansion is weak, and heavily overstated in three main ways:

1) **Over-egging the pudding - the economic benefits of expansion are exaggerated**

Current predictions for the net benefits of expansion:

- Assume that the cost of flying will continue to fall. However, it is doubtful that the price of oil will return to its 2002 price of \$25 per barrel - it already exceeds \$60 per barrel. It is also unlikely that the industry will continue to enjoy its current tax breaks of £9 billion⁵ per year as UK and EU politicians are already considering removing these huge tax breaks, or include aviation in the EU emissions trading scheme – which would have a similar effect on the cost of flying if the scheme is effective. Re-runs of the Government's models with a constant rather than falling cost of flying show far lower figures for net economic benefits.
- Often includes predictions of future benefits that will happen anyway, whether airports are expanded or not, such as those benefits coming from maximising the use of existing runways.
- Overstate many components of the claimed benefits by counting:
 - Benefits that go to foreign passengers. As an example, for the proposed Stansted expansion these amount to almost £3 billion which should not be counted in an assessment of benefits to the UK economy⁶
 - Benefits that will only occur far into the future (between 2030 and 2060) and only in the unlikely event of the cost of flying continuing to fall

- Marginally slower future economic growth caused by not expanding airports as 'a loss to the British economy'. In truth, GDP will still rise massively even if no new runways are built
- Ignore the fact that less spending on aviation does not mean money lost to the overall economy. Instead, it will allow more expenditure in other sectors
- Overstate the growth of employment opportunities associated with expanding airports and ignores the falling figures for jobs per million passengers, particularly relevant within the rapidly expanding budget airlines.
- Overstate the case that airport expansion encourages regional economic development

2) Turning a blind eye - the economic costs of environmental damage are ignored

Aviation is the fastest growing source of climate changing emissions. Even conservative estimates calculated by the Government put the total cost of aviation's climate change impacts at £69.5 billion for the period 2000-2060, £20 billion more than the cost without expansion. This huge cost is ignored when aviation's net economic impact is assessed. Other costs ignored are those associated with:

- air and noise pollution
- damage to built and natural heritage
- damage to local communities e.g. the demolition of homes
- additional road congestion

3) Beggar thy neighbour - the economic costs to other sectors of the economy are ignored

Aviation imposes costs on other economic sectors which should be taken into account in any balanced analysis of the industry's overall benefit to the UK economy. When assessing the economic benefits of airport expansion, the Government and aviation industry ignore costs to:

- **UK industry:** If the aviation sector expands as planned, it will need to buy an ever-increasing number of carbon permits when it is included – as planned - as part of the EU Emissions Trading Scheme: the Government's plan for tackling aviation's carbon emissions. Unfair tax breaks and the lack of international competition may allow the aviation industry to absorb the costs, causing other sectors of the economy to be squeezed.
- **UK tourism:** Although foreign visitors spent £11 billion in the UK in 2004, UK residents spent more than double this (£26 billion) during trips abroad. This creates an overall loss to the UK economy of £15 billion per year. If airports expand as planned, more people will holiday abroad which is likely to double this tourism deficit by 2030.⁷ The cumulative extra cost to the UK economy in the coming decades would be well over £100 billion⁸.
- **The UK economy as a whole:** The aviation industry benefits from tax exemptions amounting to £9 billion per year. Removing these exemptions would allow more spending elsewhere (e.g. hospitals and schools, or improving public transport) and/or lower taxes in other areas (e.g. employment tax).
- **UK horticulture:** UK producers find it increasingly difficult to compete against cheap imports that are subsidised by artificially low air freight costs.
- **UK shipping and rail:** Other transport sectors do not enjoy the same tax exemptions as aviation, causing artificial competition. For example, Irish Ferries recently announced 500 workers sacked, partly blaming pressure from low cost airlines.⁹

- **Poorer sectors of society in the UK and overseas:** In general it is better-off people who fly more and take advantage of cheaper flights. At the same time, it is poorer people who are more likely to suffer the effects of climate change, in the UK and abroad.
- **The UK balance of payments:**
 - Around £3 billion leave the UK economy each year because of net spending on air transport services (such as air tickets)
 - Large amounts of capital leaves the UK as billions are spent on cheaper property and holiday homes in France and Spain etc.
 - Although aviation does promote investment in the UK, it is a two-way street as it also makes it easier for UK businesses to invest overseas.
 - Most aviation fuel is imported. The fuel used in 2004 was valued at around £2.5 billion – a price that will only increase with airport expansion.
- **Expenditure in other priority areas:** UK taxpayers have paid and will pay millions to support airport infrastructure such as new or widened roads to serve Heathrow, Bristol and Doncaster airports. This is money which could have been spent on improving public transport in these areas.

In summary:

- The economic benefits of further expansion have been heavily exaggerated. On just one count - when more realistic assumptions around the cost of flying are put into the Government's models, figures for net economic benefits largely evaporate.
- Expansion also has major negative impacts on other sectors of the economy, which have been ignored. Of many such costs, two stand out. First the extra cost of climate change from airport expansion runs to over £20 billion. Second, the extra tourism deficit the UK will incur from new runways would mean well over a hundred billion pounds more leaving the UK economy in the coming decades.

In light of the weak economic benefits, and the growing economic costs both to other sectors of the economy and from environmental damage, the conclusion of this report is that airport expansion is the wrong sort of growth for the UK economy. **The costs of airport expansion outweigh the benefits.**

Please note that this report is not arguing that the aviation industry must cease to exist. People will continue to fly on holiday and businesses will continue to use airports. It argues instead that further airport expansion should be seen as something to be avoided – on both economic and environmental grounds.

In conclusion:

This report concludes that the **costs of airport expansion outweigh the benefits**. It argues that the economic case for expansion is inaccurate and misleading. It would be better for the UK economy, and for the environment, if the Government rewrites its Aviation White Paper, removing the plans for airport expansion. This rewrite should have at its heart two central elements:

- Aviation strategy must be consistent with overall economy-wide climate change targets
- Implement economic reforms to:
 - remove the massive preferential and anti-competitive tax and subsidy regimes that aviation receives over other sectors of the economy, including transport
 - ensure aviation pays for the environmental damage it causes

Section 1

Over-egging the pudding

The economic benefits of expansion are exaggerated

This section looks at how calculations have been made for the net economic and employment benefits of airport expansion. On balance, the figures currently used are overestimates. Section one sets out the evidence.

There are four main ways that the economic benefits of airport expansion are exaggerated:

- The figures for net economic benefits for individual airport expansion options are overestimates
- The figures for overall, economy-wide Gross Domestic Product (GDP) gains are overestimates
- The figures for jobs benefits are overestimates
- The evidence for indirect benefits from expansion around connectivity, productivity etc is largely unsubstantiated assertion.

This section covers each of these areas in turn.

1.1 Exaggerated benefits of individual airport expansions

The Government's 2003 SERAS study¹⁰ used detailed econometric analysis to come up with net benefits (total benefits minus total costs) for individual airport expansions, or combinations of expansions¹¹. These are cited repeatedly by the Government (for example in the Aviation White Paper) and the aviation industry as justifications for airport expansions. However these net benefits are exaggerated, in four main ways:

- 1.1.1 More realistic starting assumptions in the analysis give far lower benefits in all options
- 1.1.2 They include benefits which will happen whether there are new runways or not
- 1.1.3 Many of the components of the benefits are exaggerated
- 1.1.4 They do not include many of the economic costs

Note: the Government uses the same methodology to calculate net benefits for all individual airport expansion options. Below, we refer to the proposed Stansted Airport expansion as one example of this methodology – the arguments for Stansted apply to the other expansions options also.

1.1.1 Unrealistic starting assumptions

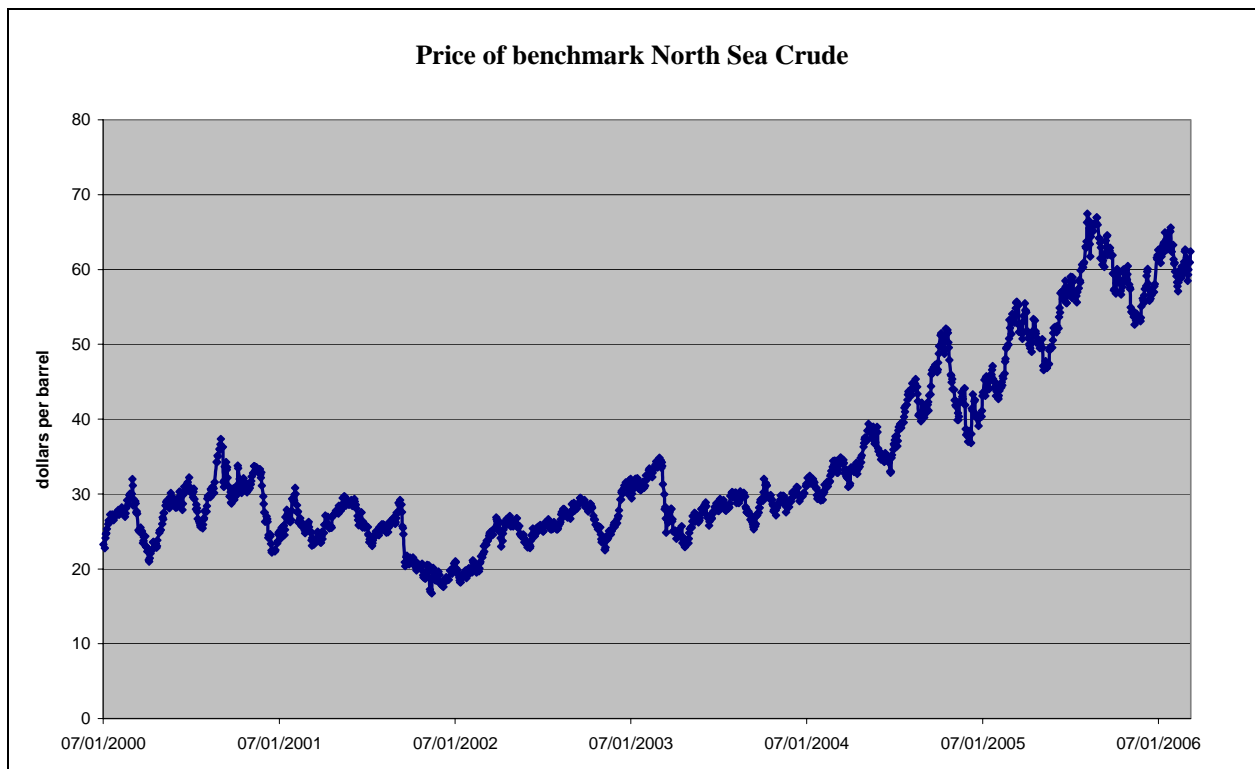
The price of flying

The Department for Transport (DfT)'s models¹² for economic benefits are based on calculations of predicted future passenger numbers. These predictions are based on – among other things - assumptions around the cost of flying. DfT assume that that the real price of flying falls – by 1% a year. But different assumptions in the models underpinning these figures give different results. If the price of flying stayed constant instead, then passenger demand would still rise, but much more slowly. This has a major effect on the calculations of net

benefits in all airport expansion models. The critical issue is getting accurate initial assumptions.

It is far more realistic not to assume continuing falls in the cost of flying. Historically, the cost of flying has fallen, largely driven by the exemption of aviation from fuel taxation and other taxes such as VAT – exemptions which were introduced shortly after World War 2 to help what was then a fledgling industry to grow. It is very unlikely that these costs will continue to fall way into the future, as the DfT predicts. This is for three reasons.

- First, aviation's heavy tax-exempt status is rightly increasingly under the spotlight – at national, EU and international levels. As aviation is brought into economy-wide systems like the EU Emissions Trading System (EUETS), there will be increasing pressure to remove these tax breaks, otherwise aviation will get a major unfair competitive advantage over other industrial sectors in such systems.
- Second, almost all the world's Governments have accepted that climate change needs tackling. Aviation's predicted growth is at major odds with this, and its external costs need tackling – as set out in the Aviation White Paper. Increasing use of taxation is a mechanism to tackle this. But even in the event that taxation is not used, then the effect of the EU ETS will be similar, as the cost of carbon permits for the aviation sector pushes prices up.
- Third, the DfT's forecasts are based on a cost of a barrel of oil being \$25 – this seems an increasingly unlikely assumption – see graph below¹³:



A DfT rerun of its economic package, assuming that duty on aviation fuel increased slowly until it reached the same level as duty on petrol for cars by 2025, showed that the cost of flying stayed constant, rather than falling, and the economic benefits changed dramatically¹⁴.

The net benefits with this more realistic starting assumption show a net cost for Stansted expansion, compared with a net benefit of £9 billion (over 60 years).¹⁵

Overall, more realistic assumptions about the future price of flying lower the predicted growth in passenger numbers. With lower passenger numbers, the DfT's models give far lower economic benefits for airport expansion.

Time savings

The DfT's analysis also assumes that the value of time doubles in real terms between now and 2030. If instead the value of time stays the same in real terms then the economic benefits are roughly halved. This assumption of doubling value of time also neglects the likelihood that if time is that much more precious in future, then businesspeople are going to be increasingly unwilling to waste time in departure lounges and in the air, and make it much more likely that teleconferencing and other technologies will take-off, saving time and also reducing demand for flights¹⁶.

1.1.2 Overall benefits exaggerated

The Government's SERAS document states that the net benefit of extra capacity options is "up to £18 billion in present value terms"¹⁷. This is already an exaggeration – the option with the largest stated net benefits is one new runway at Heathrow and two at Gatwick, at £18.3 billion, but from this needs to be subtracted the net benefit from maximum use of existing runways – which is given as £4.9 billion. So this brings down the net benefits of new runways to £13.4 billion. This need to subtract the net benefits of the maximum use of runways applies to all the airport expansion options.

1.1.3 Many of the components of the benefits are exaggerated

A number of the components of these net benefits are over-estimates. For the Stansted Airport new runway in 2011/12 the economic benefits are given as £12.8 billion¹⁸. The net economic benefit is £9 billion once £3.8 billion costs are subtracted. The economic benefits are given as:

£5.8 billion	"Generated User" benefits
£0.6 billion	"Existing User" benefits
£1.6 billion	"Producer" benefit
£4.8 billion	Increase in Air Passenger Duty (APD) revenues

"Generated-User" and "Existing User" benefits

The "Generated User" and "Existing User" estimates are types of benefit are for people now able to fly when they couldn't before, because it is cheaper¹⁹ ("generated user") and time savings for people who are flying now but would in future have to travel less far to get to the airport ("existing user").

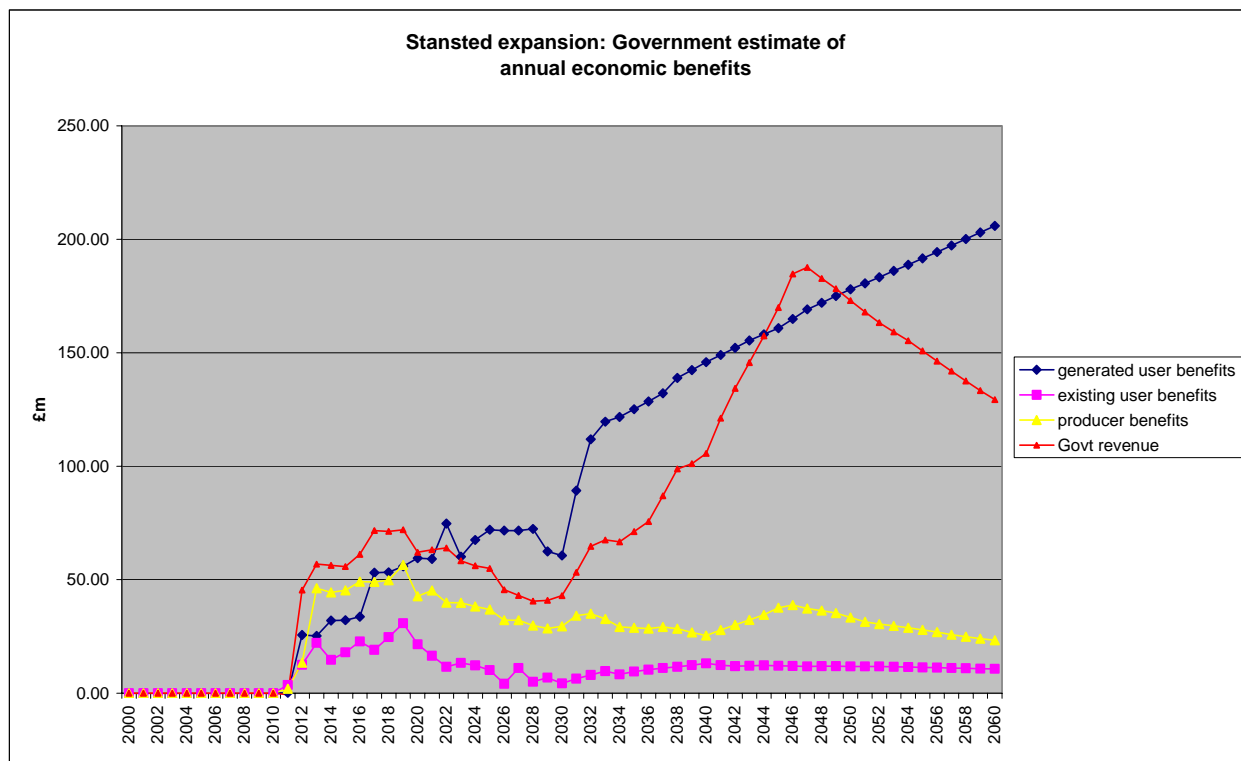
For both of these, the benefits are for both UK and foreign passengers. However, Treasury guidance is explicit that appraisals should just take account of benefits to the UK²⁰. The Sustainable Development Commission²¹ calculate that in the Stansted option above, 45 per cent of the user benefits go to foreign passengers (in terms of cheaper flights in future). In an argument that aviation expansion is good for the UK economy, benefits to foreign passengers – some £2.9 billion of the above benefits – should not count²².

Producer benefits

Producer benefits are benefits to the airport companies from greater passenger numbers. Counting these benefits is dubious. As the DfT says “*the airport companies gain financially from the extra throughput due to increased capacity*” – however although from the partial perspective of the aviation industry there are benefits, these are not necessarily national benefits. For one thing, the airport companies aren’t necessarily UK companies. Second, if the airport companies are gaining, other economic sectors are losing – consumers are spending their disposable income on aviation rather than some other UK sector.

Timing of benefits

It is worth noting also that the overwhelming proportion of the net benefits come in the period 2030-2060, with almost no net benefits between now and 2030, and that the 2030-2060 benefits are entirely dependent on the assumption (discussed earlier) that prices will continue to fall. The time distribution of expansion benefits are shown in the graph below²³:



This graph shows that estimates of overall economic benefits are highly dependent on the critical assumption that “generated user” benefits do indeed increase heavily post 2030. In the models, it is falling prices which make the demand high, creating the “generated users”. However, in what will almost certainly be a carbon-constrained world, it is extremely difficult to stand-up the assumption that flying will continue to be cheaper in this period than now.

1.1.4 Many other economic costs ignored

The net economic benefit figures are even larger overestimates, because the only economic costs subtracted are those of construction of the runways. This ignores other costs, for example:

- the costs of climate change (see section 2.1)

- the costs of other environmental damage (e.g. air pollution, noise, loss of biodiversity) (see section 2.2)
- the costs of damage to local communities, heritage, homes bulldozed (see section 3.2)
- the costs to other economic sectors (e.g. channel ferries) and related falls in their tax revenue (see section 3.1)
- the costs of additional congestion
- the costs of other infrastructure to service the new capacity (e.g. roads)

The Stansted costs are given as only £3.9 billion – which is solely the capital and refurbishment costs of construction. But there are other uncounted costs, such as:

Climate change

The increased carbon emissions would increase the costs of climate change²⁴ – Government figures put this cost at around £2.6 billion for the Stansted expansion²⁵. For the whole aviation expansion programme, using the Government figures for the cost of carbon – which are themselves a massive underestimate (see section 2.1) the climate cost is £69 billion, compared with £48 billion without expansion²⁶.

Congestion

Congestion is a major drag on the economy; the Confederation of British Industry (CBI) has estimated the costs as being as much as £20 billion a year²⁷. Whatever the true scale of the costs, aviation expansion will increase them by increasing traffic levels.²⁸ Using DfT figures, Terminal 5 at Heathrow would give rise to 326 million extra vehicle kilometres and the cost of congestion would be about £60 million pa²⁹.

Summary of section 1.1

Overall, more realistic assumptions just about the future cost of flying show massive reductions in the net economic benefit of runway expansions. In addition, a number of the categories of economic benefits are highly dubious and most categories of economic cost are not measured.

As an example, simply using more realistic figures about the future costs of flying makes the net economic benefit of expansion at Stansted negative, even while still including all the dubious categories of benefit, and ignoring all the missed costs.

1.2 The real impacts on Gross Domestic Product (GDP)

The industry cites a number of categories of economic impact, shown in the box below:

Direct – employment and income that is wholly or largely related to the operation of the airport.

Indirect – employment and income generated in the economy of the study area in the chain of suppliers of goods and services

Induced – employment and income generated in the economy of the study area by the spending of incomes by the direct and indirect employees

Catalytic – employment and income generated in the economy of the study area by the wider role of the airport in improving the productivity of business and in attracting economic activities, such as inward investment and inbound tourism³⁰.

The catalytic effects are covered in section 1.4 – sections 1.2 and 1.3 look at the first three categories of impact.

The aviation industry often claims that airport expansion will have major positive impacts on GDP. This claim starts with estimates for the current GDP³¹ from the aviation sector and uses a simple model to extrapolate that with passenger numbers rising GDP will rise proportionately. The latest reincarnation of this argument is by the Airport Operators Association (AOA), who state that aviation contributes £11.2 billion of Gross Value Added (GVA) in 2004, which will rise to £32.1 billion by 2015³². These figures are for direct GDP, and are usually bumped up by also including “indirect” GVA or GDP.

The industry then extrapolates and compares GDP increases with capacity expansion, and GDP increases without, and uses the difference between these figures to make the argument that not expanding airports will lead to major losses in GDP. For example, Oxford Economic Forecasting (OEF) in 1999 claimed the cost of not expanding airport capacity “*GDP would be expected to be nearly £4 billion a year lower*”, and AOA in 2005 state that “*nearly £2 billion would be lost to the British economy*”³³.

However, as the table below shows, this is a spectacular trick. The figures do not show that GDP would fall if no new runways are built, as the AOA statement could be seen to imply. Rather, GDP from aviation would still rise massively – by 96% without new runways compared to 102% with new runways.

Industry figures ³⁴	GVA from aviation (direct and indirect)	
	New Runways	“Max use of existing runways”
GVA in 2004	£22.2 billion per year ³⁵	£22.2 billion per year
GVA in 2015	£32.2 billion per year	£31.0 billion per year
GVA in 2030	£45.0 billion per year	£43.6 billion per year
% increase to 2015	45%	40%
% increase to 2030	102%	96%

Rather than £2 billion lost, their figures show that with no new runways GDP from aviation is £8.7 billion a year more than now. The impact of no new runways instead of major growth in runways is to reduce their figure for GVA growth from 4% a year to 3.5% a year.

It is worth noting here that the difference in the climate change costs between these two options is greater than the difference in GVA – see table below:

	Difference between “new runways” and “max use of existing runways”
Annual GVA in 2030	£1.4 billion
Annual climate change costs ³⁶ in 2030	£1.6 billion

A broader point is that GVA increases to the aviation sector do not necessarily mean that there is a corresponding benefit to the economy. Less spending on aviation doesn't cut growth, but simply redistributes spending in the economy: money is spent on other goods and services a different pattern³⁷.

1.3 Impacts on employment

The OEF research³⁸ and the White Paper state that there are 180,000 direct jobs in aviation. These calculations cast a wide net in their definition of "aviation" - The Office of National Statistics, using its Standard Industrial Classification (SIC) system, says 86,000³⁹.

Industry figures for total (direct + indirect + induced) jobs are much higher – the Airports Operators Association uses a figure of 576,000⁴⁰, derived "on the basis of a national multiplier of 2.1". The use of multipliers in this way is highly suspect if used to calculate the effects on national employment, as multipliers work both ways; if all industries calculated induced jobs in this way, then jobs would be counted twice.

However whichever way you count them the industry does employ many thousands of people, and many people are employed indirectly as a result of them. The biggest error in the Industry's jobs estimates though comes from their assumptions about what happens with aviation expansion.

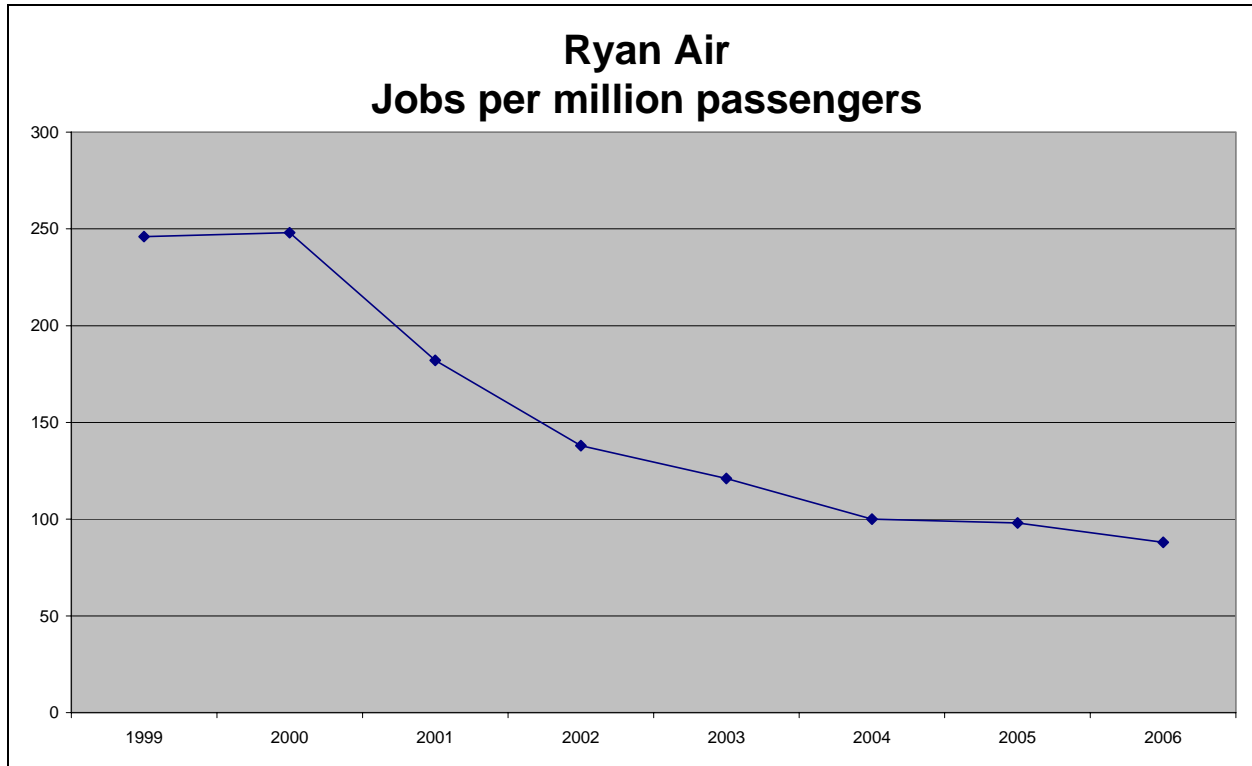
The industry assumes that current employment rates per million passengers can largely be used to calculate extra jobs from future expansion. The Airports Operators International state: *"Given that there are 950 on-site jobs created per million passengers – once we factor in the direct, indirect and induced jobs we conclude that for every million passengers, European airports support around 2,950 jobs nationally, 2,000 jobs regionally, or 1,425 jobs sub-regionally"*.

It does factor in some productivity gains into its future job predictions, but these estimates are low⁴¹. The industry is operating on a long-term job cutting programme (see box), and in addition the no-frills sector which is dominating the expansion of the industry operates using far fewer jobs per flight than the conventional part of the sector: there will be less jobs per unit GDP in aviation in future. Ryan Air had 248 jobs per million passengers in 2000, 120 in 2003, and 88 by 2006⁴² (see graph over⁴³).

Comparative estimates of jobs per million passengers (jobs per mppa)

British Airways	= 1320 jobs per mppa
Ryanair	= 86
Easyjet ⁴⁴	= 106

Industry figure ⁴⁵	= 950 per mppa
Bristol expansion ⁴⁶	= 512 per mppa



Box: A snap shot of job-cutting in the aviation sector:

Jobs per flight down in catering (Aug 05)

“In an effort to save costs, many airlines have opted to scrap free meals on shorter flights or offer them on a pay-as-you-go basis. LSG Sky Chefs has cut 12,000 jobs over the past four years, reducing its workforce from 41,000 to under 30,000”⁴⁷.

New technology reduces jobs (Aug 2005)

“13,000 jobs have been cut since 2001 and more could be threatened as it modernises further... Analysts say BA's move to Terminal 5 at Heathrow poses a threat to jobs at the airline because new technology will allow each worker to do more. It has reduced its workforce in part through increased use of technology including check-in kiosks and on-line booking”⁴⁸

Profits up, passengers up, jobs down (Nov 2005)

“UK airports operator BAA has announced it is to shed 700 jobs as part of a cost-cutting drive. The group said the move would result in savings of about £45m a year by 2008. The news came as BAA posted a 9.6% rise in underlying operating profits to £412m (\$728.9m) for the six months to 30 September, from £376m last year. BAA, whose airports include Heathrow, Gatwick and Stansted, said it carried 82.3 million passengers during the six month period - up 2.5% on last year”⁴⁹.

Job cuts to keep profits up (Feb 2006)

“Announcing better-than-expected quarterly results yesterday, BA's new chief executive Willie Walsh pointed to an agreement that BA has just reached with the bus drivers it employs to

take passengers to and from planes. The deal saw the loss of 25 per cent of the 400 drivers employed at Heathrow.⁵⁰

Outsourcing cuts jobs (Jan 2006)

”Over 150 workers at Castle Donington-based airline BMI face redundancy because their jobs are to be moved to India... it was hoped that, with redeployment and voluntary severance, the number of compulsory redundancies could be kept to about 100.”⁵¹

As a final point the industry also often argues that not expanding aviation capacity will “cost” jobs. For example, the AOA published a report on the economics of airports in 2005. Their news release, widely reported in the press, stated that “*Without new airport development more than 25,000 jobs will be at risk*” if we don’t build new runways⁵².

However, this is another example of misleading spin. What they actually mean is that their forecasts for job growth will be slightly lower in future if airports don’t expand - their figures show that job growth would rise, just less than they plan, not that jobs will be lost.

Extrapolating the details from various parts of this report shows:

	Total jobs in aviation⁵³	
	New Runways	Maximum use of existing runways
Jobs now	580,000	580,000
Jobs in 2015	672,000	646,000
% increase	15.9%	11.4%

In other words, with maximum use of existing runways, jobs grow from 580,000 to 646,000. Rather than 25,000 jobs lost, their figures say that with no new runways there are 66,000 more jobs than now.

The overall point here is the industry claims that not expanding their sector will mean less jobs, when the reality is that expanding means putting more economic resources into a sector which is constantly seeking, successfully, to reduce its number of jobs.

1.4 The true “catalytic” effects on the economy

Beyond “direct, indirect and induced” GDP and jobs, airports are cited as a broader benefit to the economy, because they are said to have a “catalytic” effect on the economy. It is said that they:

- Connect cities and industries, improving networking – a spur to innovation
- Are a major factor in business investment decisions, attracting inward investment, and retaining businesses
- Are linked with the high-tech, businesses of the future,
- Improve productivity and give efficiency savings
- Allow the movement of freight to key new markets

As a result, it is argued that they are therefore essential for regional competitiveness, economic regeneration and the growth potential of regions and nations. There are two main flaws with this general argument.

- they are an argument for airports, but not necessarily airport expansion.
- the arguments in each of the categories above are in any case overstated.

The following sub-sections cover these two points in more detail.

1.4.1 Airport benefits are not the same as airport expansion benefits

It is certainly true that aviation has created growth. This has happened on the demand-side – aviation directly creates demand for labour and other goods and services, with knock-on effects elsewhere in the economy. It has happened on the supply-side - allowing goods to be moved around quicker, the efficiency gains freeing up resources for use elsewhere. However, this does not mean that aviation expansion will do the same. The Government's SACTRA⁵⁴ committee has analysed transport in general and concluded that there is no clear relationship between expansion in already mature transport systems and economic growth⁵⁵. In a report for the South East Regional Assembly, Roger Tym Associates state why⁵⁶:

“On the supply side, more transport provision might not help companies be more efficient – there’s a law of diminishing returns here. Growth in aviation might not bring the economic benefits generated by aviation up til now, or the bulk of economic benefits might be “bought” with, say, half of the projected expansion in aviation.

On the demand side, there are shortages of ‘factors of production’ – businesses will not be able to translate improved accessibility created by aviation links into new jobs and growth if there are shortages of, say, land and labour. E.g. in the South East.”

It is worth noting that OEF actually acknowledge that there is no direct evidence of a link between airport expansion and productivity gains⁵⁷ However this does not stop people stating that there is – for example in the Northern Way “OEF found a direct link between airport activity and productivity”⁵⁸

In fact, the UK already has very good airport capacity for business. This point is acknowledged by the airport industry – the Airports Operators Association say: “The major cities in the UK all have significant connectivity at their disposal that is enabling businesses to operate effectively in international markets”⁵⁹.

It is also the case that the Government’s models show that if passenger numbers are constrained by not building new capacity, then business journeys will still increase – it is increases in leisure flights which will slow the most. As a result connectivity and business location arguments against not expanding are heavily weakened. Business will continue to be well served by existing levels of aviation travel.

1.4.2 The catalytic effect of airports is overstated

It is often claimed that airports are a major factor in business investment decisions. For example, the DfT’s core cities report cites CBI attitude surveys, and also surveys of businesses near airports, and says “46% of European head office operations ranked proximity to a major airport as critical”. Aside from the obvious point that 54% of head offices don’t see proximity as critical, the key issue is that it is whether there is an airport within a reasonable travel time, not whether it expands, which affects location decisions. And the core point here

is that airports already exist and UK cities and business people are already well served by airports⁶⁰.

Also, there is little correlation between major cities' air connectivity and their attractiveness to business. A 2006⁶¹ survey of senior executive's views on best locations for business in the UK has Manchester, Glasgow and Leeds all higher than London; Leeds in particular having only a small nearby airport.

Case study – do high technology companies need a major airport nearby?

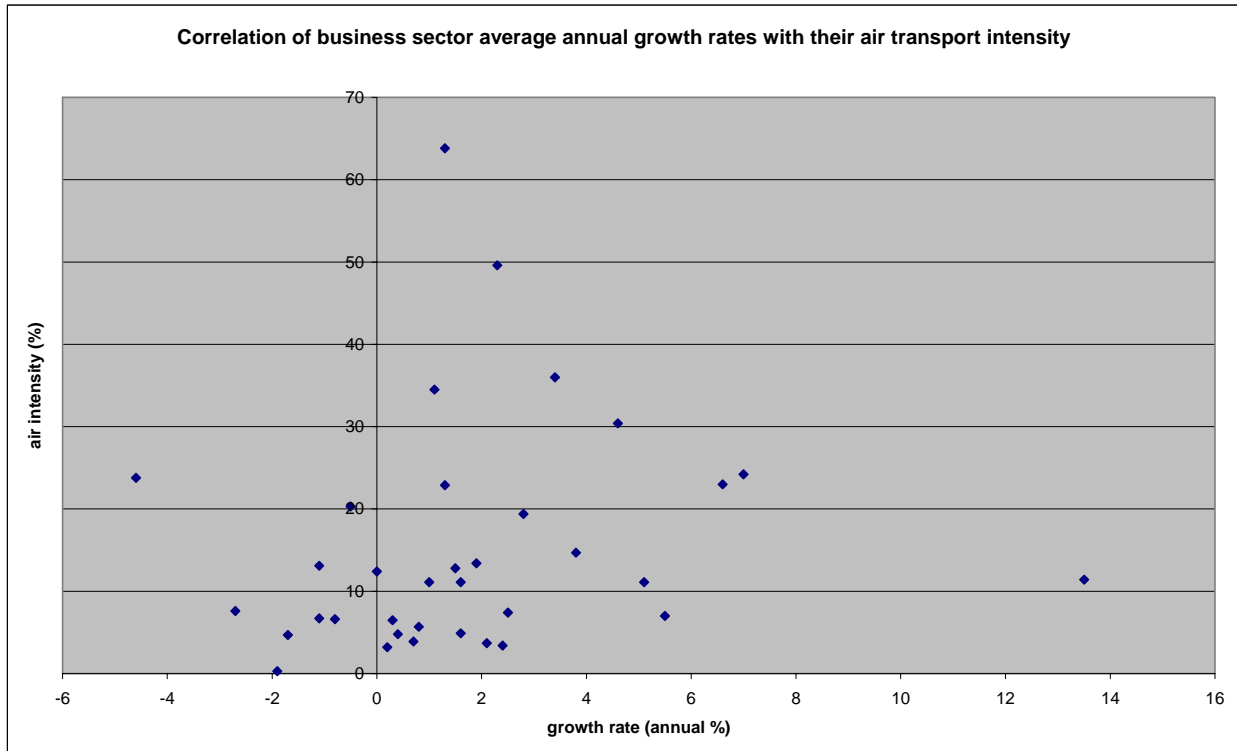
“In 2000 I started a high technology company with 4 colleagues. At the end of 2002 we raised 5.5 million euros of venture funding from Dutch and Swiss venture capital firms. Although we did fly to see those firms, we used London airports not Bristol because there were no convenient flights from there for the purpose. This did not hinder us. The VC firms invested because of team, product, vision etc. They did not invest because of proximity to Bristol airport, a point I have subsequently confirmed with them. I have also confirmed that if BIA had been bigger it would have had no impact upon their decision to invest. I know quite a few people in high tech industries notably silicon chip design and feel this story is common to many of them. I have explicitly asked the founder and CEO of a firm that has raised \$40m or so (and who previously founded another firm, raised \$20m in VC, and sold for \$400m, also in the Bristol area) whether he felt that BIA had any impact on his ability to get VC, or if it was larger would it have made things easier, and he said categorically that it had no impact.

The plain fact of the matter is, once you are able to get to your customers and/or investors (e.g. using the London airports), that further increase in air capacity and links has little or no real impact on achieving investment. If a VC's major concern is how long it takes him to get to you from Heathrow, then there is not much hope for his business acumen” – Bristol Businessman⁶²

Another core argument for aviation is that it is associated with the high-tech, businesses of the future, so it must expand or they won't. The Aviation White Paper states: “sectors of the economy that are likely to be drivers of future growth, such as financial services and high tech manufacturing, rely heavily on air services. To that extent, failure to provide additional capacity would have an adverse effect on economic growth in the UK.” This however, is just assertion. First, business flights can expand without additional capacity – with maximum use of existing runways for example, the Government's models show that UK business trips from Heathrow would increase from 8 million passengers per year in 2000 to 15 million in 2030, and at Stansted increase from 1 million to 5 million⁶³. But the main point is that there is little evidence that high-growth sectors are either particularly more reliant on air services than low growth sectors, or dependent on aviation growth for their continuing growth.

There is very little correlation between the growth rate of a particular industry sector and the air intensity of that sector⁶⁴. For example, the following graph using industry data plots high growth industries against the intensity with which they use air transport⁶⁵. If there was a positive link, you should be able to draw a diagonal line up to the right from the zero-zero axis

showing that low growth industries have low air intensity and high growth industries have high air intensity. But as the data shows, there is no such correlation:



Case study – do high tech industries need aviation expansion?

“I certainly don’t know of anyone in my high tech industry who really believes this. Most of my customers are in the US, Japan and Korea, none of which I can reach directly from Bristol, but can easily be reached from Heathrow. The journey to Heathrow is not a major part of the overall journey time, especially when most regional airports will need to fly to a hub (e.g. Amsterdam) to get to these locations... There is no reason why high tech industries are any more dependent on flying than low tech ones, the question is ‘where are your customers’. Choosing high tech just lends glamour and a perception of value to this false claim” – Bristol businessmen

A further argument given for airport expansion is that airports are good for encouraging inward investment. For example the aviation white paper states *“Regional airports can have significant benefits for local and regional economies, promoting economic regeneration, encouraging inward investment and contributing to regional competitiveness”*.

Again this is an argument for airports – which already exist – rather than airport expansion. However, the inward investment argument is weak because investment goes both ways. If inward investment is counted as an economic plus, then the potential for outward investment must also be considered.

It is also often asserted that increased passenger numbers are good for regional economy as it will bring in more tourism. This is a one-sided argument – in fact for the UK, aviation takes

out far more tourists from the regional economy than it brings in, and expansion would increase this already massive net regional economic deficit. The key issue is the net balance: discussed in detail in section 3.2.

Hurts UK competitiveness

There's no evidence that stopping aviation expansion will hurt UK competitiveness. Airports will still exist. Stopping aviation expansion will not prevent businessmen from travelling, it will not prevent investment opportunities. There is no evidence that our people will fly from France rather than from the UK. There is not a net loss in tourism income to the UK. It will not change our ability to compete with India and China. It will not mean existing business destinations become unreachable.

In addition tackling aviation's emissions is an international as well as national issue. Timing is important here – stopping airports being built over the next 10 years – time enough for all other countries to do the same. This does need concerted action – the basis should be that it is inevitable that aviation growth must slow, so all countries should work to that same assumption. This issue about competitiveness is largely about mindset, and reclaiming the mindset from the aviation industry. Rather than use groundless fears of competitiveness problems to delay action to the last possible moment, the attitude should be *“action on climate change will happen eventually, so we will plan accordingly and therefore be in a better position than other countries when it does happen”*.

Businesses need a clear honest framework in order to plan – Government needs to be honest that climate change will be a constraint on aviation's growth in passenger numbers.

Finally, a further argument against the case for airport expansion on “business needs it” grounds is that it will be simply inefficient for businesses to keep on flying more and more of their people around for ever longer periods, wasting their time in the air and in departure lounges. Twenty years from now the world will be wildly different, with technological advances highly likely to have removed much of the need to travel in person for business purposes. We don't want lock-ed in useless capital.

Section 2

Turning a blind eye

The economic costs of environmental damage are ignored

A full assessment of the net economic benefits or costs of aviation expansion needs to look at all impacts. However, current figures use only a narrow and partial assessment. Section 2 looks at the missing costs from environmental damage.

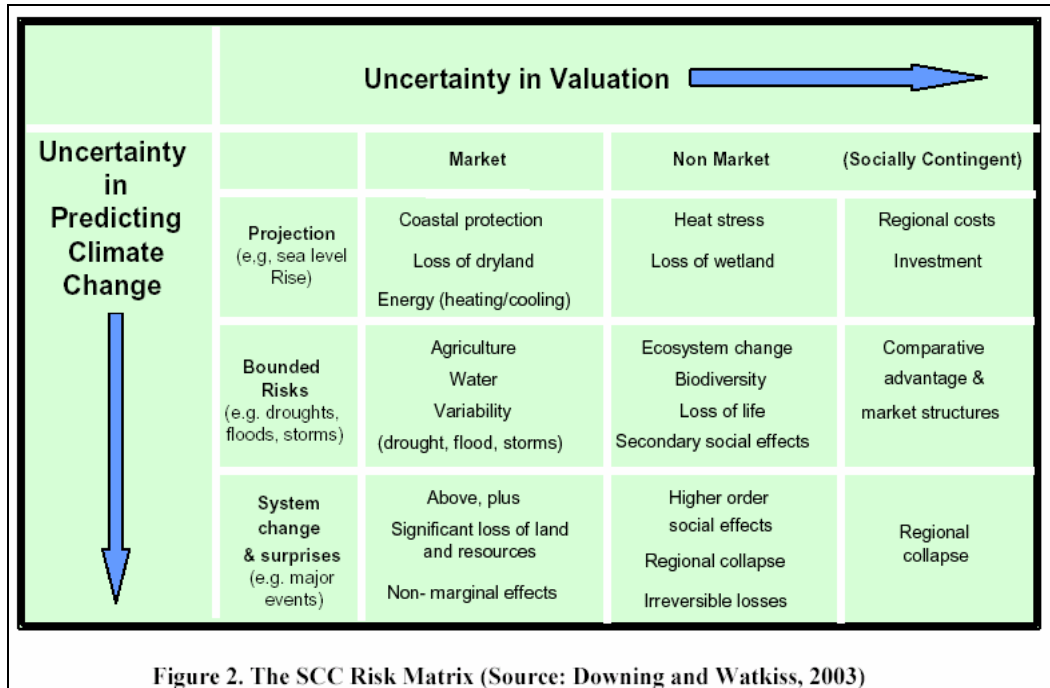
The official Government assessments of net economic costs and benefits of airport expansion do not include the costs of environmental damage. This is a mistake, because these costs are very large.

2.1 Climate change

The Government estimate the cost of carbon emissions from aviation at £1.4 billion a year in 2000, rising to £4.8 billion a year by 2030. Using the same assumptions as the DfT, this gives a total discounted economic cost for aviation's climate costs under the Government's expansion programme of £69.5 billion from 2000-2060 (the same time period as economic benefits are counted over)⁶⁶.

If capacity were not increased, then the total discounted economic costs of climate change would be £48 billion – which gives an increased cost of the expansion programme from climate change of £21 billion⁶⁷.

These figures are also large underestimates. The £1.4 and £4.8 billion year figures are based on a Treasury estimate of the cost of carbon at £70t/C⁶⁸. However, a recent report for the Government makes it clear that this mid-range is a massive underestimate of the overall cost of carbon, because only a small fraction of economic impacts have been considered. The box below from this report shows nine types of economic impact from climate change:



This Government study⁶⁹ states “very few studies extend beyond the top left hand corner of the matrix and none even has a full coverage of the four boxes that represent market and non-market impacts for the projected and bounded risks of climate change. There are only limited studies that have considered any socially contingent effects or the potential for longer-term effects” (our underlining).

For example, it also does not include costs for potential effects which are catastrophic or irreversible (such as melting of Greenland ice sheet, switching off of the Gulf stream etc), and it does not count any “socially contingent” effects – for example the economic costs of relocating refugees fleeing from climate disasters.

Overall, £70 t/C is far too low a figure to use for climate change costs – however, even using this low figure already heavily reduce the net economic benefit of expansion.

2.2 Other environmental and social costs

Other environmental and social costs are simply dismissed by organisations such as BAA as being irrelevant. For example, BAA state: “*Like the Govt BAA has not sought to calculate the external costs associated with other possible environmental impacts. This is because we believe that the external costs of the remaining impacts – biodiversity, ecology, water quality, waste, heritage, road congestion – are fully internalised within the development and operating costs of aviation through the planning system.*”⁷⁰. However, they are not internalised in the planning system at all – they are explicitly not valued⁷¹.

Damage to health from air pollution

Nitrogen dioxide levels are a particular concern around airports. The Government assess acceptability against EU mandatory limits for this and other pollutants, however adverse health impacts occur at well below these high levels. In addition, if for example Heathrow were to expand, then the resultant extra road traffic would breach air quality standards – the DfT’s

models show that very high road charges would be needed to keep traffic levels down to protect people's health⁷².

Damage to health and quality of life from noise pollution

Loud and persistent noise affects health, particularly at night time. It affects children's and adults' concentration, deprives people of sleep, and adds to stress. In the recent DfT consultation on night flights, in 2003, over 750,000 people were exposed to an average noise level of 55 or more decibels over 24 hours, and 250,000 people were exposed to an average noise level of 48 or more decibels at night. Noise levels at Heathrow are predicted to increase.

Damage to natural and built heritage

For example, the proposed Stansted expansion threatens 64 Grade II listed buildings, the Parish Church of Holy Trinity Takeley, East End Wood - which is designated as a Site of Special Scientific Interest (SSSI – the UK's most important wildlife designation) - and many other natural habitats for endangered bird species⁷³.

Expansion of Bristol Airport would ravage beautiful natural landscape in North Somerset, partly due to the further road building which would be needed.

Infrastructure supply

New access roads to airports are needed, with infrastructure costs running into millions – for example the £72 million cost to the taxpayer of the new road into Robin Hood airport⁷⁴.

Section 3

Beggar thy neighbour

The economic costs to other sectors are ignored

A full assessment of the net economic benefits or costs of aviation expansion needs to look at all impacts. However, current figures use only a narrow and partial assessment. Section 3 looks at the impacts on other sectors of the economy.

There are a range of other economic costs which are not included in the analysis of net economic benefits.

3.1 Costs to other sectors

3.1.1 UK industry – through carbon allocations

The UK Government has committed itself to ensuring that aviation meets its external costs⁷⁵, and currently favours the EU Emissions Trading System as the method to do this. The Government is very unclear about what it thinks the impact of this will be, but in the period to 2030 we assume that the overall cap for all sectors' emissions would be set at an environmentally effective level in order to prevent catastrophic levels of climate change (otherwise there is no point to it).

In this situation, if the aviation sector grows (either as planned or just to the maximum use of existing runways) it will have to buy an ever increasing number of carbon permits. This will have one of two effects:

- First, either the increasing cost of doing this means that the price of flying does not fall as planned, and therefore demand does not rise as fast as planned, and therefore no new runways are needed.
- Or second, the aviation industry is able to absorb the cost of more permits, thereby leaving ever increasing cuts needed by all other sectors of the economy. As the aviation sector has a variety of competitive advantages over sectors – for example not paying fuel taxes or VAT – and as it is a sheltered sector (it does not compete with the Chinese aviation industry in the same way as the steel sector does) it is quite likely it will be able to do this.

The bottom line is – if the aviation sector grows as planned at the same time as the overall economy wide carbon available permits falls, this squeezes all other sectors. Pure economists might argue that this is the economically rational thing to do – make cuts where it is most cost-effective to do so. However, it is only cheaper to make cuts in other sectors because of the massively preferential tax and subsidy regime in place for aviation in the last 50 years (see section 3.2). If these tax breaks persist, this will continue to put other economic sectors at a disadvantage. If they don't then passenger demand growth will not increase so rapidly and there will be no need for further airport expansion.

3.1.2 UK tourism

The aviation industry and Government are keen to stress the economic benefits to UK tourism from increased foreign visitors. However, this is yet again a one-sided analysis. At the same time as foreign visitors coming here, a greater number of UK residents go abroad, and this will increase with airport expansion. The UK runs a massive economic deficit from air travel. Foreign visitors arriving by air spent nearly £11 billion in the UK in 2004, but UK residents flying out spent £26 billion abroad – a net loss to the UK economy of £15 billion pounds a year. If airports expand as planned, this net deficit will increase to £30 billion a year by 2030⁷⁶. The cumulative extra cost to the UK economy in the coming decades would be well over £100 billion⁷⁷.

It is worth noticing that this is not just a balance of payments issue for the whole economy, but an acute issue for the UK tourism industry. UK tourism is far more reliant on domestic visitors (83% of spending) than foreign visitors – aviation expansion will put far greater strain on the domestic visitor component of UK tourism than it will benefit the foreign visitor component.

This is particularly an issue for the regions of England – London is the main region benefiting from foreign visitors – where spending in is roughly the same as spending out. But in regions such as Yorkshire and Humber, the ratio of money out to money in is over 6 to 1.

Increasing the net outflow will have an overall negative effect on tourism in the UK. According to Visit Britain⁷⁸ 2003 UK residents spent over £59 billion pounds on tourism in the UK, nearly 5 times the amount spent in the UK by overseas visitors. Domestic tourism accounts for 83% of the spending upon which 2.2 million jobs in UK tourism rely. If more people holiday abroad, this will reduce the amount they spend in the UK.

Details on tourism deficit⁷⁹

The Government attempts to gloss over these figures by asserting that the numbers of foreigner visitors will increase faster than the numbers of UK residents leaving, and that the rate of spending increase per foreign visitor will increase faster than that of UK visitors abroad, and then expressing the hope that if this happens then the gap might close. However this is not borne out by the evidence – the gap is not closing, it increases every year.

There are two key assumptions to test – on inward and outward visitor numbers, and inward and outward spending per visitor.

i) Different rates of inward and outward visitor growth

It is more likely that outward visitor numbers will grow faster, as has been the trend of the last ten years. Since 1995 the number of visitors to the UK has been growing at an average annual rate of 1.8%, whereas the number of UK residents going abroad has been growing at 5.0% a year. This is the main reason why the UK travel deficit has grown from £3.6 billion in 1995 to £17.2 billion in 2004. It is very conservative to assume that both inward and outward visitor growth increase at the same rates: Office for National Statistics figures for 1984 to 2004 show that there has been a growth of 82% of UK overseas leisure trips by air, compared to an increase of only 38% of overseas residents' trips to the UK by air⁸⁰.

ii) Spending per visit

Spend per visit has consistently been growing in real terms and outward spend per visit has been growing faster than inward spend per visit.

Some DfT analysis has optimistically assumed that inward visitor spend will increase faster than outward visitor spend. Historically, inward tourists have spent more than outward tourists. But this gap has narrowed in recent years. Over the last six years inward spending has stagnated, and fell by £20 per visit between 2003 and 2004, whereas outward spending per visit has grown in each of the last six years, and increased by £8 per visit between 2003 and 2004. Currently national average spend is £541 for inward tourism, and £517 for outward. So again it seems conservative to assume that inward and outward spending levels will stay constant relative to each other.

The Government also states that not all the money spent by British people going abroad goes abroad – for example money spent at travel agents. But with no frills flights, little money is spent at high street agents, it's mainly booked on-line direct with the airlines. In addition, the National Statistics Office figures are for spend abroad, not total holiday cost, so the deficit is real and not compensated for by agents fees.

Finally, if the UK is counting tax revenue benefits of airport expansion, it should count the tax revenue loss of this tourism deficit. With a current deficit of £17 billion, VAT loss is £2.5 billion.

3.1.3 UK horticulture

The increase in air freight has affected UK industries that are now having to compete with heavily subsidised (in the form of fuel tax exemptions) imports. UK produce may be more expensive than foreign produce because labour costs are higher. However this should be more than countered by the transport costs of getting them to the UK. But as aviation fuel is exempt from tax, and doesn't pay its social costs, these transport costs are artificially low. And as aviation expansion is founded on predicted further price falls, this will increase the competitive disadvantage to UK firms.

3.1.4 UK shipping and rail

Aviation expansion will further harm other transport sectors. Already ferries are struggling against low-cost airlines – for example Irish ferries announcing 500 redundancies and partly blaming pressure from low-cost airlines⁸¹. If one mode increases another decreases. If all modes increase, that spending is spending not in other parts of the economy. It is the overall economic benefit which should be calculated not just to the aviation sector.

3.2 UK economy as a whole

3.2.1 Economic inefficiency through unwarranted tax-exemptions

The aviation sector gets deeply preferential tax treatment compared with other sectors of the economy. It does not pay tax on fuel. It does not pay VAT. It can claim back VAT on supplies it buys which did pay VAT. It does not pay duty on alcohol and tobacco sales for flights outside the EU. All told, these exemptions amount to at least £9 billion a year tax break⁸².

Some other economic sectors are also of course zero-rated for VAT – such as children's clothing, most types of food, other transport. The argument for zero-rating is that these sectors and purchases are socially deserving – certainly the case for children's clothing and food. For transport, there is a strong case for buses (on social grounds, as many people do not have a car), and for rail (on economic grounds, to alleviate the large economic costs of road

congestion). However, there is no social such case for aviation - it is a mature sector, and one which is predominantly used by richer people going on holiday⁸³.

Non-transport sectors also pay much higher rates on fuel – this will become a major and unfair competitive advantage for the aviation sector when it is inside the EU emissions trading scheme and competing with these other sectors for the purchase of permits.

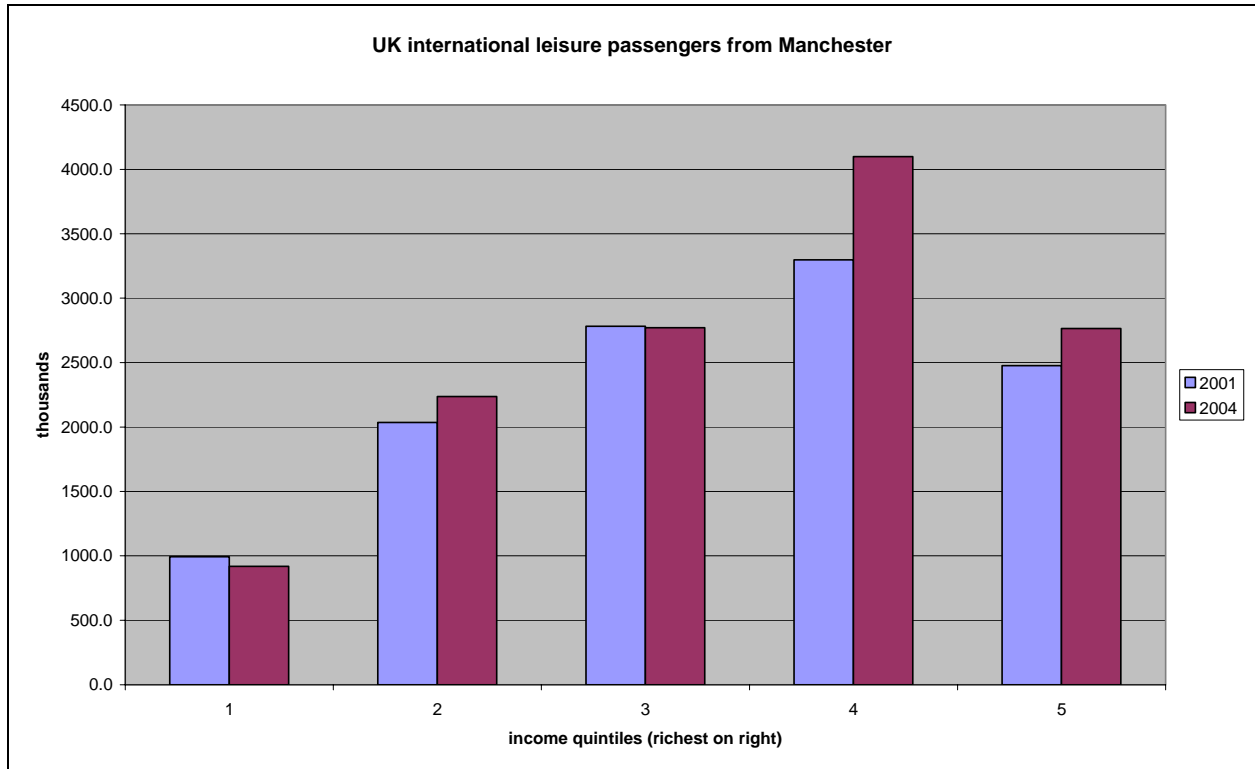
Overall, aviation pays far less than its fair share of taxation. Indeed, aviation should be paying far more than a fair share, on economic grounds, because of the large external costs it imposes on society (through climate change emissions, air pollution etc). Because it does not, there is an overall inefficient allocation of resources in the economy towards aviation. If tax regimes were reformed to correct these anomalies, then the demand for aviation would be less, and more resources would be freed up for use in more deserving and economically and socially beneficial industries.

Removing these tax exemptions would also allow either greater spending elsewhere – e.g. on hospitals and schools, or lowering of other taxes on more socially useful factors of production – for example on employment.

3.2.2 Unequal Distribution of benefits and costs

Treasury guidance in its green book explicitly states that account should be taken of distribution of costs and benefits, on the grounds that £1 of benefits is worth more to a poorer person than to a richer person.

Aviation is deeply regressive in its distribution of costs and benefits. It is mainly richer people who fly and who have taken advantage of cheaper flights. It is mainly richer people who will fly in future. It is not the price of the flight that deters poorer people from flying to Prague or Malaga for the weekend, but the cost of staying in Prague or Malaga. For example, the following graph shows the use of Manchester airport by income quintile – not only do richer people fly far more than poorer people, but falling prices in the last 4 years have led to rich people taking more flights, rather than poorer people flying more (see graph below)⁸⁴:



The economic benefits of airport expansion in the Government's assessments are predominantly time savings or increased choices for richer people⁸⁵.

On the other hand, the costs of climate change will be borne mainly by poorer people. This will happen in the UK: it is poorer people who will be unable to afford increased insurance premiums on their homes, and unable to move away from areas of increased flood risk. It will happen globally – it is poorer countries generally who will bear the brunt of climate change, and poorer people within those countries who will be hit hardest.

It is morally and ethically highly suspect to say that £1 million of damage to people's basic existence should be treated the same as £1 million of benefits made from the summation of thousands of people's slightly cheaper holidays. However, this is exactly what happens when the Government crudely trades-off costs and benefits in this way. No account is taken of the distribution of costs and benefits or airport expansion in the White Paper.

3.2.3 Costs of congestion

Airport expansion will increase traffic and congestion. A study of Bristol airport states: "Airport traffic would account for 30% of total traffic on the A38 by 2015, leading to congestion levels of 40% by the year 2030", and goes on to argue: "It will damage the economy of the South West directly through economic losses associated with delay (time valuations) and indirectly through the loss of inward investment. Creating significant levels of traffic congestion through an expansion of Bristol airport will inevitably damage the regional and sub-regional economy as car drivers gaining access to the airport for cheap holidays abroad delay time-sensitive business trips and logistic services"⁸⁶.

3.3 Balance of payments⁸⁷

Visitor spending (see section 3.1.2) is not the only aspect of aviation which contributes to a net loss to the UK's balance of payments. Other areas include:

3.3.1 Air transport services

Air Transport Services includes purchase of air tickets and freight services, both for imports (when UK residents buy from overseas airlines) and exports (when overseas residents buy from UK airlines). The Government's Pink Book states that "The UK has recorded a deficit on air transport services in every year since the mid 1980s. The deficit increased from £3.2 billion in 2003 to £3.3 billion 2004"⁸⁸. This deficit will increase as aviation expands, assuming continuation of historic trends in import growth (1% pa growth for exports, 3% pa growth for imports). By 2005 it was £3.5 billion⁸⁹.

3.3.2 Aviation fuel

Although the UK currently runs a slight trading surplus on oil, it is forecast that the UK will be a net importer of oil by 2010. Also, most aviation fuel (i.e. kerosene) is already imported. The UK aviation industry used an estimated 88 million barrels of aviation fuel in 2004 which would have an import value of around £2.5 billion⁹⁰.

3.3.3 Capital outflows

It is very difficult to quantify impacts here, but given high property prices in the UK, and many UK residents buying second homes in countries with cheaper property (e.g. Spain, France), it is likely that there is considerable capital outflow from the UK, and also current account outflows associated with maintenance and upkeep of these properties. As low cost air travel increases, these flows are likely to increase. House buying and maintenance for second homes abroad, currently running at around 50,000 extra each year - this adds up to billions leaving the economy, or debt being added to it (if mortgages are used), and the second homes generate a lot of extra flights and the short visits hit all leisure spending (what you do at the weekend) not just classic tourism spending (what you do 2 weeks a year).

3.3.4 Net Foreign Direct Investment

The aviation industry talks up the importance of aviation for attracting inward investment. But this is a two-way street – aviation also makes it easier for UK businesses to invest abroad rather than in the UK. Any credible analysis should not just assert overall benefits by just looking at inward investment, but look at both flows.

"Easing the transport of people and goods is a double edged sword. For every businessman waiting in a departure lounge with a newly signed export order there might be another businessman brandishing a newly signed import order that displaced a traditional UK supplier."⁹¹

3.4 Spending diverted from more deserving causes

The aviation industry claims that it receives no subsidy, because it builds all its own infrastructure. Indeed, the Aviation White Paper is clear that "*The Government expects developers to pay the costs of up-grading or enhancing road, rail or other transport networks*

Pie in the sky - why the costs of airport expansion outweigh the benefits

or services⁹². However, in practice the UK taxpayer pays hundreds of millions for supporting infrastructure, for example:

- £72 million of public money towards the new road to Robin Hood airport near Doncaster⁹³.
- In the South West, regional transport strategies include new road developments justified on the basis of feeding traffic to an expanded Bristol airport.
- The M25 was widened partly because of Heathrow. Heathrow is near M25 Junction 15 – the cost of widening Junction 12-15 is now estimated by the Government to be £127 million⁹⁴.

Conclusion

This report concludes that the **costs of airport expansion outweigh the benefits**. It argues that the economic case for expansion is inaccurate and misleading. It would be better for the UK economy, and for the environment, if the Government rewrites its Aviation White Paper, removing the plans for airport expansion. This rewrite should have at its heart two central elements:

- Aviation strategy must be consistent with overall economy-wide climate change targets
- Implement economic reforms to:
 - remove the massive preferential and anti-competitive tax and subsidy regimes that aviation receives over other sectors of the economy, including transport
 - ensure aviation pays for the environmental damage it causes

Ends

Glossary:

AOA	Airport Operators Association
APD	Air Passenger Duty
BAA	British Airports Authority
CBI	Confederation of British Industry
DfT	Department for Transport
EU ETS	European Emissions trading Scheme
GDP	Gross Domestic Product
GVA	Gross Value Added
Mppa	per million passengers
OEF	Oxford Economic Forecasting
SIC	Standard Industrial Classification
SSSI	Site of Specific Scientific Interest

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This document is available on the internet at:
http://www.foe.co.uk/resource/briefings/econ_aviation.pdf

End notes

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- ³ For example, in http://www.foe.co.uk/resource/reports/aviation_tyndall_research.pdf
- ⁴ http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2006/press_31_06.cfm
- ⁵ Aviation fuel is untaxed, no VAT is applied to aviation, removing these exemptions as well as Duty Free would raise £9.2 billion per year ('Hidden Cost of Flying' – Sewill 2003)
- ⁶ "in principle, appraisals should take account of all benefits to the UK. All impacts (including costs and benefits, both direct and indirect) on non-UK residents and firms should be identified and quantified separately where it is reasonable to do so, and if such impacts might affect the conclusions of the appraisal". HM Treasury, 2003. The Green Book. Appraisal and Evaluation in Central Government.
- ⁷ Office National Statistics figures, see: 'Why Airport Expansion Is Bad For Regional Economies' Friends of the Earth, 2005. http://www.foe.co.uk/resource/briefings/regional_tourism_deficit.pdf
- ⁸ With maximum use of runways, rather than capacity increases, the tourism deficit would increase less rapidly. Summing the total deficits to 2060 (the same period as the Government's economic benefit calculations), using a discount rate of 3.5%, puts the difference in tourism deficit between new runways and max use of existing runways at over £150 billion pounds.
- ⁹ Western Mail, September 20th 2005.
http://icwales.icnetwork.co.uk/0100news/0200wales/tm_objectid=16150992%26method=full%26siteid=50082%26headline=%2dmore%2dthan%2d500%2djob%2dcuts%2dat%2dirish%2dferries-name_page.html
- ¹⁰ DfT, 2003. The Future Development of Air Transport in the United Kingdom. South East Consultation Document, second edition. February 2003.
- ¹¹ The methodology for doing this is set out in Department for Transport, 2003. Passenger Forecasts: additional analysis. Annex C.
- ¹² Two forecasting and modelling packages called SCAB and SPASM.
- ¹³ Prices for jet kerosene show an extremely similar trend – rising from \$260/t in 2000, to \$718/t in Aug 2006
- ¹⁴ This changes the net economic benefits considerably because they are so heavily dominated by economic benefits far into the future for "generated users" (ie people who would fly more because it is cheaper). This is because demand rises are smaller, so the generated user benefits are lower
- ¹⁵ The revised figures are from sheet "pack 7 NPV" from the "24 JAN SCAB results.xls" file sent by DfT; the original figure is from the SCAB spreadsheet sent by DfT, for "SO7 STN+1 2012: DLL25", using the £12.8 total benefit figure also used in DfT 2003 passenger forecasts p78 section C33.
- ¹⁶ The Greater London Authority 2006 (GLA 2006) Heathrow study also argues that these figures use a too high value for time now (as well as doubling in the future), comparing the figures with lower values used in the DfT's official "WebTAG" guidance. The figures also seem higher than in the recommended "Eurocontrol" figures for 2005 See section 2.2.2 of GLA 2006.
- ¹⁷ DfT, 2003. The Future Development of Air Transport in the United Kingdom. South East Consultation Document, second edition. February 2003. Section 3.4
- ¹⁸ Sustainable Development Commission, 2004. UK Air Transport White Paper – an analysis and report to the Sustainable Development Commission, citing DfT, 2003. Passenger Forecasts.
- ¹⁹ These benefits derive from Consumer Surplus Theory, an explanation of which is given in Annex C to DfT 2003. Passenger forecasts.
- ²⁰ "in principle, appraisals should take account of all benefits to the UK. All impacts (including costs and benefits, both direct and indirect) on non-UK residents and firms should be identified and quantified separately where it is reasonable to do so, and if such impacts might affect the conclusions of the appraisal". HM Treasury, 2003. The Green Book. Appraisal and Evaluation in Central Government.
- ²¹ Sustainable Development Commission, 2004. UK Air Transport White Paper – an analysis and report to the Sustainable Development Commission
- ²² GLA 2006 also makes the argument that the failure to look at interliners overestimates generated user benefits. "Interliners" – international to international passengers – make up 28% of Heathrow passengers in 2000. GLA state "[interliners] should be included in the analysis as they have an impact on shadow costs. Indeed, international to international interliners are the first ones to be squeezed out by the operators when capacity is constrained. When an airport reaches full capacity, shadow cost levels for other passengers will not be affected as much, as capacity constraint will first have an impact on international to international interliners. Reducing shadow cost levels in this way would reduce total benefits to generated users." (section 2.5.5)

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- ²³ Data taken from SCAB datasets, supplied by DfT.
- ²⁴ Climate change costs are international, so only a fraction of these costs apply to the UK. Green book guidance states that the only costs to be counted in the formal appraisal are costs to the UK. A consistent approach to economic benefits would either look at all costs/benefits, or just costs/benefits to the UK (As the Green book suggests). The DfT's analysis does count foreign benefits to passengers, but does not count foreign costs from climate change. It should include either both, or neither, not just one. Whichever of these more correct approaches is taken, the net economic benefits falls considerably.
- ²⁵ DfT 2004 Aviation and Global warming, Table A, section 5.30 gives £5.2 billion net present value of carbon emissions from 1 new runway at Stansted and 1 new runway at Heathrow, using a discount rate of 3.5% and cost of carbon £70t/C with £1t/C annual increase. Stansted and Heathrow additional capacity increases are roughly equal, so the Stansted portion of this £5.2 billion is £2.6 billion. The £70t/C is a gross underestimate, as it only covers a minority of economic impacts of climate change, a clear caveat to the 2005 DEFRA study on the cost of carbon.
- ²⁶ Using a discount rate of 3.5% - the Treasury's preferred figure.
- ²⁷ CBI, 2004. Is transport holding the UK back? Cited in <http://www.publications.parliament.uk/pa/cm200405/cmselect/cmtran/218/21805.htm>
- ²⁸ It has been argued that regional airport expansion means people travel less far to airports. But overall all airports and regions are planning to expand heavily, with overall passenger numbers doubling – overall traffic levels will increase.
- ²⁹ Ferriday, N, 1998. Economic cost of surface access. Submission to the Heathrow Terminal 5 inquiry. Document FOE/108 2nd revision, para 221, page 12.
- ³⁰ Airports Council International (ACI), 2004. The social and economic impact of airports in Europe. P5.
- ³¹ Sometimes Gross Value Added (GVA) is used instead of GDP. The difference between GVA and GDP is that $GDP = GVA + taxes - subsidies$
- ³² AOA, 2005. The economic and social impact of airports. Piii.
- ³³ AOA press release, 26th September 2005. http://www.aoa.org.uk/media/news_show.asp?nid=86
- ³⁴ AOA, 2005. The economic and social impact of airports, sections 6.13, 6.22, 6.26
- ³⁵ This figure is different to the AOA figure of £11.2 billion cited earlier, because this time AOA bump it up to 22 billion by counting “indirect” growth.
- ³⁶ £4.8 billion a year for new runways, £3.2 billion a year for max use of existing runways. Climate change cost figures calculated from data and assumptions in DfT, 2003. Aviation and global warming. Section 3.6, and using cost of carbon of £70t/C
- ³⁷ For more on this see Berkeley Hanover, 2000. The impacts of future aviation growth in the UK.
- ³⁸ Oxford Economic Forecasting, 1999. The contribution of the aviation industry to the UK economy. P13. This is a 1999 figure.
- ³⁹ Annual Business Survey, 2004. Section i. http://www.statistics.gov.uk/abi/section_i.xls . The figure for 1999 (for direct comparison with the OEF figure) was 94,000.
- ⁴⁰ Airport Operators Association, 2005. The Economic and social impacts of airports. Page 39-40.
- ⁴¹ See section 6.20 of AOA, 2005. op cit.
- ⁴² “Financial Highlights” section of Financial Reports, at <http://www.ryanair.com/site/EN/about.php?page=Invest&sec=reports>
- ⁴³ Data from Ryan Air financial reports, <http://www.ryanair.com/site/about/invest/docs/2006/060901annualreport.pdf>
- ⁴⁴ Taken from annual financial reports of the respective airlines
- ⁴⁵ ACI 2005, p5.
- ⁴⁶ Figures from Bristol International Airport masterplan, section 6.8
- ⁴⁷ <http://newsvote.bbc.co.uk/1/hi/business/4153366.stm>
- ⁴⁸ <http://news.airwise.com/story/view/1124146917.html>
- ⁴⁹ <http://news.bbc.co.uk/1/hi/business/4395110.stm>
- ⁵⁰ <http://news.independent.co.uk/business/news/article343133.ece>
- ⁵¹ Derbyshire Evening Telegraph, 21st January 2006.
- ⁵² http://www.aoa.org.uk/media/news_show.asp?nid=86
- ⁵³ AOA, 2005. Section 6 and Table 6.5, 6.6
- ⁵⁴ Standing Advisory Committee on Trunk Road Assessment
- ⁵⁵ http://www.dft.gov.uk/stellent/groups/dft_econappr/documents/pdf/dft_econappr_pdf_504935.pdf , para 11
- ⁵⁶ www.southeast-ra.gov.uk/our_work/planning/transport/airports/future_air_transport/final_aviation_report.pdf

- ⁵⁷ OEF 1999, p39. “We have been unable to identify in the data a separate effect [on productivity] for aviation from that caused from the transport infrastructure as a whole”. This point is raised by IPPR, 2001, p12: “OEF’s failure to confirm a link between growth in air transport and productivity growth in the UK economy raises serious concerns about their conclusions on economic losses due to capacity constraint”.
- ⁵⁸ http://www.thenorthernway.co.uk/docs/c6_NorthernAirports.pdf
- ⁵⁹ AOA, 2005. The economic and social impact of airports. Section 2.34.
- ⁶⁰ In addition, business travel is a small percentage of total, and if business travel wants to expand there is plenty of room to do so – it is far more likely that leisure flights will expand less fast.
- ⁶¹ OMIS, 2006. Britain’s Best Cities 2005-2006. Spring 2006.
- ⁶² Pers. Comm. with author, June 2006.
- ⁶³ DfT, 2003. Passenger Forecasts, additional analysis. Page 63.
- ⁶⁴ Air Intensity defined by OEF as the “share of air transport in total transport demand” for that sector.
- ⁶⁵ OEF, 1999, op. cit. Table E2, page 74.
- ⁶⁶ Using the DfT’ assumption of passenger numbers at 480mppa in 2030. Aviation and global warming, section 3.6
- ⁶⁷ Maximum use of runways passenger numbers 320 mppa
- ⁶⁸ £70t/C was the “official” mid-range figure used in Government. This is being updated due to a November 2005 report for the Government (SEI 2005), which keeps the low estimate at £35 t/C, but states that it is not possible to put a figure to a mid range figure, and even harder to estimate a high range figure. Stockholm Environment Institute, 2005. Social cost of carbon, a closer look at uncertainty. <http://www.defra.gov.uk/environment/climatechange/carboncost/sei-scc.htm>
- ⁶⁹ AEA, 2005. The Social Costs of Carbon review. Methodological Approaches for using SCC estimates in policy assessment.
- ⁷⁰ BAA submission to HM Treasury and DfT 2003 report Aviation and the Environment: using economic instruments.
- ⁷¹ Indeed the Aviation White Paper’s Regulatory Impact Assessment explicitly states that many off these impacts are not valued - “... *Ministers have taken account of a number of other impacts including land and property take, heritage, ecology, water and urbanisation. It is also possible that surface access links to airports could run through communities and disrupt community access and networks. Such impacts are not quantified in monetary terms. This is because there is significant uncertainty about the evaluation methodology*”. http://www.dft.gov.uk/stellent/groups/dft_aviation/documents/page/dft_aviation_031559.pdf, using cost-benefit analysis, anything without an economic value is not valued.
- ⁷² DfT 2003. Air Quality Assessments supporting the Future of Air Transport http://www.dft.gov.uk/stellent/groups/dft_aviation/documents/page/dft_aviation_031849.pdf, section 8.4.3
- ⁷³ <http://www.stopstanstedexpansion.com/heritage.html>
- ⁷⁴ Yorkshire Forward and Yorkshire and Humber Assembly, 2006. Regional Funding Allocation for 2006. January.
- ⁷⁵ DfT, 2003. The Future of Air Transport. Section 2.18
- ⁷⁶ FOE, 2005. http://www.foe.co.uk/resource/briefings/regional_tourism_deficit.pdf
- ⁷⁷ With maximum use of runways, rather than capacity increases, the tourism deficit would increase less rapidly. Summing the total deficits to 2060 (the same period as the Government’s economic benefit calculations), using a discount rate of 3.5%, puts the difference in tourism deficit between new runways and max use of existing runways at over £150 billion pounds.
- ⁷⁸ from www.visitbritain.com/corporate/factsfigures/index.aspx, accessed 23/5/2005
- ⁷⁹ Further detail and references at http://www.foe.co.uk/resource/briefings/regional_tourism_deficit.pdf
- ⁸⁰ Cited in GLA, 2006. Heathrow Economics Study. Expansion of Heathrow Airport. Section 3.4.2. Draft, June 2006.
- ⁸¹ Western Mail, September 20th 2005. http://icwales.icnetwork.co.uk/0100news/0200wales/tm_objectid=16150992%26method=full%26siteid=50082%26headline=%2dmore%2dthan%2d500%2djob%2dcuts%2dat%2dirish%2dferries-name_page.html
- ⁸² Sewill, B, 2003. The Hidden Cost of Flying. London, AEF.
- ⁸³ Other transport sectors also pay low duty on fuel - buses get 80% of fuel duty rebated, and rail pays red diesel rates). However, these are still higher rates than aviation, and their rebates are for social equity reasons, or to reduce congestion – neither applicable to aviation.
- ⁸⁴ ONS Family survey data, plus CAA reports at <http://www.caa.co.uk/docs/81/2004%20Report.pdf>, and <http://www.caa.co.uk/docs/81/Report2001.pdf>

⁸⁵ An additional distributional issue not mentioned is where the jobs from expansion would be. The AOA's figures show that they would be predominantly in London and the South East. But these areas, particularly the south east – do not have jobs problems. In areas of very low unemployment such as the south-east, more jobs can create labour shortages and price rises. Areas of high unemployment do not do so well out of aviation expansion. Indeed, the argument for aviation aiding regeneration in the poorest areas is not strong – for example Manchester airport has been growing fast for years, and the nearby ward of Wythenshawe is still one of the most deprived wards in the country.

⁸⁶ Ecologica, 2005. The Economic impact of Bristol International Airport. Section 4.2. October.

⁸⁷ This section is taken from http://www.foe.co.uk/resource/briefings/regional_tourism_deficit.pdf,

appendix A

⁸⁸ Pink Book, 2005. Office of National Statistics (ONS). Chapter 3, page 42.

⁸⁹ Pink Book, p40,43,44, http://www.statistics.gov.uk/downloads/theme_economy/PinkBook2006.pdf

⁹⁰ Derived from reply by Under Secretary of State for Transport to a written parliamentary question,

Hansard Col 611W, 1 April 2003, adjusted for 2004 usage and value.

⁹¹ Ecotec 2000. The economic impact of the UK aviation industry. Birmingham, ECOTEC. Note: some may argue that overall globally this is a good thing from a global-economic-efficiency perspective, but the point that Government and industry are trying to argue is that it is unilaterally good for the UK.

⁹² Aviation White Paper, section 4.58 – it later sets out the possible exception that “Where the scheme has a wider range of beneficiaries, the Government along with... (other organisations)..., will consider the need for additional public funding through their investment programmes on a case by case basis”

⁹³ Yorkshire Forward and Yorkshire and Humber Assembly, 2006. Regional Funding Allocation for 2006. January.

⁹⁴ <http://www.publications.parliament.uk/pa/cm200506/cmhansrd/cm060724/text/60724w1873.htm> . This cost has risen by 35% since the Government's Road Building Programme estimates of July 1998, has risen £7 million since April 2006. The current figure is the estimate as of July 2006.