

Cycling and the economy

THIS BRIEFING COVERS

Costs of 'transport harm'; big v small projects; transport appraisal; overall value of cycling to the economy; benefit-to-cost ratios; how cycling helps the economy; how to promote cycling for economic benefit; tax; capital v revenue funding; role of economic-focused bodies.

HEADLINE MESSAGES

- Our excessive dependence on motorised road transport imposes significant economic costs on society. These include: congestion; road casualties; physical inactivity and the ill health caused by it (e.g. obesity); pollution (and the associated damage to buildings, ecosystems, agriculture and health); as well as the geopolitical costs of maintaining fossil fuel supplies in an increasingly unstable global environment.
- Cycling could substantially reduce these risks, while strengthening local economies in both urban and rural areas; supporting local businesses and property values; boosting the economic productivity of a healthy and satisfied workforce; and enabling disadvantaged groups to gain skills and access employment opportunities.
- Local and national government, and those with business/economic/regeneration interests are well advised to invest more heavily in cycling; whilst the tax system should offer greater support.

KEY FACTS

- If cycle use increases from less than 2% of all journeys (current levels) to 10% by 2025 and 25% by 2050, the cumulative benefits would be worth £248bn between 2015 and 2050 for England - yielding annual benefits in 2050 worth £42bn in today's money.
- In 2009, production losses due to mortality and morbidity associated with CVD (cardio vascular disease) cost the UK over £6bn, with around 21% of this due to death and 13% due to illness in those of working age. Physical activities like cycling help combat CVD.
- Occasional, regular and frequent cyclists contributed a 'gross cycling product' of c£3bn to the British economy in 2010. Around 3.6 million cycles ('units') are sold in GB each year.
- The average economic benefit-to-cost ratio of investing in cycling & walking schemes is 13:1
- Academics who studied the cost benefit analysis used by Copenhagen to decide whether to build new cycling infrastructure, concluded that cars cost society and private individuals six times more than cycling.
- On average, cycle commuting employees take one less sick day p.a. than non-cyclists and save the UK economy almost £83m.
- Although cyclists may spend less than car-borne shoppers per trip, their total expenditure is on average greater because they tend to visit the shops more often.
- On 9th Avenue (Manhattan), where a high quality cycle lane was rebuilt in late 2008, retail sales increased by up to 49%, compared to 3% borough-wide.
- Together, mountain biking and leisure cycle tourism contribute between £236.2m and £358m p.a. to the Scottish economy, with a cumulative gross value added of £129m.



Cycling UK VIEW

- The economic benefits of investing in small scale projects that typically benefit cycling are often underestimated. On the other hand, car-dependence is a significant cost for society and large scale transport projects (e.g. roads) are not the value-for-money they are often thought to be.
- Cycling makes a positive contribution to the national economy and it is a cost-effective investment. It can help:
 - Reduce congestion;
 - Improve public health and save NHS money;
 - Create jobs;
 - Save employers money and improve productivity;
 - Inject money directly into the economy via the cycle trade;
 - Boost the vitality of town centres;
 - Deliver goods efficiently;
 - Add value to neighbourhoods and communities.
- The Treasury should incentivise cycling through:
 - Adhering to the principle that 'the polluter pays' as the basis of taxation of transport users;
 - Maintaining a tax-free mileage rate that makes cycling on business financially worthwhile;
 - Supporting cycle commuting schemes that save businesses and employees tax (e.g. the 'salary sacrifice' Cycle to Work scheme);
 - Reducing VAT on cycle repairs and cycles;
 - Maintaining its policy of not taxing cycles for the use of the roads.
- Both national and local authorities should dedicate sufficient resources to smarter choices, recognising that they rely on revenue rather than capital funding.
- Economics-focused bodies such as Local Enterprise Partnerships (LEPs), regeneration agencies, developers and retailers should recognise the value of cycling and take action to promote and encourage it.



BACKGROUND INFORMATION

1. The economy and transport

Cycling UK view: The economic benefits of investing in small scale projects that typically benefit cycling are often underestimated. On the other hand, car-dependence is a significant cost for society and large scale transport projects (e.g. roads) are not the value-for-money they are often thought to be.

a. The costs of 'transport harm'

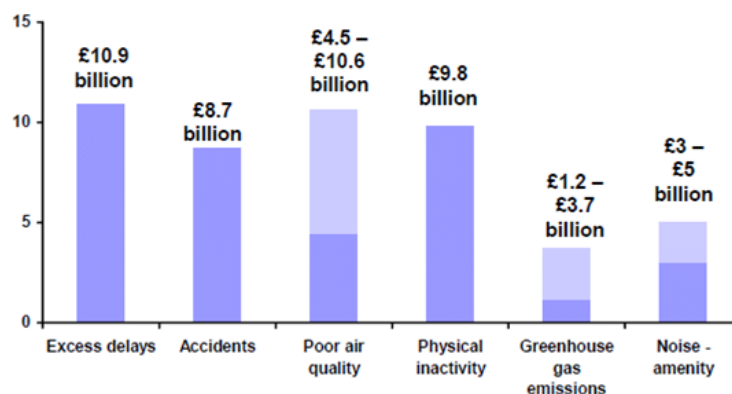
Governments usually view the widespread purchase and use of private cars as a good sign for the economy. However, it also makes us increasingly dependent on imported energy supplies, undermining our balance of trade and creating geopolitical risks. Our overdependence on private road transport also has many other disbenefits, including:

- Congestion;
- Road danger and casualties;
- Worsening travel conditions for non-car travel (this particularly affects those who do not drive and who therefore depend on other kinds of transport);
- The health disbenefits of reduced active travel;
- The damage to townscapes, the countryside etc. through road-building;
- Pollution and noise;
- Climate change.

These are all examples of what economists refer to as 'negative externalities', i.e. the person carrying out the activity does not pay for the resulting costs. In economic theory, 'externalities' – whether positive or negative – result in undesirable outcomes for society. The scale of these disbenefits should not be under-estimated:

- The Cabinet Office Strategy Unit has calculated that the 'costs of transport harm in English urban areas' are between £38-49 billion per year. While transport planners have traditionally regarded congestion as the main economic disbenefit of our transport system, the Strategy Unit report found that the annual costs of physical inactivity, road casualties and air pollution were all of a similar magnitude – around £10bn. Other costs include greenhouse gas emissions, noise and low enjoyment of space:¹

Comparison of the wider cost of transport in English urban areas (£ billion per annum, 2009 prices and values)



- A UK study that looked at tax imposed on motorists concluded that *“there are also many costs which are difficult to estimate and for which robust figures are not currently available, including severance of communities, [...] loss of tranquillity, degradation of landscape and countryside, the opportunity cost of land used for roads and parking, waste disposal (cars, tyres, used oil), diffuse water pollution from oil runoff, and wildlife casualties. These are not trivial costs.”*²
- A study from Germany³ calculated that:
 - On average, every car in Europe produces external costs equivalent to €1,600 p.a. in noise, air pollution, greenhouse gas emissions and accidents not covered by liability insurance.
 - 41% of these external costs are due to accidents and 37% to climate change. The remaining 22% are due to air pollution, noise and other effects.
 - For the EU-27, uncovered costs related to car use amount overall to €373bn p.a., the equivalent of roughly 3% of the EU’s GDP or the GDP of Belgium.
 - On average, every EU citizen pays €750 p.a. of subsidies towards the external costs of cars.
- In *Blueprint 5, The True Costs of Road Transport* (1996), economists estimated that motor transport in the UK paid only a third of the cost it caused to the environment.⁴
- A Danish study suggested that the average costs to society of every km cycled is DKK 0.60 (Danish Krone, 2008 prices); whilst every km by car costs on average DKK 3.74.⁵

b. Big v small transport projects

Governments often decide to invest in major transport projects such as railways and motorways on the assumption that making it easier to travel and distribute goods in this way will help create jobs and boost the economy. This approach has long been disputed:

- In 1999 SACTRA (the Standing Advisory Committee on Trunk Road Assessment) reported that it was far from convinced that public investment in road construction had any worthwhile impact on economic performance.⁶
- Likewise, findings from a study in 2012 concluded that it was very difficult to find evidence to support the theory that such investment is linked to an improved GDP in any EU country. It was much easier to identify negative outcomes, or those where the disbenefits cancelled out the benefits (e.g. a new road might attract shoppers from a poor region to better shopping opportunities in wealthier areas).⁷
- The above research also suggested that it isn’t new railways or major roads but small scale projects in urban areas (e.g. traffic calming, cyclepaths etc) that create most jobs per Euro invested. This is because more of them are built by hand, not by big machines, and it is more viable for local construction companies to compete for the work against big concerns – meaning that the monetary benefits stay local and, more likely, in the UK.
- In 2006, Sir Rod Eddington, who was commissioned by the Treasury and the DfT to advise on the long-term impact of transport decisions on the UK’s productivity, stability and growth, noted that investment in walking and cycling provides excellent value for money and that Britain’s economy is not hampered by a lack of transport links.⁸
- In January 2013, 32 transport professors from around the UK wrote an open letter to the then Secretary of State for Transport Right Hon Patrick McLoughlin MP, expressing their considered doubts about the ability of new, major investment in transport projects (e.g. road building) to make a positive contribution to the economy and employment. They suggested that it is more sensible to make the best use of existing infrastructure and pointed out that: *“There is substantial recent evidence [...] on the success of travel behaviour change programmes, underscoring demand management potential.”*⁹

The Transport Appraisal Process: all proposed schemes, from smaller-scale sustainable travel initiatives and minor urban transport improvements through to large national-scale infrastructure projects, have to be assessed for value for money and impact.

According to the DfT, the business case for a transport project should be considered from five perspectives: financial (is it affordable?); strategic (is there a good case for change?); management (is it achievable?); economic (is it value for money?); commercial (is it commercially viable?).

Detailed appraisals should also look at a wide spectrum of impacts on the economy (e.g. time and cost savings, reliability etc.); the environment (e.g. air quality, greenhouse gases, landscape, biodiversity etc.); and social welfare (e.g. road safety, physical activity, severance, accessibility etc.).

In the past, the appraisal process (formerly known as the New Approach to Appraisal, or NATA) was heavily criticised for its bias towards large-scale road building or expansion projects, and its propensity to undervalue small-scale schemes that typically cater for cycling and walking.¹⁰ Progressive revisions have partially addressed this imbalance, notably through the inclusion of the HEAT tool, which calculates how much cycling saves from reductions in mortality (see box on p8).¹¹

In Cycling UK's view, however, the system is still seriously flawed, particularly in the way that it values the impact that a scheme may have on journey times. This is because it aggregates any time savings that individuals are likely to make and puts a high nominal value on the result. However, the time saved by each individual driver may well be no more than a few minutes and, to all intents and purposes, of little if any real benefit in economic terms. Thus, the weight given to shorter journey times in the appraisal process is disproportionate, but is all too often a decisive factor when approval is given to road schemes.

Another problem is the paradoxical assumption that if people spend time and money on travelling, they must be gaining an economic benefit which outweighs the costs involved – otherwise they wouldn't make the journey. Consequently, measures that enable people to replace longer car trips with shorter cycling trips are assumed to represent an economic disbenefit, even though (or, more *because*) this saves them time and money!

To summarise, we believe that the system's focus on intangible and nominal economic 'benefits' is misguided, that more research needs to be carried out into making sure that the process puts a fair and accurate value on providing for active travel, and that other factors such as quality of life are given the weight they deserve.

- WebTAG is the DfT's guidance on transport modelling and appraisal. It has to be used for projects or studies that require government approval, and is intended to serve as best practice for others. It is kept up to date in the light of new evidence and developments. <https://www.gov.uk/guidance/transport-analysis-guidance-webtag>
- Transport Scotland issues its own Scottish Transport Appraisal Guidance (STAG - <http://www.transport.gov.scot/report/i9760-00.htm>), as does the Welsh Government (WelTAG - <http://gov.wales/topics/transport/planning-strategies/weltag/?lang=en>)



2. The economy and cycling

Cycling UK view: Cycling makes a positive contribution to the national economy and it is a cost-effective investment. It can help:

- Reduce congestion
- Save NHS money
- Create jobs
- Save employers money and improve productivity
- Inject money directly into the economy via the cycle trade
- Boost the vitality of town centres
- Add value to neighbourhoods and communities
- Deliver goods efficiently

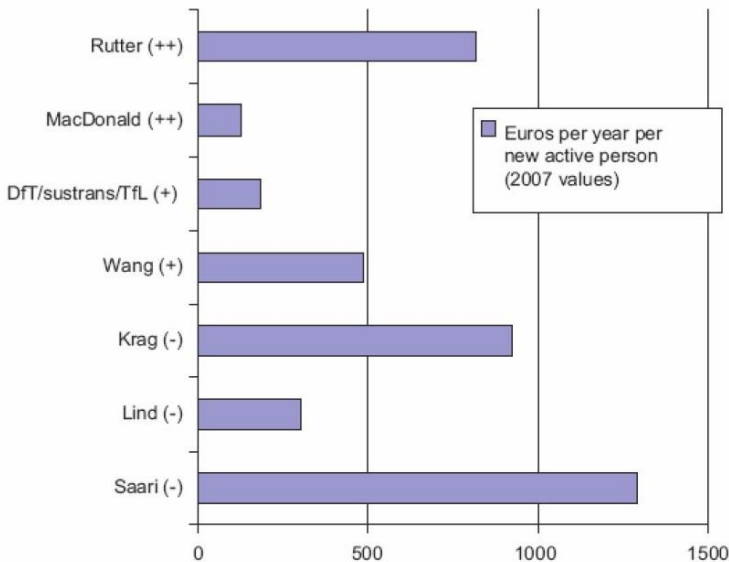
a. The overall value of cycling to the economy

Cycling is a healthy, benign and efficient mode of transport and evidence suggests that it has the potential to make a positive contribution to the national economy:

- Research commissioned by Cycling UK found that if cycle use increased from less than 2% of all journeys (current levels) to 10% by 2025, and 25% by 2050 (as recommended by the Parliamentary Cycling Group's 'Get Britain Cycling' report¹²), the cumulative benefits would be worth £248bn between 2015 and 2050 for England – yielding annual benefits in 2050 worth £42bn in today's money. This calculation even takes into account the fact that long term benefits are worth less than those achieved in the shorter term. These economic benefits are generated chiefly through a physically fitter population, but also in terms of reduced congestion and absenteeism, improved air quality and other areas.¹³
- As long ago as 1993, Cycling UK estimated that a 20% shift in cycle use could save £1.3bn and a 50% shift £4.6bn (in 1993 prices).¹⁴ The factors taken into account included congestion, capital spend on roads, pedestrian and motorist casualties, air pollution, global warming, noise, heart disease and working days lost (general and from coronary heart disease).
- More recently, a study by economists SQW calculated (conservatively) that a 50% increase in cycle trips would create total savings to the economy of more than £1.3 billion per year in terms of premature deaths (adult), NHS costs (adult), absence from work, pollution and congestion.¹⁵
- An LSE study worked out that occasional, regular and frequent cyclists contributed a 'gross cycling product' of c£3bn to the British economy in 2010.¹⁶
- A German study has calculated that a 10% increase in the modal share of walking and cycling in urban areas would mean that the German GDP would go up by 1.11% by 2030, representing € 29bn, based on German GDP in 2012. ¹⁷



Value of each individual cyclist:



- A 2008 SQW study suggested that the annual economic benefits produced by each individual regular cyclist are between £540-£640 per year, meaning that every £10,000 invested in encouraging people to cycle only needs to generate one extra cyclist each year over a 30 year period to break even.¹⁸
- The chart to the left shows how much various studies have each calculated the economic value to society of each new cyclist. (Source: *Economic analyses of transport infrastructure and policies including health effects related to cycling and walking: a systematic review.* (Nick Cavill et al)).¹⁹

b. Investing in cycling: benefit to cost ratios (BCRs)

Government guidance on the evaluation of major projects says that a 'medium' value-for-money project will have a BCR of between 1.5 and 2, and a 'high' value-for-money project a BCR of at least 2.²⁰ When done properly, cycling is one of the most cost-effective transport investments:²¹

- A report for the Department of Health in 2010 concluded that "... the economic justification for investments to facilitate cycling and walking has been undervalued or not even considered in public policy decision-making. Yet, almost all of the studies report economic benefits which are highly significant, with benefit to cost ratios averaging 13:1 (UK and non-UK)." ²²
- Cycling infrastructure investment produces very high rates of return. An assessment of the London Cycle Network+ gave it an overall BCR of 3.94, which is excellent for a transport project, far surpassing most major road or public transport projects (see also section 1b).²³
- An estimation of returns on the investment in Cycling England's six first Cycling Towns suggests a BCR of 2.6 – 3.5 (over 10 years, in terms of reduced mortality, decongestion, reduced absenteeism, amenity and road casualties).²⁴
- Cycle training appears to have the highest BCR: a case study of cycle training in London funded by TfL found that the overall BCR was 7.44, which is very high indeed.²⁵
- Academics who studied the cost benefit analysis used by Copenhagen to decide whether to build new cycling infrastructure, concluded that cars cost society and private individuals six times more than cycling. The impact of the car comes in at €0.50 per kilometre and the impact of the bicycle at €0.08 per kilometre. The authors compared cars to bicycles in terms of air pollution, climate change, travel route, noise, road wear, health and congestion. The study also found that, looking at the costs/benefits for society alone, one kilometre by car costs €0.15, whereas society earns €0.16 on every kilometre cycled.²⁶



c. How cycling helps the economy

Cycling is beneficial for the economy in many ways:

- **Tackling congestion**

As mentioned above (1a), congestion is estimated to cost around £10bn a year in large urban areas.²⁷ Congestion is a serious issue for business – it affects the journey times of employees both for commuting and when they are travelling for work and it also causes delays in the distribution of goods. Switching from driving to cycling, especially for short trips or in combination with public transport, helps ease these blockages because it makes much more efficient use of roadspace:

- Each lane of a typical urban road can accommodate 2,000 cars per hour, or 14,000 cycles.²⁸

- **Saving the NHS money**

As Cycling UK's briefing *Cycling and health* explains, cycling keeps people fit and improves their health. It helps prevent and tackle obesity and a range of other diseases that are not only costly to treat but also damage productivity. As a physical activity, cycling could therefore help save the NHS money:

- Research published in the medical journal *The Lancet* concluded that, potentially, increased walking and cycling in urban England and Wales could save the NHS roughly £17bn (2010 prices) within 20 years because of its impact on diseases associated with physical inactivity (type 2 diabetes, dementia, ischaemic heart disease, cerebrovascular disease and cancer).²⁹

Conditions associated with physical inactivity, on the other hand, drain public finances:

- The Foresight report projected that NHS costs attributable to overweight and obesity would double to £10bn per year by 2050, if nothing is done to tackle it. It estimated that the wider costs to society and business would reach £49.9bn per year (2007 prices).³⁰
- Research commissioned by the Department of Health found that, on average, physical inactivity cost each Primary Care Trust (PCT) in England £5 million a year (primary and secondary care costs attributable to physical inactivity, based upon 2006/07).³¹
- Research for AstraZeneca reports that: "CVD was responsible for a cost of €18.9billion [over £15bn] in 2014, which represents 1.4% of the UK's GDP. As elsewhere, an increase in the cost from CVD is expected by 2020, to €23.1 billion."³²

Health Economic Assessment Tool for Cycling (HEAT), a free on-line tool from the World Health Organisation, helps calculate how much cycling saves from reductions in mortality. It can be used to assess the value of existing cycle use, or what the benefits might be for an increase in cycling on a particular route/area. www.euro.who.int/HEAT

For more on health, see www.cyclinguk.org/campaigning/views-and-briefings/health-and-cycling

- **Creating jobs**

Catering for cycling and cyclists helps create jobs, and not just because of the cycle trade:

- An ECF study (2014) calculated that around 655,000 people in the EU work in the cycling sector (mostly in cycle tourism), and that doubling cycling's modal share would create 400,000 additional jobs. The researchers took multiple cycling-related activities into account, e.g. retail, manufacturing, infrastructure investment, tourism and other services.³³
- The same study also suggests that: cycling has a higher employment intensity per million of turnover than other transport sectors, thus offering a higher job creation potential; and that cycling jobs are more geographically stable than other sectors, benefit local economies, and offer access to the labour market to lowly qualified worker.

- In 2010, around 23,000 people were employed directly in bicycle sales, distribution and the maintenance of cycling infrastructure.³⁴
- Research suggests that building local cycle facilities generates more jobs per Euro spent than large transport infrastructure projects.³⁵
- A 2007 report on the 7Stanes mountain bike trails found that the project helped create 205 full time equivalent jobs in southern Scotland.³⁶
- The experience of Cycling UK's Bike Club project shows that teaching young people cycle maintenance gives them wider technical skills, thus boosting their employability.

- **Saving business and employers money and improving productivity**

Employers who promote cycling to their staff can make savings and improve productivity

- Providing one workplace car parking space per year can cost up to £2,000,³⁷ whereas buying and installing cycle parking comes in at about £100 per stand.³⁸ Depending on the location, 6-8 plus cycle stands can fit into one car parking space, accommodating at least 12 cycles.

“When the choice came down to providing car parking at a cost of £2,000 per space per year at its worldwide headquarters in Brentford, or supporting those who were willing to give up their cars and cycle to work at the cost of £400 per annum, GSK found that there was no decision to make.” TfL. *Workplace Cycle Parking Guide*. 2006. (GlaxoSmithKline Case Study, p4). <http://content.tfl.gov.uk/Workplace-Cycle-Parking-Guide.pdf>

- The tax-free mileage rate for employees cycling on business is 20p, whereas the rate for cars/vans is over twice as much at 45p.
- Dutch research that surveyed 1,236 employees found that cycle commuting reduced a worker's time off sick by more than one day per year on average, compared with non-cyclists.³⁹
- Another study found that if those who cycle less than once a week took up regular cycling (three times a week or more), the Netherlands could save €27m through reduced absenteeism.⁴⁰
- Cycling UK calculates that by taking one day less off sick each year, cycle commuters save UK businesses almost £83m annually.⁴¹
- In 2009, production losses due to mortality and morbidity associated with CVD cost the UK over £6bn, with c21% of this cost due to death and 13% due to illness in those of working age.⁴²

- For more on cycle-friendly employers, see:

www.cyclinguk.org/campaigning/views-and-briefings/cycle-friendly-employers-ctc-views

- **Injecting money into the economy through the cycle trade**

- With 3,514,000 cycle unit sales in 2015, the UK was the second biggest cycle market in Europe, behind only Germany at 4,350,000. In 2010, UK cycle production stood at around 23,000 units and rose to about 53,000 units in 2015.⁴³
- Researchers at the London School of Economics calculated that in 2010, people directly employed in bicycle sales, distribution and the maintenance of cycling infrastructure generated £500m in wages and £100m in taxes.⁴⁴



- **Boosting the vitality of town centres and the rural economy**

The contribution that cyclists make to the trading vitality of town centres and the rural economy is often overlooked or underestimated:

- Although cyclists may spend less than car-borne shoppers per trip, their total expenditure is, on average, greater as they tend to visit the shops more often.⁴⁵
- Researchers for TfL (Transport for London), who surveyed shoppers in 15 town centres in the capital, found that those who arrived by car did not spend all that much more on average than those who arrived by cycle - £226 and £188 respectively per month (walkers spent £373).⁴⁶
- A study in Bristol found that retailers tend to overestimate their customers' use of cars and the distances they travel. They thought, for example, that just 12% of customers lived within half a mile, and 40% more than two miles away. In reality, 42% had travelled less than half a mile and 86% less than two miles.⁴⁷
- Research into shopping in Copenhagen (where cycling levels are high), found that cycling customers spend a total of 2.05 billion € per year whereas car driving customers spend slightly less, at 2.04 billion € per year. In total, walking and cycling customers count for 55% of the total revenue of street-level shops and supermarkets. The study also concluded that cyclists tend to spend less per shopping trip, but shop more often.⁴⁸
- In New York, USA, a project to shift space from cars led to significant investment in, for instance, high quality cycle lanes, more space for pedestrians and better bus provision. This has boosted local business overall, but in some areas the return has been huge: according to figures published in 2012, on 9th Avenue (Manhattan), where a high quality cycle lane was rebuilt in late 2008, retail sales increased by up to 49%, compared to 3% borough-wide.⁴⁹
- When San Francisco reduced car lanes and installed bike lanes and wider sidewalks on Valencia Street, two-thirds of merchants said the increased levels of bicycling and walking improved business. Only 4% said the changes hurt sales.⁵⁰
- In a popular street in Melbourne, Australia, the retail spend generated by one car parking space occupied at all times has been calculated at \$27 per hour. The same space (13m²), occupied by six fully utilised bike stands generated \$97.20 per hour.⁵¹
- 7Stanes mountain bike trails in Scotland brought in over £9 million in visitor spend in 2007.⁵²
- A Transform Scotland report estimates that mountain biking and leisure cycle tourism combined contribute between £236.2m and £358m per year to the Scottish economy, with a cumulative gross value added (GVA) of £129m.⁵³

For a useful collection of studies demonstrating the business case for converting street parking into cycle lanes, see article from the US Atlantic CityLab (March 2015):

<http://www.citylab.com/cityfixer/2015/03/the-complete-business-case-for-converting-street-parking-into-bike-lanes/387595/>

- **Adding value to neighbourhoods and communities**

People appreciate the proximity of cycle tracks or bike hire facilities to their homes, and it helps make some areas more attractive to live in (as reflected in rent and property values).

- London's bike hire scheme has helped make renting properties in some areas of the capital more desirable. According to a report by letting agents in 2014, being able to hire a bike near home and cycle to an otherwise distant tube station has opened up certain 'backwaters' to more tenants.⁵⁴
- In 2008, the National Association of Realtors (NAR) recognised the importance of considering cycling in every transportation project because it helps sell 'communities' as well as homes.⁵⁵

- A 2014 report from America on the impact that protected cycle lanes on business found that:⁵⁶
 - For every quarter mile nearer to an off-street bicycle trail, the median home value in Minneapolis-St. Paul increases by \$510;
 - Homes within a half-mile of Indiana's Monon Trail sell for an average of 11% more than similar homes farther away.
- A literature review from 2006 for The State of Delaware Department of Transportation, concluded that *"The majority of studies examined indicate that the presence of a bike path/trail either increases property values and ease of sale slightly or has no effect."*⁵⁷
- Research from the University of Cincinnati looked at houses along a 12-mile stretch of the Little Miami Scenic Trail (a former rail line that cuts across the north eastern portion of Cincinnati) and found that home buyers were willing to pay a premium of \$9,000 to be within 1,000 feet of access to the trail.⁵⁸

"We don't work in places that aren't near bike lanes." Jair Lynch, founder and CEO of a D.C. real estate development and construction company, quoted in US magazine, Yes! – article by Jay Walljasper. 31/1/2013.

www.yesmagazine.org/happiness/how-bicycling-is-transforming-business

• Delivering goods

Despatching or carrying goods by cycle, particularly for the 'last mile' into town or city centres, makes sound business sense. Cycles can access areas in towns and cities that other vehicles may struggle to reach because of narrow streets, congestion or motor traffic restrictions. Cycles are also becoming more and more popular amongst small traders (e.g. for selling sandwiches etc.).

There are a number of cycle delivery companies already operating successfully in the UK, helping to make urban centres more accessible for business purposes and, at the same time, more pleasant places to be by reducing pollution and the volume of motorised traffic, e.g.:

- Outspoken Delivery offers a variety of services in Cambridge, including 'The Last Mile' which carries goods from its depot on the edge of the city into the centre where many streets are narrow and access restricted to pedestrians and cyclists.
- Gnewt Cargo in London offers a 'multi-drop last mile logistics solutions' utilising its all zero-emission fleet for other third party logistics companies, large retailers and others.

'CycleLogistics', a European project supported by Intelligent Europe (2011-2014) is promoting the use of cycles as credible alternative transport for urban deliveries, municipal services, sellers, personal shopping etc. www.cyclelogistics.eu/. Cycling UK is participating in the project.



Photo: Ashmore Imaging

3. How to promote cycling for economic benefit

a. Tax

Cycling UK view:

- The Treasury should incentivise cycling through:
 - Adhering to the principle that 'the polluter pays' as the basis of taxation of transport users
 - Maintaining a tax-free mileage rate that makes cycling on business financially worthwhile
 - Supporting cycle commuting schemes that save businesses and employees tax (e.g. the 'salary sacrifice' Cycle to Work scheme)
 - Reducing VAT on cycle repairs and working towards a zero VAT rating for cycles
 - Not taxing cycles for the use of the roads

Given the contribution that cycling can make to public finances (as explained above), the Treasury should incentivise cycling. It can do this through taxation:

- **The 'polluter pays principle'**

The 'polluter pays principle' makes the party who has produced pollution responsible for paying for the damage done to the natural environment, usually through taxes. It is intended to correct for the 'externalities' caused by road transport – see section 1a. As far as road transport is concerned, vehicle excise duty (VED) is already based on either engine size or fuel type and CO2 emissions, depending on when the vehicle was registered.

Even after payment of fuel duty and other motoring taxes, motoring still creates a net economic disbenefit (see section 1). At the same time though, the cost of motoring has declined in real terms over the last 10 years while public transport costs have increased,⁵⁹ leading to a progressive shift to more socially harmful travel choices. Hence there is an entirely valid economic justification to increase fuel taxation.

Incentivising cycling as a viable, 'green' alternative to driving, also through taxes (see below), is a positive way of supporting this approach. Cycling is a non-polluting, low-carbon form of transport, particularly useful for short trips (commuting, shopping etc.), and it will help the UK meet the targets of the *Climate Change Acts*.

See Cycling UK's briefings on climate change and air quality for more:

www.cyclinguk.org/campaigning/views-and-briefings

- A 2012 report published by the Institute for Public Policy Research (IPPR), looked closely at whether the 'war on the motorist' was myth or reality and concluded that *"Motoring taxes are not as high as people think, yet pressure on politicians to reduce these costs is acute [...]. New ways should be found to reduce the externalities caused by road traffic [...]. Government should accompany this with a clear statement of the importance of encouraging modal shifts away from driving and towards more sustainable forms of transport, such as walking, cycling and public transport."*⁶⁰



- **Tax-free mileage rate**

One way of encouraging employees to travel on business by cycle is for HMRC to allow employers to pay cyclists a viable tax-free mileage rate (currently 20p). As mentioned above (2c), businesses benefit financially from promoting cycling in the workplace.

- **Cycle commuting tax incentives**

The Cycle to Work Scheme was introduced under the 1999 *Finance Act*. Essentially a salary sacrifice arrangement, it allows employers to buy cycles, hire them to staff for (usually) a monthly repayment and give them the option of buying the machine at the end of the loan period. Employees save money because the repayments are made before their salary is taxed.

Since Cycle to Work was introduced, HMRC has felt the need to clarify a few aspects of it that were causing confusion (e.g. how much employees should pay for the bike at the end of the loan period without attracting tax; and VAT on repayments), but despite tighter rules, the benefits are still significant.

The Cycle to Work initiative has proved very popular and helps encourage people to commute by bike, so the continuing support of the Treasury is important. What's more, a study (2016) calculated that it generates at least £72m a year in economic benefits for the UK economy and employers through improved physical fitness and associated health benefits.⁶¹

For more see:

- www.cycletoworkalliance.org.uk
- www.gov.uk/government/publications/cycle-to-work-scheme-implementation-guidance

Bike to work breakfasts: Unfortunately, tax relief on providing breakfast for employees on designated 'Cycle to Work' days was abolished from 6/4/2013. This scheme cost the Treasury very little and was a valuable way of rewarding staff who commuted to work.

For Cycling UK's guide to tax incentives, see: www.cyclinguk.org/article/campaign-article/tax-incentives

- **VAT**

Members of the European Union must abide by the EU VAT Directive, so what goods and services are taxed and how much discretion Member States have over rates is not within the control of their national governments. As with any VAT directive, amendments have to be agreed by all Members, unanimously. The UK is to leave the EU, of course, but for now following arrangements apply:

Cycle Repairs: the EU allows Member States to reduce VAT on 'minor bicycle repairs', as 'labour intensive local services' (Annex IV of EU VAT Directive 2006/112/EC).⁶² This means that the UK Government could have introduced a VAT rate of 5% for these services in the Budget, but has not done so.

This is unfortunate because lower (or zero) VAT on cycle repairs would not only help boost the trade, but also the growing number of charitable bike-recycling enterprises that train young people in disadvantaged communities and provide them with economically useful skills, whilst offering a source of affordable bikes. Lower charges for cycle repairs would also help encourage more people to have their bikes fixed, instead of abandoning cycling altogether.

Cycles: all cycles sold in the UK are subject to VAT (currently 20% in the UK). Zero-rating them instead would almost certainly help boost sales and encourage cycling, but Members of the European Union must apply a standard VAT rate of 15% or more to most goods, and can only introduce new reductions of no less than 5% on certain items specified in Annex III to the VAT Directive.⁶³ Cycles are not on the list. The European Cyclists' Federation (ECF) has called for cycles to be VAT-free.

Cycle helmets: these are already zero-rated, as long as they conform to standards which satisfy requirements imposed by the *European Community Directive on Personal Protective Equipment* (the PPE Directive) and bear the correct conformity mark. While this is welcome, Cycling UK sees no reason for zero-rating helmets but not cycles.

- **Taxes on road use and vehicles**

'Road tax' was abolished in the 1930s for fear that drivers would think they "owned the road". What motorists pay is Vehicle Excise Duty (VED), the revenue from which goes into general taxation and is not specifically used to pay for the roads. The cost of VED is based on fuel type and CO2 emissions, so it is essentially a tax on the amount of pollution a car emits. Cycles, of course, don't produce any CO2, so are exempt. From April 2017, motorists will pay a flat standard rate (£140) for all new cars except those emitting 0 grams of CO2 per kilometre (all cars registered before 1 April 2017 will remain in the current VED system, which will not change).

At the moment, roads are funded through council and income tax, which means that most adult cyclists do contribute to the cost simply because they are tax-payers. In fact, given that they are banned from motorways and cause negligible damage to road surfaces, tax-paying cyclists already help fund roads they are not entitled to use and for road surface damage that they do not actually cause.

From 2020, however, VED revenue for new cars will go into a 'Roads Fund' to invest in the strategic road network.⁶⁴ Cycling UK is worried that this could breathe more life into the argument that 'cyclists don't pay road tax', even though 80% of cyclists hold a driving licence and 82% of cyclists in Great Britain live in a household with access to a car or van.⁶⁵

- See Cycling UK briefing on 'Cyclists' behaviour and the law' for our views on licencing. www.cyclinguk.org/campaigning/views-and-briefings/cyclists-behaviour-and-law
- <http://ipayroadtax.com/> goes into more detail about tax and cyclists.

b. Capital v revenue funding

Cycling UK view: Both national and local authorities should dedicate sufficient resources to smarter choices, recognising that they rely on revenue rather than capital funding.

Money from national government for transport projects tends to come in the form of capital funding, which pays for 'hard' infrastructure (roads etc). However, revenue funding – or ongoing funding for running costs – is crucial for 'soft' or 'smarter choice' initiatives, such as cycle training and promotional campaigns/schemes. Revenue funding, however, is more difficult to obtain which means that local authorities often struggle internally to gather enough finance to set up and maintain smarter choice projects, despite their cost-effectiveness:

- A report for the DfT (2004)⁶⁶ found that *"...on average, every £1 spent on well-designed soft measures could bring about £10 of benefit in reduced congestion alone, more in the most congested conditions, and with further potential gains from environmental improvements and other effects, provided that the tendency of induced traffic to erode such benefits is controlled."*

A dedicated and easily accessible stream of revenue funding from national government for sustainable transport would help overcome this barrier.

See Cycling UK's 'Smarter Choices' briefing for more:
www.cyclinguk.org/campaigning/views-and-briefings/smarter-choices

c. The role of economic- focused bodies

Cycling UK view: Economics-focused bodies such as Local Enterprise Partnerships, regeneration agencies, developers and retailers should recognise the value of cycling and take action to promote and encourage it.

While most organisations will benefit from promoting cycling in some way, those specifically focused on the economy, investment or trade have a direct incentive to realise its financial potential.

By introducing or supporting measures that encourage and incentivise people to cycle ('smarter choices'), along with the provision of high quality, cycle-friendly infrastructure, all of the following organisations have a role to play:

- **Local Enterprise Partnerships (LEPs, England, outside London)** are 39 partnerships between local authorities and businesses. They decide what the priorities should be for investment in roads, buildings and facilities in the area and can apply to create 'Enterprise Zones'. These zones can enjoy tax incentives and simplified planning regulations to support both new and expanding businesses.
 - LEPs control a sizeable portion of the local transport budget, but have so far largely prioritised roads over active travel. The Campaign for Better Transport's 'LEP Watch' for 2015 found 36 LEPs between them had decided to spend £3,424.74m of their planned projects budget on 444 transport schemes, with just over 54% on new road capacity, and only 1% on cycling.⁶⁷
 - LEPs have been strongly criticised (e.g. by the National Audit Office⁶⁸) for their lack of the skills and/or transparency needed to spend such significant sums of public money. Hence the emphasis seems to be increasingly shifting to *Combined Authorities* and *Devolution Deals*, which (amongst other things) offer long-term funding and devolved powers related to transport.
- **Business Improvement Districts (BIDs)** are partnerships between a local authority and local businesses that aim to improve a specified area for commercial activity. A good example of how a BID can encourage cycling is award-winning 'Better Bankside' in London, an independent, business-owned and led company. It offers a secure bike park, a cycle hire scheme, Dr Bike repairs and, every few months, cycle maintenance courses for businesses and employees. www.betterbankside.co.uk/our-services/97
- **Regeneration Agencies** are appointed to help boost an area's economic and social development and job prospects. They bring together a wide range of partners, including councils, the community and businesses, and can use their co-ordinating role to advocate cycling in a concerted and effective way. Lending their support for local bike-recycling enterprises, for example, could help open up job opportunities in disadvantaged areas and provide skills and training. Ensuring that people can access centres of employment by cycle makes working there more viable for non-car owners too.
- **Developers:** most local planning authorities vet all proposals carefully for their potential impact on local traffic and developers who take sustainable transport seriously may find that their applications have a better chance of success. Also, as local communities are often concerned about extra traffic from new developments, robust plans to minimise it might help pre-empt formal objections.
 - High quality infrastructure for cycling to and within all new developments may also make the properties there more attractive and viable for buyers. Dense/affordable housing in particular often offers limited space for cars, while residents may well want to reduce their transport costs and, in doing so, maximise their incomes to the benefit of tenants and landlords alike. As mentioned (2c), a property near to a cycle route may prove easier to sell.
- **Retailers:** as discussed above (2c), cycling contributes to the vitality of town centres, so it is in the interests of local traders to support all measures that promote cycling, from providing high quality cycle parking for customers to proposals to close high streets to motor traffic.

<p>These are just some of the measures that LEPs, Regeneration Agencies, developers and retailers can advocate, support or introduce to encourage cycling:</p>
<ul style="list-style-type: none"> • Travel plans – a collection of measures that workplaces/ schools/ developments etc. adopt to reduce car use for commuting and business travel
<ul style="list-style-type: none"> • Advertising, marketing and promotional campaigns, maps and events
<ul style="list-style-type: none"> • Cycle training initiatives (Bikeability)
<ul style="list-style-type: none"> • High standard provision for cycling on and off the highway
<ul style="list-style-type: none"> • Cycle parking (short- and long-stay, secure, well located, public and domestic etc.)
<ul style="list-style-type: none"> • Integrating cycling with public transport (good access to stations and stops, storage at stations and the facility to carry cycles on services)
<ul style="list-style-type: none"> • High quality, people- rather than car- focused design for the public realm
<ul style="list-style-type: none"> • Developer contributions (Community Infrastructure Levy, Section 106 etc.)
<ul style="list-style-type: none"> • Workplace facilities for cycle commuters (showers, lockers, parking etc.)
<ul style="list-style-type: none"> • Supporting bike-related businesses (recycling, repairs etc.)

Many of these measures are discussed in more detail in the following Cycling UK briefings and guides on: workplaces; smarter choices: cycle-friendly design and planning; planning. All at: www.cyclinguk.org/campaignsbriefings

FOOTNOTES AND REFERENCES

- ¹ Cabinet Office Strategy Unit. *An Analysis of Urban Transport*. Nov. 2009. http://webarchive.nationalarchives.gov.uk/+http://www.cabinetoffice.gov.uk/strategy/work_areas/urban-transport.aspx
- ² Hopkinson, Lisa. *The War on Motoring: Myth or Reality?* Aug 2012. www.ippr.org/images/media/files/publication/2012/08/war-on-motoring-myth_Aug2012_9542.pdf
- ³ Becker, Prof J, University of Dresden. *The true costs of automobility: External costs of cars*. www.greens-efa.eu/fileadmin/dam/Documents/Studies/Costs_of_cars/The_true_costs_of_cars_EN.pdf
- ⁴ Maddison, D; Pearce, D. *Blueprint 5: The True Costs of Road Transport*. 1996. Kogan Page, London.
- ⁵ Quoted in *Collection of Cycle Concepts 2012*. Cycling Embassy of Denmark (p17). <http://www.fietsberaad.nl/library/repository/bestanden/Collection%20of%20Cycle%20Concepts%202012.pdf>
- ⁶ SACTRA. *Transport and the Economy*. 1999. http://webarchive.nationalarchives.gov.uk/20050301192906/http://dft.gov.uk/stellent/groups/dft_econappr/documents/pdf/dft_econappr_pdf_022512.pdf
- ⁷ David Scotney. *Does transport investment create jobs and lead to economic growth?* Oct 2012 (Updated Sept 2015). <http://www.eltis.org/content/does-transport-investment-create-jobs-and-lead-economic-growth>
- ⁸ Eddington, Sir Rod. *The Eddington Transport Study*. 2006. <http://web.archive.org/web/20080324002356/http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/>
- ⁹ Open letter signed by 32 transport professors, in association with the Town Planning Society. Published by TPS. 22/1/2013. https://tps.org.uk/news_478
- ¹⁰ In its 2009 analysis of urban transport, the Cabinet Office pointed out that most factors relating to cycling and walking are assessed qualitatively by NATA, whereas “Carbon, physical fitness, noise, and accidents are quantitatively monetised. However, factors such as condition of walking and cycling environments, accessibility, severance, ambience and townscape are not included in BCRs. Some of these factors are qualitatively assessed, and a judgement is made as to whether these are sufficiently large to change value for money rankings. However, authorities often find it more difficult to take account of qualitative factors in value for money assessments. This means schemes which significantly benefit or impact walking and cycling are not equally prioritised compared to other schemes, skewing investment decisions.” http://webarchive.nationalarchives.gov.uk/+http://www.cabinetoffice.gov.uk/strategy/work_areas/urban-transport.aspx
- A 2008 CBT/Green Alliance report concluded that NATA was seriously flawed because it “puts a monetary value on some things that can’t be monetised, greatly exaggerates the time-savings a new project would bring and values some people less than others.” Campaign for Better Transport/Green Alliance. *Getting Transport Right*. Feb 2008. http://www.green-alliance.org.uk/page_153.php

- A 2004 report, jointly commissioned by a number of sustainable transport organisations including Cycling UK (then CTC), suggested that "...there are some in-built biases in current appraisal techniques – developed, as they were, in a different time and for a different agenda – which discriminate against some of the best measures, and for some of the least effective." Goodwin, Phil. *Valuing the Small: Counting the Benefits*. Commissioned by CPRE, Cycling UK, Living Streets, Slower Speeds Initiative, Sustrans and Transport 2000. http://eprints.ucl.ac.uk/1263/1/2004_27.pdf
- ¹¹ DfT. *Social Impact Appraisal*. Tag Unit A4.1, section 3, Physical Activity Impacts. Jan 2014. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/275364/webtag-tag-unit-a4-1-social-impact-appraisal.pdf#nameddest=chptr03. The health benefits covered by HEAT, however, are still not particularly comprehensive.
- ¹² All Party Parliamentary Cycling Group. *Get Britain Cycling*. April 2013. www.cyclinguk.org/news/get-britain-cycling-report-recommends-%C2%A310-head-year-funding-for-cycling
- ¹³ Lovelace, R and Crawford, F. *The Economic Cycle*. Cycling UK. Jan 2015. www.cyclinguk.org/economic-cycle
- ¹⁴ Cycling UK. *Costing the Benefits: The Value of Cycling*. 1993 (print only). ISBN 0-902237-13-6
- ¹⁵ SQW for Cycling England. *Valuing the Benefits of Cycling*. 2007. <http://webarchive.nationalarchives.gov.uk/20110407094607/http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2008/08/valuing-the-benefits-of-cycling-full.pdf>
- ¹⁶ Dr Alexander Grous / LSE. *The British Cycling Economy – ‘Gross Cycling Product’*. Commissioned by Sky and British Cycling. Aug 2011. <http://eprints.lse.ac.uk/38063/1/BritishCyclingEconomy.pdf>
- ¹⁷ Research institutes Fraunhofer, INFRAS and IFEU, commissioned by the German Environmental Agency. *Wirtschaftliche Aspekte nichttechnischer Maßnahmen zur Emissionsminderung im Verkehr* ('Economic aspects of non-technical measures to reduce traffic emissions'). www.isi-projekt.de/wissprojekt-de/ntm/downloads.php (English summary downloadable).
- ¹⁸ SQW for Cycling England. *Planning for Cycling*. 2008. www.ciltuk.org.uk/Portals/0/Documents/The%20Hub/planning/Planning_for_Cycling_report_to_Cycling_England_18_12_08.pdf
- ¹⁹ Published in *Transport Policy* Volume 15, Issue 5, September 2008, Pages 291–304 <http://www.sciencedirect.com/science/journal/0967070X/15/5>
- ²⁰ DfT. *Value for Money Assessments*. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255126/value-for-money-external.pdf
- ²¹ As further evidence of the cost-effectiveness of cycling investment, the BCR of road safety schemes in the first round of LTPs was estimated at about 2 – see DfT, *Long Term Process and Impact Evaluation of the Local Transport Plan Policy*, Final Report (prepared by Atkins, PWC and Warwick Business School), June 2007, Pages 10-2 and 3.
- ²² Davis, Dr Adrian for the Department of Health/Government Office for the South West. *Value for Money: An Economic Assessment of Investment in Walking and Cycling*. 2010. <http://www.apho.org.uk/resource/item.aspx?RID=91553>
- ²³ SQW for Cycling England. *Valuing the Benefits of Cycling*. 2007. <http://webarchive.nationalarchives.gov.uk/20110407094607/http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2008/08/valuing-the-benefits-of-cycling-full.pdf>
- ²⁴ DfT. *Cycling Demonstration Towns Development of Benefit-Cost Ratios*. Feb 2010 <http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2010/02/091223-cdts-bcr-analysis-final-edit.pdf>
- ²⁵ SQW Consulting. *Valuing the Benefits of Cycling: A Report to Cycling England*. May 2007 (page 75). <http://webarchive.nationalarchives.gov.uk/20110407094607/http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2008/08/valuing-the-benefits-of-cycling-full.pdf>
- ²⁶ Gossling S & Choi A. *Transport transitions in Copenhagen: Comparing the cost of cars and bicycles*. Published in *Ecological Economics*. May 2015. www.sciencedirect.com/science/article/pii/S0921800915000907
- ²⁷ Cabinet Office Strategy Unit. *An Analysis of Urban Transport*. Nov. 2009. http://webarchive.nationalarchives.gov.uk/+http://www.cabinetoffice.gov.uk/strategy/work_areas/urban-transport.aspx
- ²⁸ Botma H & Papendrecht H. *Traffic operation of bicycle traffic*. TU-Delft, 1991. <http://pubsindex.trb.org/view.aspx?id=365588>
- ²⁹ Jarrett, Dr James (et al). *Effect of increasing active travel in urban England and Wales on costs to the National Health Service*. Published in *The Lancet*, Volume 379, Issue 9832, pp 2198 - 2205, 9 June 2012
- ³⁰ Foresight. *Tackling Obesity: Future Choices*. 2007. www.bis.gov.uk/assets/foresight/docs/obesity/17.pdf
- ³¹ Dept of Health. *Be Active, Be Healthy: a plan to get the nation moving*. Feb 2009. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_094359.pdf p59ff
- ³² Cebr for AstraZeneca. *The economic cost of cardiovascular disease from 2014-2020 in six European economies*. Aug 2014. <https://www.cebr.com/reports/the-rising-cost-of-cvd/>
- ³³ ECF. *Cycling Works: Jobs and Job Creation in the Cycling Economy*. Nov 2014. <https://ecf.com/sites/ecf.com/files/141125-Cycling-Works-Jobs-and-Job-Creation-in-the-Cycling-Economy.pdf>
- ³⁴ Dr Alexander Grous / LSE. *The British Cycling Economy – ‘Gross Cycling Product’*. Commissioned by Sky and British Cycling. Aug 2011. <http://eprints.lse.ac.uk/38063/1/BritishCyclingEconomy.pdf>
- ³⁵ David Scotney. *Does transport investment create jobs and lead to economic growth?*



Oct 2012 (Updated Sept 2015). <http://www.eltis.org/content/does-transport-investment-create-jobs-and-lead-economic-growth>

³⁶ EKOS for the Forestry Commission Scotland. *7 Stanes Phase 2 Evaluation*. October 2007.

www.imba.com/sites/default/files/7StanesPhase2FinalReport.pdf

³⁷ TfL. *Workplace Cycle Parking Guide*. 2006. (GlaxoSmithKline Case Study, p.4).

<http://www.tfl.gov.uk/cdn/static/cms/documents/Workplace-Cycle-Parking-Guide.pdf>

³⁸ www.camcycle.org.uk/resources/cycleparking/guide/reality.html

³⁹ Hendriksen IJ et al. (TNO Quality of Life). *The association between commuter cycling and sickness absence*. 2010.

www.ncbi.nlm.nih.gov/pubmed/20580736

⁴⁰ TNO Quality of Life. *Reduced sickness absence in regular commuter cyclists can save employers 27 million euros*. Feb 2009.

www.fietsberaad.nl/library/repository/bestanden/reduced_sickness_absence_kv1_09_02_978Em_laag.pdf

⁴¹ Calculated as follows:

- The cost to the UK of sick absence in 2013 was £29bn pa, with the UK worker taking an average of 9.1 days off per year. www.pwc.co.uk/human-resource-services/issues/the-rising-cost-of-absence-sick-bills-cost-uk-businesses-29bn-a-year.jhtml
- The ONS reported that total UK workforce in June 2013 was 29.76m. <http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2013/sty-uk-employment.html>
- Cycling commuters (judged as someone who cycles ≥3km three times a week or someone who cycles ≥2km four times a week) on average takes one less sick day pa than non-cyclists. *The association between commuter cycling and sickness absence* <http://www.ncbi.nlm.nih.gov/pubmed/20580736>
- 774,821 cycle commuters, England, Wales & Scotland (2011 Census) http://www.ons.gov.uk/ons/dcp171776_357613.pdf & <http://www.scotlandscensus.gov.uk/>

Cost of sickness / total workforce = cost of sickness per employee = £974.46

Dividing this by the number of average sick days, the estimated cost per day out of work is £107.08

£107.08 X 77,4821 = £82,967,832.68

⁴² BHF. *Coronary Heart Disease Statistics*. 2012. <http://www.bhf.org.uk/publications/view-publication.aspx?ps=1002097>

⁴³ COLIBI/COLIPED. *European Bicycle Market & Industry Profile* (2016 edition). http://www.conebi.eu/?page_id=154

⁴⁴ Dr Alexander Grous / LSE. *The British Cycling Economy – ‘Gross Cycling Product’*. Commissioned by Sky and British Cycling. Aug 2011. <http://eprints.lse.ac.uk/38063/1/BritishCyclingEconomy.pdf>

⁴⁵ Krag, Thomas. *Commerce and Bicycles*. (Paper presented at ‘Trafikdage’ at Aalborg University). 2002.

http://copenhagenize.eu/dox/Commerce_and_Bicycles-Thomas_Krag.pdf

See also www.einkaufen-mit-dem-rad.de/shopping_by_bike.shtml

⁴⁶ Transport for London. *Town Centre Study*. Sept 2011.

<http://www.tfl.gov.uk/cdn/static/cms/documents/town-centre-study-2011-report.pdf>

⁴⁷ Sustrans. *Shoppers and how they travel*. (Info sheet LN02). 2006.

<http://www.tut.fi/verne/wp-content/uploads/Shoppers-and-how-they-travel.pdf>

⁴⁸ Cycling Embassy of Denmark. *Are Cyclists Good Customers?* 26/8/2013. <http://www.cycling-embassy.dk/2013/08/26/are-cyclists-good-customers/>. The article says: “When looking at shops and supermarkets at street level (malls excluded), 58% of all shopping trips in Copenhagen are done by cycling or walking. Cycling is the most frequent means of transport for shopping, with 35% of all shopping trips done by bike and only 20% by car.”

⁴⁹ New York City Department of Transport (DoT). *Measuring the Street*. 2012.

www.nyc.gov/html/dot/downloads/pdf/2012-10-measuring-the-street.pdf

⁵⁰ People for Bikes. *Protected Bike Lanes Mean Business: How 21st Century Transportation Networks Help New Urban Economies Boom*. 2014. http://www.peoplepoweredmovement.org/site/images/uploads/Protected_Bike_Lanes_Mean_Business.pdf

⁵¹ Lee, A. *What is the Economic Contribution of Cyclists Compared to Car Drivers in Inner Suburban Melbourne’s Shopping Strips?* (Masters Thesis, University of Melbourne).

http://colabradio.mit.edu/wp-content/uploads/2010/12/Final_Thesis_Alison_Lee.pdf

⁵² EKOS for the Forestry Commission Scotland. *7 Stanes Phase 2 Evaluation*. October 2007.

www.imba.com/sites/default/files/7StanesPhase2FinalReport.pdf

⁵³ Transform Scotland. *The Value of Cycle Tourism*. (Commissioned by Sustrans Scotland). June 2013.

<http://transformscotland.org.uk/what-we-do/publications/>

⁵⁴ See <http://www.briets.co.uk/blog/lettings-in-london/boris-bikes-transform-urban-backwaters-rental-hotspots/>

⁵⁵ League of American Bicyclists. *The Economic Benefits of Bicycle Infrastructure* by Darren Flusche.

http://www.advocacyadvance.org/site_images/content/Final_Econ_Update%28small%29.pdf

⁵⁶ People for Bikes. *Protected Bike Lanes Mean Business: How 21st Century Transportation Networks Help New Urban Economies Boom*. 2014. http://www.peoplepoweredmovement.org/site/images/uploads/Protected_Bike_Lanes_Mean_Business.pdf

⁵⁷ Racca, David P. and Dhanju Amardeep. *Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas*. Project report prepared for Delaware Center For Transportation and The State of Delaware Department of Transportation. Nov 2006.

<http://128.175.63.72/projects/DOCUMENTS/bikepathfinal.pdf>

⁵⁸ University of Cincinnati. *New Research Finds that Homeowners and City Planners Should 'Hit the Trail' When Considering Property Values*. 10/11/2011. www.uc.edu/news/NR.aspx?id=14300

⁵⁹ Hopkinson, Lisa. *The War on Motoring: Myth or Reality?* Aug 2012.

http://www.ippr.org/images/media/files/publication/2012/08/war-on-motoring-myth_Aug2012_9542.pdf

⁶⁰ *Ibid.*

⁶¹ Swift F. et al., Institute for Employment Studies (IES). *Impact of the Cycle to Work Scheme: evidence report*. June 2016.

www.employment-studies.co.uk/resource/impact-cycle-work-scheme ; <http://cycletoworkalliance.org.uk/news/cycle-to-work-scheme-generates-72-million-in-economic-benefits-a-year/> (press release 7/6/2016).

⁶² Council of the European Union Press Release 5/5/2009.

http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/council_pr_9458-09_en.pdf

⁶³ EU VAT Directive 2006/112/EC.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:347:0001:0118:en:PDF>. Member States may continue to charge any lower rates, including zero rates that were in place on 1 January 1991, though they cannot introduce any new rate under 5%.

⁶⁴ <https://www.gov.uk/government/publications/vehicle-excise-duty>

⁶⁵ Figures from: a) DfT in press release 21/9/2012. <https://www.gov.uk/government/news/drivers-and-cyclists-agree-lets-look-out-for-each-other> b) Answer to a Parliamentary Question (asked by Ian Austin MP, answered by Norman Baker MP, Hansard, 9 May 2011 : Column 949W). <http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm110509/text/110509w0001.htm>

⁶⁶ Cairns S, Sloman L, Newson C, Anable J, Kirkbride A & Goodwin P. *Smarter Choices – Changing the Way We Travel*. DfT. 2004.

<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/sustainable/smarterchoices/ctwwt/chapter14conclusions.pdf>

⁶⁷ <http://www.bettertransport.org.uk/roads-nowhere/local-transport>

⁶⁸ NAO. *Local Enterprise Partnerships*. March 2016. <https://www.nao.org.uk/report/local-enterprise-partnerships/>