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Personal Tax Treatment of Company Cars and Commuting Expenses: Estimating the Fiscal and Environmental Costs

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ABSTRACT

Personal Tax Treatment of Company Cars and Commuting Expenses: Estimating the Fiscal and Environmental Costs

Company cars form a large proportion of the car fleet in many OECD countries and are also influential in determining the composition of the wider vehicle fleet. When employees provided with a company car use that car for personal purposes, personal income tax rules value the benefit in a number of different ways. How accurate these rules are in valuing the benefit has important implications for tax revenue, the environment and other social impacts such as congestion. This paper outlines the tax treatment of company cars and commuting expenses in 27 OECD countries and one partner country. It compares these tax settings with a stylised "benchmark" tax treatment that estimates the full value of the benefit received by employees with company vehicles. The paper demonstrates that the estimated tax expenditures associated with company car taxation in these countries in 2012 can be quite considerable. Significantly, from an environmental perspective, in most countries employees faced no additional increase in tax payable in response to an increase in the assumption of distance driven.

RÉSUMÉ

Traitement des véhicules de société et des frais de transport au regard de l'impôt sur le revenu des personnes physiques : estimation des coûts budgétaires et environnementaux

Dans de nombreux pays de l'OCDE, les véhicules de société constituent une grande partie de la flotte automobile, et influent également sur la composition du parc de véhicules au sens large. Lorsque les salariés qui disposent d'un véhicule de société l'utilisent pour leur usage personnel, les dispositions relatives à l'impôt sur le revenu valorisent cet avantage de différentes manières. La capacité de ces dispositions à évaluer correctement cet avantage a d'importantes conséquences en matière de recettes fiscales, d'impact environnemental et d'autres coûts sociaux tels que les embouteillages. Ce document présente le régime fiscal des véhicules de société et des frais de transport dans 27 pays de l'OCDE et dans un pays partenaire. Il compare ce régime fiscal avec un régime « de référence » simplifié qui estime la valeur globale de l'avantage dont bénéficient les salariés disposant de véhicules de société. Ce document montre que les dépenses fiscales estimées qui sont associées à l'imposition des véhicules de société dans ces pays en 2012 peuvent être tout à fait considérables. D'un point de vue environnemental, on constate surtout que dans la plupart des pays, les salariés ne subissent pas de hausse d'impôt suite à une augmentation de l'hypothèse relative à la distance parcourue avec leur véhicule de société.

FOREWORD

The author would like to thank several current and former members of staff in the OECD's Centre for Tax Policy and Development and in the Environment Directorate for their helpful comments on this paper, including Bert Brys, Nils Axel Braathen, James Greene, Pierre LeBlanc, Stephen Matthews and Kurt Van Dender. The author would like to particularly acknowledge the assistance provided by Kurt Van Dender and James Greene in the development and presentation of the analysis. The author is also grateful to Delegates to the Joint Meetings of Tax and Environment Experts for their comments on earlier drafts of this working paper and to Violet Sochay and Michael Sharratt for help with preparing the paper for publication. The author is responsible for any remaining errors.

PERSONAL TAX TREATMENT OF COMPANY CARS AND COMMUTING EXPENSES: ESTIMATING THE FISCAL AND ENVIRONMENTAL COSTS

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EXECUTIVE SUMMARY

The personal income tax rules that apply to employees with respect to transport are fiscally and environmentally important. Two aspects of particular relevance are the treatment of the benefit associated with use of a company car for personal purposes and the treatment of commuting expenses. Examination of the tax treatment in these areas reveals that employee compensation through personal company car use is taxed more lightly than cash wages and that treating commuting expenses as work-related reduces the after-tax cost of commuting relative to other personal expenditures.

Tax settings on company car use and on commuting expenses can create implicit incentives that favour certain modes of transport over others and influence how much employees travel. Transport accounts for roughly a quarter of carbon dioxide emissions in most OECD countries and is a significant source of local air pollution. Company cars are a substantial proportion of the car stock in many OECD countries. Commuting distance and mode of transport are key aspects of travel by individuals. The tax treatment of company cars and commuting expenses therefore has important impacts on the environment and can also contribute to traffic congestion, accidents, noise and other social costs.

In particular, tax settings can cause the usage or intensity of usage of various modes of transport to increase beyond the level that would occur if the tax system were neutral in its treatment of the various options. For example, if the taxable benefit associated with personal use of a company car does not vary with the distance driven, the tax system provides an incentive to travel greater distances, with greater resulting air emissions and other costs, relative to a taxable benefit that varies with distance. Similarly, a deduction for the actual costs of commuting increases incentives to live further away from work, and thus consume more fuel. It also increases the attractiveness of comparatively expensive forms of transport (such as private vehicles and public transport) relative to less expensive options (such as bicycling and walking).

This paper first describes the personal tax treatment of the benefit associated with personal use of a company car and of commuting expenses in 27 OECD countries (Australia, Austria, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland Portugal the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, the United States) and in South Africa. Second, it proposes a benchmark for the neutral tax treatment of company car benefits relative to cash wage income and uses this benchmark to estimate the value of the tax expenditure resulting from country company car tax settings in each country. It concludes by considering the environmental implications of different tax treatments.

Using the benchmark developed and typical parameters for OECD countries, the current tax settings in most of the countries examined appear to underestimate (in many cases substantially) the value of the personal benefit associated with use of a company car. As employees pay tax on the value estimated, employee compensation provided in this form is thus effectively taxed more lightly than cash wages. The study examines the scale of these departures in 26 countries[1] using detailed data on the composition of new car registrations. Using a series of standard assumptions about costs and driving patterns, the study calculates the aggregate taxable benefit for each country under the proposed benchmark treatment and compares it with the aggregate taxable benefit that is calculated under the country's current tax settings. The study estimates for 2012 that between 44% and 58% of the total taxable benefit from the use of a company car is taxed, with midpoint estimate of 50%. The weighted average subsidy per company car per

[1] The fiscal cost is calculated for all of the above countries listed above except for Japan and Poland, because of uncertainty about how to model the actual cost methods used by these countries to calculate the taxable benefit.

year is EUR 1600. The total value of the tax expenditures across these countries – measured as the tax that would be payable on the difference between the taxable benefits under the benchmark and country tax systems – ranges from EUR 19.0 billion to EUR 33.7 billion, with a midpoint estimate of EUR 26.8 billion. The estimates of tax expenditures are relative to the benchmark tax treatment that is developed in this paper: alternative benchmarks could equally be used and would of course generate varying results. They also do not include the impact of behavioural changes (for example, substitution towards other tax-preferred forms of income or changes to car characteristics or driving patterns) that would result if the tax rules were changed to apply the benchmark treatment, which would reduce the amount of revenue gained. Nonetheless, the estimates indicate that current tax rules have a significant fiscal cost.

The main drivers of discrepancies between actual tax systems and the benchmark are the significantly lower benefit (relative to the benchmark) calculated by many countries for the capital cost of the car and the fact that in most countries the tax benefit is not sensitive to the distance driven for personal use. In addition to typically contributing to underestimation of the actual benefit, the absence of a distance component in many countries creates a strong incentive for employees to drive more, since where the fuel and other variable charges are paid by the employer, it reduces the marginal cost of driving to zero. Even in systems which explicitly vary the taxable benefit based on a vehicle's carbon emissions, the taxable benefit estimated under the actual tax rules was generally less than the taxable benefit under the benchmark and was insensitive to the distance driven.

The impact of company car tax settings on environmental outcomes will depend on a range of factors, such as the other transport used by the household, whether the company car is a substitute for another vehicle and whether the provision of a company car increases the overall distance driven by an individual or household. However, as the taxable benefits measured are largely insensitive to distance driven, current tax settings provide incentives for individuals to increase the distance driven in these cars. Moreover, as current tax settings tend to provide a greater subsidy to cars that are less fuel efficient, energy use and the associated external costs are higher than would be the case with a neutral tax treatment.

The paper also reviews the tax treatment of commuting expenses in the 27 countries and considers its fiscal and environmental implications. The treatment of these expenses implies a view about whether commuting expenses in nature are essentially personal (in which case they are not deductible when paid by the employee and taxable to the employee when paid by the employer) or work-related (in which case they are deductible when paid by the employee and tax-exempt to the employee when paid by the employer). In many countries, this treatment is at least consistent among different forms of transport. When it is not, often walking, carpooling and biking are not allowed deductions or exemptions, whereas the use of public transport is often tax preferred. Conversely, the use of cars is often discouraged by the use of conditions and restrictions on the availability of deductions and exemptions.

Treating commuting expenses as work-related lowers the after-tax cost of these expenses relative to other expenses and therefore may encourage commuters to live further from the workplace or to spend more on commuting. Rules that differentiate between different forms of transport may provide incentives to substitute into the tax preferred forms; and away from those options that are not deductible such as walking, biking, and carpooling.

1. Introduction

The personal income tax rules that apply to employees with respect to transport are fiscally and environmentally important. Two aspects of particular relevance are the treatment of the benefit associated with use of a company car for personal purposes and the treatment of commuting expenses. Examination of the tax treatment in this area reveals important non-neutralities in the treatment of different kinds of employment benefits and expenses that have a significant fiscal cost.

At the same time, tax settings in this area create implicit incentives that favour certain modes of transport over others and influence how much employees travel. Transport accounts for roughly a quarter of carbon dioxide emissions in most OECD countries and is a significant source of local air pollution. Company cars are a substantial proportion of the car stock in many OECD countries. Commuting distance and mode of transport are key aspects of travel by individuals. The tax treatment of company cars and commuting expenses therefore has important impacts on the environment and can also contribute to traffic congestion, accidents, noise and other social costs.

This paper describes the personal tax treatment of the benefit associated with personal use of a company car and of commuting expenses in 27 OECD countries and one partner country. It also develops a potential benchmark for the neutral treatment of company car benefits relative to cash wage income, and uses this benchmark to estimate tax expenditures associated with current company car tax settings.[2] Environmental implications are discussed in qualitative terms. The paper also reviews the tax treatment of commuting expenses in these countries and considers the fiscal and environmental implications of the tax treatment.

This paper considers only the tax treatment of company car and commuting expenses of employees and does not consider those on the employer side or the treatment of similar expenses by self-employed entrepreneurs. It is possible, for example, that that there could be a degree of tax preference for company cars in some countries on the employer side (such as overly-generous depreciation rates), but this is a broader issue which typically extends beyond cars that are provided to employees, for example, cars used entirely for business purposes. Similarly, the paper does not discuss vehicle taxes, since such systems generally apply to a broad range of vehicles, of which company cars is only a subset. However, where vehicle taxes are paid for by the employer, this would strengthen the tax-induced preference for company cars. Finally, the VAT treatment of company cars and purchases relating to these cars may also result in a tax advantage for company cars as employers may be able to recover the VAT paid on purchases of and for company cars. This offers a further tax-driven incentive for company car use which is not included in this analysis.

Other policies relating to transport, such as taxes on road fuels and road access, can vary markedly between countries and will have considerable impact in determining the environmental impact of company car settings. Even if the tax treatment of company cars were neutral relative to that of cash salary, company car use would continue to contribute to inefficient levels of other social costs (like air emissions, congestion and accidents) due to the inadequate pricing of transport-related externalities in some countries.

Section 2 of this paper outlines basic principles of income tax treatment of employment income and related expenses. Section 3 considers the tax treatment of company cars and the fiscal and environmental impacts of the tax treatment. Section 3.1 describes the tax treatment of employees' company car income in 26 OECD countries and one partner country. Section 3.2 develops a benchmark for the neutral treatment of

[2] The fiscal cost is calculated for all of the above countries except for Japan and Poland, because of uncertainty about how to model the actual cost methods used by these countries to calculate the taxable benefit.

company car benefits and estimates the tax expenditure that results from departing from that benchmark in each country. Section 3.3 discusses the environmental impacts of company car use. Section 4 of the paper describes the tax treatment of employee and employer paid commuting expenses in each country and discusses the fiscal and environmental implications of these settings.

2. Taxation of employment income – general principles

Personal income tax systems typically tax net income: the income received less the expenses needed to generate that income. This is most obviously seen for corporate income taxation, where the costs of generating income (for example, labour and material costs) are deductible from revenue when calculating taxable income. The same principle applies to employment income – all employment income is typically taxable and related employment expenses are deductible. The application of the principle varies among countries, however, based on differing views as to what kinds of expenses should be considered as employment-related rather than personal in nature.

Another feature of income tax systems is that they usually aim to tax all forms of employment compensation on a uniform basis. If some forms of remuneration are not taxed or are taxed at favourable rates, the employee is not taxed on his or her full income and the proportion of income received in this form is effectively subsidised by the employee's relevant marginal personal income tax rate. Employers and employees have an incentive to shift the remuneration package toward lower-taxed forms of compensation in order to maximise the after-tax benefit to the employee or to minimise the cost to the employer. For these reasons, governments normally include "fringe benefits" or salary provided "in kind" as taxable employment income, although practices differ across countries. Common examples include accommodation and meals, gifts, holiday trips and other prizes, and the use of a company car for personal purposes, which is typically the most significant fringe benefit.

Non-neutral taxation of different forms of employment income can have the impact of lowering tax revenue. Because non-neutral taxation creates tax-induced incentives for the provision of remuneration in this form rather than as (taxable) wages, the fiscal cost may further increase over time. It can affect the equity of the tax system, as those receiving total remuneration with a similar value are taxed differently depending on the form in which the income is received (horizontal equity) and because those with higher incomes may be more likely to receive the benefits of the tax treatment, *e.g.*, because company cars are more often provided to higher-paid executives (vertical equity). It can decrease the efficiency of the tax system as individuals may change their behaviour and substitute toward the tax-preferred forms of remuneration. It may also create a competitive advantage of larger and/or mature firms that more likely have the possibilities to offer a diversified remuneration package in contrast to younger and/or smaller firms, allowing them to attract better-qualified workers. Finally, non-neutral taxation of company car benefits is likely to have environmental impacts, increasing the amount of overall travel and increasing the size as well as changing the composition of the vehicle fleet, with resulting increases in emissions of greenhouse gases and local air pollutants, traffic congestion, wear-and-tear of road infrastructure, and accidents.

Implicitly, the guiding principle behind taxation of fringe benefits is that employer provision of (or reimbursement to the employee for the cost of) goods or services that are "personal" in nature, and not directly related to employment, should be taxable at the personal level. These are things that employees normally would be expected to purchase on their own out of their after-tax earnings. By contrast, provision by the employer of (or reimbursement to the employee of) goods or services necessary for the carrying out of the employee's work would not normally be taxable (or, if the employee bears the cost of this kind of expense, it would normally be deductible as an employment expense from the personal income tax base).

Commuting expenses is one area where the tax rules imply different views among countries as to the nature of the expense. Based on their tax settings, it appears that a slight majority of the countries covered in this report consider commuting expenses to be essentially private, likely due in part to the level of control the employee often has over the amount of the expense through decisions about where they live and work and how they commute. On the other hand, a significant number of countries appear to consider commuting expenses to be closely related to the earning of labour income and therefore treat them as deductible to the employee. Generally, as summarised in Table 1, the combination of two factors determines the tax treatment of the expense.

Table 1: Summary of standard determinants of personal tax treatment of employee benefits and costs

	Personal expense	Work-related expense
Paid or reimbursed by employer	Taxable as employment income	Not taxable as income
Paid by employee	No deduction	Deductible as employment expense

Source: OECD.

3. Taxation of Personal use of company cars

Personal use of a company car is the use by an employee of a car purchased or leased by the employer and provided to the employee for personal use (not related to employment duties). While the provision of the car may be motivated by the employer's desire for the employee to have access to a vehicle for business purposes, in many instances the employee is also able to use the vehicle for personal use. Indeed, there is evidence that personal use is often greater than business use. Most of the personal income tax systems examined recognise that in principle employees who are provided with a company car receive a form of income in so far as they are able to use the vehicle for personal purposes. It saves the employee personal expenses that he or she would otherwise have to pay from after-tax wages.

Where a car is provided to an employee, the employer typically pays the car registration and insurance costs. Fuel and other operating expenses (*e.g.*, maintenance) are often fully covered by the employer, regardless of whether they relate to personal or business use. The covering by the employer of the costs of purchasing or leasing the vehicle and any other ongoing costs (e.g. maintenance and annual registration costs) creates a benefit for the employee, who receives the use of a vehicle at no (or reduced) cost. The value of this benefit – often in the form of an estimate calculated under prescribed rules – is typically treated as taxable income to the employee. The following sections examine the various rules by which countries estimate this benefit and develop a potential neutral benchmark against which they are assessed.

In principle, treating company car benefits neutrally relative to cash salary should address most of the harmful environmental incentives that could be created by under-taxation of such benefits. In practice, several countries have used tax settings regarding the personal use of company cars to encourage, for example, more energy efficient vehicles within this population of users. Such "tilting" of the tax rules, however, does not guarantee a positive or even neutral environmental result if the overall estimated benefit is too far below the neutral fiscal level. This type of explicitly environmentally-motivated policy should always be compared with other instruments available, including those that apply to a broader segment of the car market such as all cars owned by companies (not only those available for personal use by employees) or all cars, and to policies more closely related to emissions like fuel taxes.

3.1 Taxation of company cars in OECD countries

In the countries covered, the size of the taxable benefit to the employee from personal use of a company car is measured in a variety of different ways. The four primary methods of doing so are by reference to the price of the vehicle, the distance travelled, the direct costs of personal use (e.g. fuel and

maintenance costs), a fixed sum, or some combination of these elements. Within each, a number of variations are possible. Table 2 sets out the primary method used in each country.

Table 2: Typology of tax treatments of personal use of company cars

Taxed									Not taxed
% of capital cost			Distance			Direct costs		Lump sum	
Cost price	List price	Fair market value	Private	Deemed	Home-work	Private	Business		
Australia*	Belgium	United States*+	Canada+	Italy	Germany+*	Australia*	Austria*	Estonia*	Hungary
Austria*	Denmark		Estonia*			France*	South Africa+	Finland+	Mexico
Canada+	Finland+[3]		Finland+			Germany*		Sweden+	
France*	Germany+*		Luxembourg			Japan			
Luxembourg	Iceland		Sweden+			Poland			
New Zealand	Netherlands		United States*+						
Portugal	Norway								
Slovakia	Sweden+								
Slovenia	United Kingdom								
South Africa+									
Spain									
Switzerland									

Source: OECD classification, based on questionnaire responses from each country. + after a country name indicates that the country uses more than one primary method to calculate the taxable benefit, and that both components are added together. * after a country name indicates that the country provides an alternative method of calculation.

A number of other factors can influence the measurement of the benefit. These include: the age of the vehicle; its CO_2 emission rating or cylinder capacity; the availability for personal use; the location of the employee's home relative to the workplace; and whether the employee pays the vehicle's operating costs. These secondary criteria may vary the calculation (for example, by imposing a threshold or maximum, or by prescribing which rate should apply under the primary method); or provide a partial exemption.

A few countries, including Canada, Finland, Germany, Sweden, the United States and South Africa, combine elements of more than one method to estimate the taxable benefit. Others, such as Austria, Estonia, France, Germany, and the United States, allow more than one method of estimating the taxable benefit, with the options applying in different circumstances or at the taxpayer's election.

Personal use of a company car is not taxed in Hungary and Mexico. In Mexico, this is partially due to concerns about the perceived complexity of estimating the part of the usage and cost that should be allocated to personal use rather than to business use. In Hungary, although personal use of a company car is not taxed, taxes apply at the company level, based on the cylinder capacity of the vehicle. However, this provides no incentives for employees to limit the personal use of the vehicle and does not equalise different forms of compensation.

3.1.1 Primary means of calculating taxable benefit

The most common method of estimating the taxable income from the personal use of a company car is to use a proportion of the vehicle price. This approach aims to measure the capital costs associated with owning or leasing a car, including the purchase or leasing costs and financing costs. Typically, the value to employees of receiving the use of a vehicle without the need to purchase or lease it themselves is

[3] Finland uses replacement price to calculate taxable benefit, which is the recommended retail price of the make and model of car at the beginning of the month during which the car was put into service; if this is not available, the price quoted by the wholesaler is used, less EUR 3 400.

represented by including in taxable income a proportion of the value of the car. However, as the value of the same car may differ across OECD countries, the taxable benefit to the individual may vary considerably based on the country in which they are taxed, even if the same method of calculation is used.

The value of the vehicle may be determined by the actual cost of the vehicle when it was purchased by the employer (either new or used); the list price of the vehicle (when new); or the fair-market value. The cost price of the vehicle is likely to be lower than the list price due to standard sales practices as well as the volume of purchases and bargaining power of the company.

The cost-price methodology is the most common, being used by Australia, Austria, Canada+, France, Luxembourg, New Zealand, Portugal, Slovakia, Slovenia, Spain, Switzerland, the United States and South Africa+. [4] Under this approach, the value of the vehicle at acquisition is multiplied by rates that range from 0.75% per month (9% per year) in France to 2.8% per month (33.6% per year) in South Africa. The list-price methodology is used as the primary means of calculation in Belgium, Denmark, Finland+, Germany+, Iceland, the Netherlands, Norway, Sweden+, and the United Kingdom with rates ranging from 0.33% per month (4% per year) for low-emission vehicles in Belgium to 2.5% per month (30% per year) in Norway. The valuation standard in the United States is fair (i.e. arms-length) market value, including sales tax, title fees, and other purchase costs. To estimate fair market value, methods encompassing both cost-price and list-price methods are used (see Annex A for further details). Twenty-five per cent of this value, plus USD 500, represents an implied lease value which is prorated by the proportion of personal to total use. The rates applied, including different exemptions or variations, are detailed in Table 3 and Figure 1, except for Belgium and the United Kingdom, where the rate applied varies according to the CO_2 rating of the vehicle.

Table 3: Calculation of taxable benefit based on proportion of capital cost

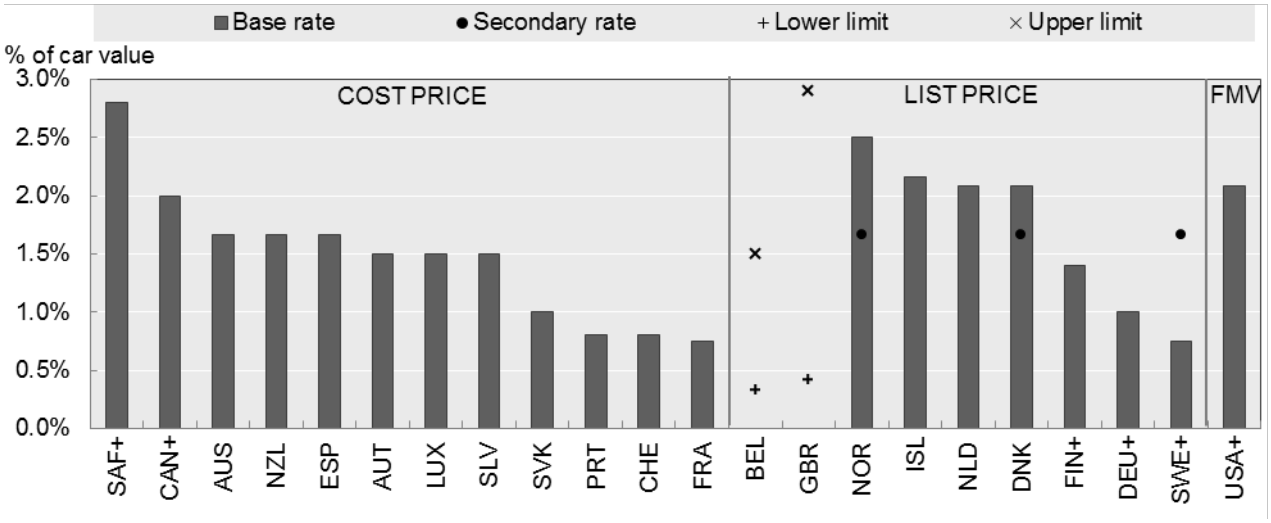
System	Country	% per month	% per year	Conditions or variations
Cost price	Australia	1.67	20.00	
	Austria	1.50	18.00	Taxable benefit limited at EUR 40 000
	Canada	2.00	24.00	
	France	0.75	9.00	
	Luxembourg	1.50	18.00	
	New Zealand	1.67	20.00	
	Portugal	0.80	9.60	
	Slovakia	1.00	12.00	
	Slovenia	1.50	18.00	
	Spain	1.67	20.00	
	Switzerland	0.80	9.60	
	South Africa	2.80	33.6	
List price	Belgium	0.33 to1.50	4.00 to18.00	Varies depending on CO_2 emissions and fuel type
	Denmark	2.08	25.00	Applies EUR 21 513 – 40 336 (DKK160 000 - 300 000); 1.67% per month on excess
	Finland	1.40	16.80	Applies to vehicles bought after 2009
	Germany	1.00	12.00	
	Iceland	2.17	26.00	Applies for vehicles of less than three years of age; 21% applies from years 3-6 and 18% from year 6 on
	Netherlands	2.08	25.00	Lower rate applies for fuel efficient cars
	Norway	2.50	30.00	Applies < EUR 35 130 (NOK 266 300). 1.67% per month (20% per year) on excess

[4] Countries marked + use another method in combination with this one.

System	Country	% per month	% per year	Conditions or variations
	Sweden	0.75[5]	9.00	Applies < EUR 36 331 (SEK 321 000); 1.67% per month (20% per year) on excess
	United Kingdom	0.42 to 2.92	5.00 to 35.00	Varies depending on CO_2 emissions
Fair market value	United States	2.08	25.00	Plus USD 500. See Annex A for details calculation. The total value is pro-rated by the proportion of personal to total use.

Source: OECD, based on questionnaire responses from each country.

Figure 1: Calculation of taxable benefit based on proportion of cost or list price per month[6]



Source: OECD, based on questionnaire responses from each country.

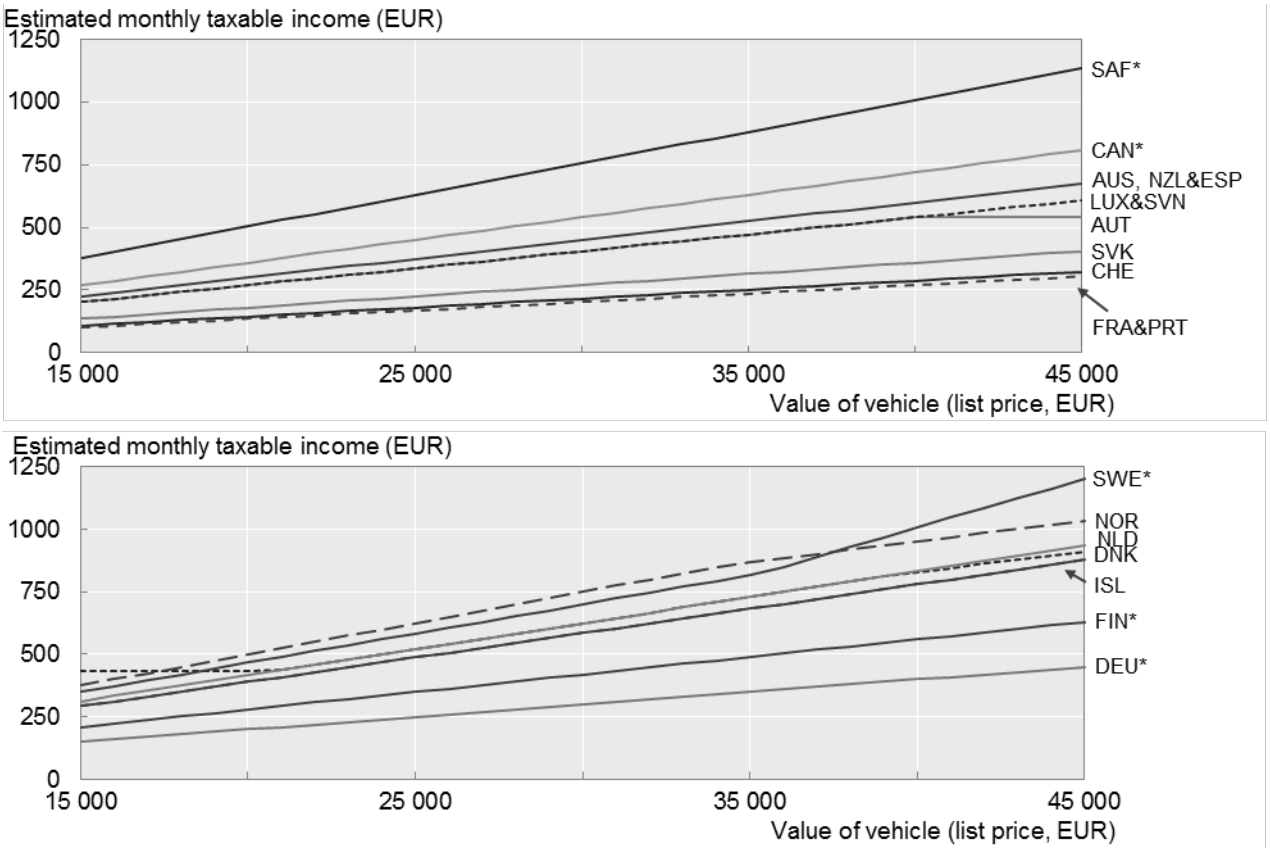
Under this approach, a given percentage of the value of the car is required to be included in income for each month or year that the car is available to the employee. This may be seen as similar to a depreciation rate, in that it allocates the capital cost of the car over time, although the depreciation profile of vehicles is typically shorter and less linear than the rates applied in country tax systems would imply. In cases where this is used as the only way to measure taxable income, the rate applied to the cost of the vehicle may include a component to approximate operating costs. In these cases it will often be calculated based on an average set of operating costs or kilometres driven.

Figure 2 shows the same information for new vehicles of different values, but includes the impact of the different thresholds in each system as well as other elements of the fixed benefit. The first panel shows the information for countries that use cost price to calculate the taxable benefit. It assumes that the cost price of a vehicle to the employers is 10% lower than its list price, to reflect the bargaining power of companies in purchasing vehicles. The second panel shows those countries that use list price to calculate the taxable benefit.

5 To this is added another component of 0.75 multiplied by the government interest rate multiplied by the vehicle price.

6 In this figure, the rate for the United States does not include the impact of pro-rating for the proportion of personal to total use. This would reduce the rate shown here by the proportion of business use.

Figure 2: Estimated monthly taxable income based on the cost price of the vehicle (upper panel) and list price of the vehicle (lower panel)[7]



Source: OECD calculations, based on questionnaire responses from each country.

The second most common method of calculating the amount of income taxable to the employee as a result of personal car usage is by reference to the distance travelled. Generally, the policy rationale is to estimate the benefit received to the employee by not having to pay the operating costs of the vehicle. The distance driven is a proxy for these costs; including the fuel and maintenance costs. In some cases, the per-kilometre charge may be set a rate which incorporates a standard capital cost.

Countries that apply this method include Austria, Canada, Estonia, Finland*, Germany*, Italy, Sweden, the United States and South Africa*. Within this general approach, four variations are used, with the benefit being calculated by reference to: distance travelled for personal use, distance travelled for business use, the distance between the home and workplace, and a deemed number of personal kilometres travelled.

Where the calculation is based on the distance travelled for personal use (as in Canada, Estonia, Finland, Sweden and the United States), the employee is taxed based on the number of kilometres driven for personal purposes. This is usually required to be substantiated by a logbook or other records. For Canada, Finland and Sweden, this comprises one of two components of taxable income. In the United States, if (actual or deemed) fair market value is used to value capital costs, employer-purchased fuel may

[7] For comparability, the first panel shows list price on the vertical axis by assuming that the cost price of a vehicle to the employers is 10% lower than its list price.

be valued at cost or at USD 0.055 cents (EUR 0.04) per mile. The United States also provides a cents-per-mile method that can be used in limited circumstances[8] and which covers both capital and operating costs; under which the benefit to the employee is valued at USD 0.555 cents (EUR 0.42) per mile.

If the distance travelled for business is used in the measurement of taxable benefit, business costs are deductible from taxable personal income. In Austria, if a car is used more than 50% for personal purposes, business cost is deductible either at the actual level of business cost incurred or at a rate of EUR 0.42 per kilometre. In South Africa, 2.8% of vehicle cost is taxable, less an allowance for the distance travelled for business purposes. The distance between the employee's home and place of work is used to calculate the taxable benefit in Germany. One component of the taxable benefit in Germany is calculated by multiplying 0.03% of the list price of the vehicle to the number of kilometres between the employee's home and work-place. Italy uses the fourth method, estimating the number of kilometres of a company car has been used personally and using a set per kilometre rate to estimate taxable income. The actual distance travelled does not change the taxable income; but for both countries, differential rates are used to calculate taxable income based on the vehicle used. The rate is set by the Automobile Club d'Italia.

The value per kilometre under each approach is set out in Table 4.

Table 4: Calculation of taxable benefit based on distance travelled

System	Country	EUR per kilometre
Personal kilometres	Canada+	0.18
	Estonia	0.20 for cylinder capacity <2 000 cm^3. 0.30 otherwise
	Finland+	0.18 for cars purchased after 2009 with fuel provided; 0.06 without
	Sweden	1.2 times the market value of the fuel provided
	United States+	Either employer cost or USD 0.055 per mile if used with lease value; USD 0.555 per mile, if used to cover both capital and operating costs (for use only with vehicles valued under stated amounts)
Business kilometres	Austria	-0.42
	South Africa+	Varies from -0.10 to -0.19 based on vehicle value
Deemed kilometres	Italy	Varies from 0.80 to 3.90 depending on make of car
Home-work distance	Germany+	0.03% of the list price for each kilometre between home and work

Source: OECD classification, based on questionnaire responses from each country.

In several tax systems, the distance driven may be used as a de minimus test in order to reduce administrative or compliance costs. Examples include the Netherlands where no benefit occurs if personal use is less than 500 kilometres per year, or Slovenia, where personal travel of less than 500 kilometres reduces the tax payable by 50%.

Tax systems may also vary the amount of tax payable based on the proportion of business to personal use (measured by respective kilometres travelled). Often, these variations intend to assess whether the primary purpose of the car is business or personal. Austria and Canada vary the tax treatment based on whether business use is more than 50%: in Austria, if business use is less than 50%, the car is considered a personal car and business costs are deductible; in Canada, the standby charge is reduced if business use is over 50% and personal use kilometres are less than 20 000 per year. Another method used to assess a vehicle's primary purpose is to vary the tax treatment based on the distance travelled for business

[8] In 2012, this method could not be used for passenger automobiles valued at more than USD 15 900, or for trucks or vans valued at more than USD 16 700 when first made available to employees. The cost is deemed to include taxes and insurance costs, but the amount cannot be reduced if those services are not provided by the employer.

purposes: Norway reduces the tax base to 75% if business kilometres exceed 40 000 kilometres per year; and Finland reduces the tax base to 80% if business kilometres exceed 30 000 kilometres per year.

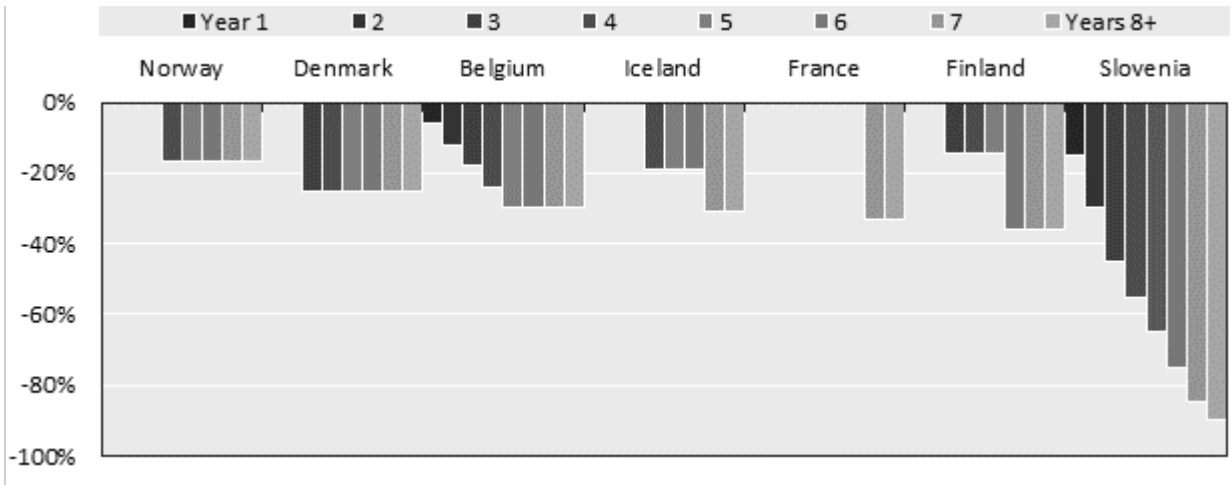
An alternative means of estimating taxable benefit is by reference to the direct operating costs of personal or business use. Under this approach, the direct usage costs are substantiated and may be apportioned based on the distance driven for personal vis-à-vis work purposes. Where the direct costs of personal use are used as a basis for taxation, these are generally calculated as the cost to the employer rather than as the level of the benefit received by the employee. Some may include a component to approximate the capital cost to the employer. Japan and Poland use this method of calculation. It is also used as an optional secondary method of calculating the taxable benefit in France and Germany. A similar approach, which is to deduct the costs of business use from the total base calculated for the employee, is used in South Africa, and in Australia if the operating cost approach is chosen; as well as in Austria if the personal use of the vehicle exceeds 50% of total kilometres driven.

Finally, countries may use a fixed monetary amount as the level of taxable benefit. This is one of two possible methods of calculating the taxable benefit in Estonia, where employees can apply a per-kilometre rate on the basis of driving records, or can be taxed on a fixed amount of benefit. In Sweden, a fixed component based on the deemed basic price of a vehicle is one of three components of the taxable benefit.

3.1.2 Variations and additional criteria in the calculation of taxable benefit

The primary tax treatment described above is often varied by reference to secondary criteria. The most common of these is the age of the company car. This approach is used in Belgium, Denmark, Finland, France, Iceland, the Netherlands, Norway, and Slovenia, reducing the amount of taxable benefit with the age of the car to reflect the higher rate of depreciation in the early years of its useful life. Figure 3 shows the impact of increasing car age on the tax payable, all other factors held constant.

Figure 3: Impact of age of vehicle on taxable benefit relative to taxable benefit in first year of vehicle life



Source: OECD calculation, based on questionnaire responses from each country.

Another criteria that may vary the primary tax treatment applicable is the environmental impact of the car, measured by CO_2 rating, fuel type or cylinder capacity. The CO_2 emission rating of the vehicle is used to calculate the taxable benefit in Belgium, Norway and the United Kingdom. Belgium and the United Kingdom base the proportion of the list price treated as taxable based on a Table of ranges of CO_2 emissions in grams per kilometre, with rates ranging from 5 to 35% in the United Kingdom and from 4%

to 18% in Belgium. Norway also varies the list price component based on the vehicle's carbon rating, with rates ranging from 0% for vehicles with emissions of less than 50 grams per kilometre to 25%. The 0% rate for very clean cars is temporary and applies only to cars purchased prior to 2016. Estonia and Italy vary the tax settings based on the particular characteristics of the vehicle: cylinder capacity is used in Estonia, and in Italy, the per-kilometre cost estimated by the Automobile Club d'Italia. Sweden provides reductions or exemptions in tax rates for low-emission vehicles such as electric or electric/hybrid cars.

Finally, tax systems may vary the tax treatment depending on the amount of expense that is paid by the employee. In Canada and Italy, the amount paid by the employee toward the operating costs is deducted from the taxable benefit calculated under the remainder of the system. In Finland, Slovenia and South Africa, the amount paid by the employee affects the calculation of the main benefit by reducing a rate applied in the calculation. Finland, for example, applies an unlimited rate of EUR 0.18 per kilometre to new cars where the employer pays for the operating costs and EUR 0.06 per kilometre where the employee meets these costs. In the United States, if the cents-per-mile rule is used and the employer does not provide fuel, the taxable benefit may be reduced by up to USD 0.055 per mile.

Several OECD countries (indicated above by "+" after their names) operate a system whereby the taxable benefit has two different components, including Canada, Finland, Germany, Sweden, the United States and South Africa. With the exception of Sweden, these systems include a fixed component, intended to represent the capital and fixed costs; and a variable component, which reflect the costs that vary depending on the amount of personal use. Table 5 summarises the two components of each of these systems.

Table 5: Calculation of taxable benefit using multiple components

System	Country	First component	Second component
Capital value + distance	Canada+	2% of cost price (2/3rds of lease price) per month	EUR 0.18 (CAD 0.24) per kilometre
	Finland+	1.4% of replacement value per month	EUR 0.18 per kilometre (EUR 0.06 if fuel is employee paid)
	Germany+	1% list price per month	0.03% of list price per kilometre between residence and workplace
	United States	Lease value (fair market value, or deemed fair market value based on value of vehicle)	Employer cost, or up to EUR 0.04 (USD 0.055) per mile
Fixed + capital value	Sweden+	0.317 * base price in EUR + EUR 4 844 (SEK 42 800) per year	Interest rate * 0.75 * list price of car, and 9% of * list price (20% above SEK 321 000) + 1.2 times the market value of fuel used
Capital value – distance	South Africa+	2.8% of cost price per month	Deductible at per kilometre rate set by reference to car value

Source: OECD classification, based on questionnaire responses from each country.

Several countries (indicated above by "*" after their names) offer taxpayers a choice between using a proxy to estimate taxable income, and using the direct costs of personal use. The different options in these countries is summarised in Table 6.

Table 6: Calculation of taxable benefit using optional methods

Country	First (default) method	Secondary methods
Australia	20% of cost price per year	Actual operating costs, plus deemed operating costs of 18.75% depreciation and statutory interest rate (declining balance)
Estonia	Flat rate at EUR 256 per month	Per kilometre rate based on cylinder capacity
France	9% of cost price	Direct costs of personal use

Germany	9% of list price + 0.03% of home to work distance	Actual operating expenses
Luxembourg	1.5% of cost price per month	Actual operating expenses
United States	Fair market value: Proportion of total miles that is personal use x third-party lease value + USD 0.055 x personal miles driven	1. Annual lease value rule (deemed fair-market value): Proportion of total miles that is personal use x automobile lease value rule determined from vehicle's value (which may be estimated using a deemed fair-market value approach) + USD 0.055 x personal miles driven; 2. Cents-per-mile rule: USD 0.555 per mile for all miles driven (requires regular business use or driven for >10 000 miles per year, and vehicle must be valued less than stated maximum amount) 3. Commuting rule: if commuting is required and no personal use is allowed; USD 1.50 per one-way commuting trip

Source: OECD, based on questionnaire responses from each country.

An alternative to taxation of the benefit resulting from private use of company car is a distance allowance when an employee uses a personal car for business purposes. This approach is used as an alternative to the provision of company cars in several countries, including Canada and the United Kingdom. A similar approach applies in Austria, where if personal use is greater than 50%, the business costs can be deducted from the employee's income either through calculation of actual costs, or a per kilometre deduction, up to an annual ceiling of EUR 30 000. An allowance made for this purpose is often not considered taxable if it meets certain requirements. From an environmental perspective, this may be a good option as it does not impact personal driving, and to the extent that the allowance accurately reflects (and does not exceed) the costs of driving for business purposes, does not adversely affect business travel.

3.2 Fiscal cost of company car tax settings

Where the taxable benefit calculated by the tax system is less than the value of the benefit an employee receives from the use of a company car, the difference in tax revenue that results can be regarded as a tax expenditure. This section is structured as follows. Section 3.2.1 proposes a neutral benchmark treatment for assessing the personal benefit associated with use of a company car, which is parameterised using information about various cost components. Section 3.2.2 explains the detailed data on company cars and the methodology used to estimate the amount of benchmark benefit and aggregate taxable benefit associated with company car use for each country. Section 3.2.3 discusses the results, comparing the calculated taxable benefits under the benchmark and country tax systems and estimating the resulting tax expenditure on the difference.

3.2.1 Benchmark choice

The choice of benchmark in estimating the level of tax expenditure under a particular tax setting will influence the resulting size of that expenditure. In setting a benchmark to be used to calculate estimated tax expenditures from the tax treatment of company cars, many options can be considered both in terms of the nature of the benchmark (what the benchmark should capture, and in what manner) and in the parameters used to populate that benchmark. While recognising that alternative benchmarks are possible, it is proposed that an appropriate benchmark for taxation of a fringe benefit is a tax treatment that would make the employee indifferent between receiving the benefit-in-kind and equivalent cash wages. In other words, the individual should be required to include in their taxable income an amount equal to the market value of the benefit – the cost the employee would have to incur to purchase equivalent goods and services.

The benchmark treatment intends to represent a neutral tax setting – which captures the full income received by an individual from the benefit-in-kind. It is recognised that in practice, however, there can be more than one reasonable way of estimating the value of a benefit – particularly for a complicated bundle of goods and services like a car and related goods and services provided by an employer.

The actual benefit to the employee can be considered in two ways. The employee-cost approach assesses the benefit by reference to the cost that would be incurred if the employee were to purchase the same benefits. The company-cost approach measures the benefit as the cost to the company of providing the benefit. This may be lower than the employee-cost approach, as companies may have additional bargaining power when purchasing the vehicle or may get bulk agreements on the servicing and insurance charges. For the purposes of this study, the employee-cost approach is used, as being consistent with the goal of a tax treatment that would make the employee indifferent between salary paid in cash and in kind.

The income generated for the employee through the personal use of a company car arises from:[9]

- Not having to pay the fixed costs of car ownership – including purchase or lease costs as well as interest, insurance and licencing costs; and

- Not having to pay the variable costs of car ownership – including the cost of fuel, repairs and maintenance (where the employer covers these costs).

The fixed costs of car ownership do not vary with the amount of car use (with the possible exception of insurance costs), but may vary with other criteria such as car size, car price, type of car, and interest rates. The variable components are more directly related to the distance driven, and the per-kilometre cost will also vary based on the car type, the fuel used, and the intensity of use.

Ensuring that the benchmark is capable of being implemented in a real world tax system involves a trade-off between accuracy and the ease of application. A completely accurate measurement of the benefit to a particular individual would require measurement, for each vehicle, of the actual costs per kilometre driven for personal use for fuel, repairs and maintenance; the financing costs that the employee would pay had they purchased the car themselves; the insurance and registration charges; and the accurate depreciation rate. The compliance and administrative costs required to operate such an individualised calculation, however, would significantly outweigh the advantages of the more accurate calculation. Although simplifications are therefore required for practical purposes, these should be assessed for the incentives they create for companies and individuals to change their vehicle or driving preferences and the resulting fiscal and environmental impacts.

Drawing on these considerations, the proposed benchmark has two components that reflect the different costs of car ownership:

- A capital component to reflect the costs of car ownership that do not (directly) vary with distance travelled. This component is based on the depreciating value of the vehicle (at list price, less an assumed 5% discount, rather than the lower price a company may be able to command by virtue of its purchasing power) and includes taxes on sale. Because the employee would have to pay the full capital costs associated with car ownership to provide themselves with the same benefit, the full value of the car is used as the taxable base, under the opportunity cost principle.[10] It includes the depreciation costs as well as insurance, finance, annual taxes, registration and interest costs, estimated by reference to a fixed percentage of the depreciated value of the vehicle.

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9 If the employer is able to recover VAT on the purchase of the vehicle or of associated services (e.g. fuel), then employees will receive the further benefit of obtaining these services without paying the VAT that would otherwise apply.

10 The United States expresses reservations with this assumption, noting that depending on bargaining power between the employee and employer either party can subsidise each other. An alternative assumption, where only 67% (the usage proportion) of the benefit is taxed is included in the sensitivity analysis.

- A distance component to reflect ownership costs that vary with distance travelled (assuming these are paid or reimbursed by the employer), set as a value per kilometre travelled for personal purposes, including commuting. This component is divided into two subparts:

  - A cost per kilometre that represents the average cost of repairs and maintenance, including tyres. For simplicity, the same value per kilometre is used for all vehicle types. This is because these costs per kilometre do not vary greatly between vehicles and because the incentive effects of under- or over-taxing repairs and maintenance are less than the under-taxation of other, more transparent, costs such as fuel.

  - A cost per kilometre representing fuel costs, that varies with the fuel efficiency and fuel type of each vehicle. This can be set by reference to either the fuel efficiency or the CO_2 rating of the vehicle since there is an approximately fixed relationship between the two.[11] Despite an increase in complexity from differentiating the rate for each vehicle, the benchmark reflects the highly variable costs of fuel use and ensures that the employee faces the full marginal cost of driving further.[12]

The benchmark used in this paper for a given vehicle for each year is represented by the following formula:

$$b_n = (d + i) * v_n + (m + f) * k_n$$

where

b_n = taxable benefit for a given vehicle in year *n*

d = the depreciation rate

i = a fixed rate to approximate insurance, annual taxes, registration and interest costs

v_n = the depreciated value of the vehicle in year *n*, given by: $v_n = 0.95*v_0*(1-d)^{(n-1)}$ m = repair, maintenance and tyre costs, at a fixed value per kilometre

f = fuel costs per kilometre, determined by the vehicle's fuel and efficiency rating

k_n = kilometres travelled for personal purposes including commuting, in year *n*

The value of vehicles and fuel costs were given by data obtained from R.L. Polk on car registrations from 2007-2011.[13] Assumptions were made about the level of the depreciation rate, *d*, the fixed rate to approximate insurance, annual taxes, registration and interest costs, *i*, repair and maintenance costs, *m*, and the distance driven, *k*, by reference to the range of estimates of these costs found in the literature (see Annex B), and for depreciation and repair and maintenance costs, three different estimates were used: a

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11 These ratings are readily available from car manufacturers and often, government regulators. CO_2 values of vehicles are currently used in the tax benefit calculations in three countries: Belgium, the Netherlands and the United Kingdom, although in relation to the capital component of the benefit and not as a proxy for fuel costs.

12 Even under the benchmark, the marginal cost of fuel faced by the employee is only equal to an approximation of the actual cost multiplied by the personal tax rate.

13 R.L. Polk Ltd. is a private company that collects information on the international car market, including new car registrations.

lower-bound, midpoint and upper-bound estimate. In practice, a country designing a tax system using this benchmark would be able to use national data sources to provide a more tailored benchmark. The parameters used in the calculation of the benchmark are summarised in Table 7.

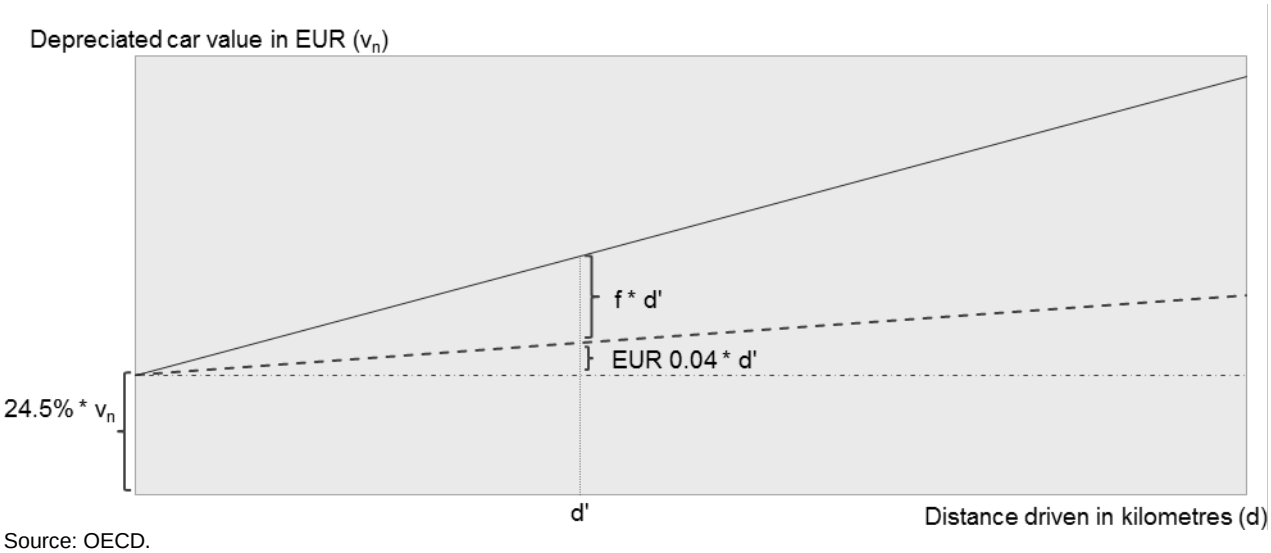
Table 7: Parameters used in benchmark to calculate taxable benefit in a given year

Component	Type of costs	Base	Rate
Fixed costs	Depreciation (*d*)	Depreciated vehicle value (based on list price at purchase, less 5%)	Lower estimate: 18% Midpoint estimate: 24.5% Upper estimate: 31%
	Insurance, registration, annual taxes, interest (*i*)	Depreciated vehicle value (based on list price at purchase, less 5%)	Midpoint estimate: 9%
Variable costs[14]	Repairs, maintenance, tyres(*m*)	Kilometres travelled for personal use	Lower estimate: EUR 0.02 per kilometre Midpoint estimate: EUR 0.04 per kilometre Upper estimate: EUR 0.06 per kilometre
	Fuel costs (*f*)	Kilometres travelled for personal use	Cost of fuel per kilometre travelled, using each vehicle's' fuel type and fuel efficiency rating, and country-specific fuel costs.[15]

Source: OECD.

The midpoint estimate using these parameters is illustrated in Figure 4 for a given year. The solid line indicates the total amount of benchmark benefit: the sum of the capital component [(24.5% + 0.09%) * v_n], and the distance component [(0.04 + f) * d'].

Figure 4: Illustration of benchmark used for a given vehicle



Source: OECD.

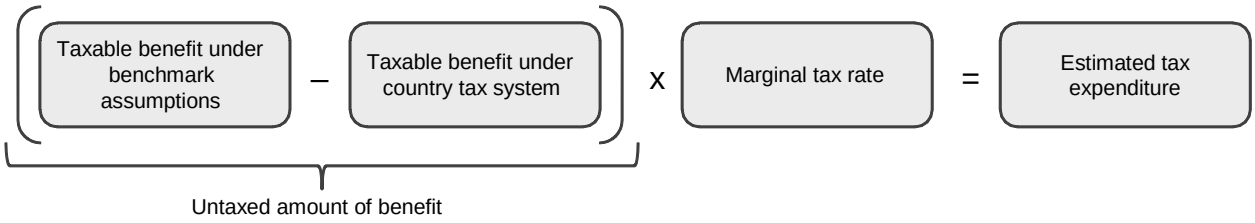
14 VAT on these costs has not been taken into account in this analysis. Depending on the applicable VAT rate and whether the business is able to claim back VAT paid on these costs, the employee would receive a further benefit which is not quantified here and is left for future work.

15 Country-specific fuel costs were taken from International Energy Agency (2013) for 2011.

3.2.2 Calculation of tax expenditures under country tax settings

For each car in the company car stock, the value of the estimated tax expenditure was calculated by applying the relevant personal income tax rate to the difference between the taxable benefit calculated under the country's tax system and the benchmark benefit. This approach is illustrated in Figure 5. The total value of the tax expenditure for each country is the sum of the tax expenditures estimated for each vehicle.

Figure 5: Approach to calculation of tax expenditure



Source: OECD.

The calculation of the value of the tax expenditure under country tax systems is done on a static basis – that is, it does not take behavioural responses into account. If individual tax systems were to adopt the benchmark tax treatment, behavioural changes by employers and employees would result in the revenue received being lower than the estimated tax expenditure. These behavioural changes could include differences in the characteristics and numbers of company cars used, changes to driving behaviour and substitution towards other tax-favoured types of remuneration (to the extent possible within each tax system).

Calculations were made for 25 of the 27 countries that completed the questionnaire: Australia, Austria, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Luxembourg, Mexico, the Netherlands, New Zealand, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States. Calculations were also made for Iceland based on data provided to the Secretariat. Calculations were not made for Japan and Poland because of uncertainty about how to best estimate the "actual cost" methods used by these countries to estimate the taxable benefit.

The taxable benefit under country tax systems was calculated using the tax rules for that country as described in section 2.1 and Annex A were used. Additional assumptions include:

- In some countries an employee may be able to use the measurement of actual costs as an alternative to the primary method used to value the taxable benefit. In these cases, only the primary method was estimated.

- Australia and Estonia allow two possible methods to estimate the benefit from company car use. For both countries, both methods were calculated for each vehicle and the lowest resulting tax liability was included in the result.

- Where cost price of a vehicle to the employer is used, the applicable value was assumed to be 90% of the list price information provided by Polk on the assumption that corporate buyers can obtain a discount of this order of magnitude.

Local currencies were converted into Euros based on the average exchange rate in 2012. To calculate the tax payable on the amount of untaxed benefit, the untaxed benefit was multiplied by the marginal tax rate (including any social security contributions payable), of a single income earner at 167% of the average wage.[16] This wage earner was used under the assumption that company cars are more likely to be used by those with higher incomes. The marginal tax rates used are set out in Table 8, as are more detailed country-specific assumptions.

The taxable benefit calculated under the benchmark assumptions described above and the taxable benefit as measured by each country's tax system were calculated at the most disaggregated level possible across the population of company cars in each country.

The stock of company cars in each country used in the scenario modelled was calculated using data obtained from R.L. Polk Ltd on new vehicle registrations. This data was disaggregated by year, owner type, make, model, fuel type, body shape, and other car characteristics, with a total of 1.7 million unit level records across all OECD countries and an average of 105 cars (with the same make, model, fuel type, body shape, CO_2 rating and price) per unit level record. For each unit level, information was provided on the number of sales, list price (*v)*, and CO_2 rating (which was used to calculate fuel costs, together with fuel price information for each country). Based on an assumption that company cars have a three-year useful life, the most recent three years of registration (2009-2011) were aggregated to form the stock of cars in 2012.

Table 8: Country specific tax system assumptions used to calculate taxable benefit

Country	Capital component			Distance component	Tax rate used (%)	Other assumptions
	Base	**Threshold (EUR)**	**Annual rate**	**Rate per km (EUR)**		
AUS	Cost		26.15%	Per benchmark	39	Declining balance cost base used. Both the operating cost method and the fixed percentage method were calculated for each car and the method generating the lowest tax results was chosen. The amount of the taxable benefit calculated under the tax system's rules was "grossed- up" as Australian tax rules measure the post-tax value of the benefit.
AUT			22.5%	Per benchmark	38	Calculated by using actual cost, deducting proportion of fixed costs representing business use. 12.5% annual straight-line depreciation assumed; other costs assumed to be as per the benchmark. The proportion of company cars in new car registrations derived from the Polk data and used in the analysis seems high compared to national statistics.
BEL	List		Varies		61	6/7 of list value used, with reduction to this made based on age of vehicle. Rate varies based on fuel type and CO_2 emissions. Minimum tax payable of EUR 1 200 included.
CAN	Cost		24%	0.18	35	Less than 50% business use.
DNK	List	0 21 513 40 336	0% 25% 20%		56	
EST	Cost			0.3	23	Both the per kilometre rate and the fixed price method were used and for each car the method generating the lowest tax was chosen
FIN	List		17%	0.18	48	
FRA	Cost		9%		42	Tax system also allows actual cost to be used; this was not calculated
DEU	List		12%	0.03%	44	Tax system also allows actual cost to be used; this was not calculated. Home-work assumed to be 20 km.
HUN					38	No tax calculated. However, companies must pay tax in respect of each company owned vehicle and vehicles used for company purposes at a rate of EUR 24 (HUF 7 000) per month for vehicles with a cylinder capacity of less than 1 600 cm^3 and EUR 51 (HUF 15 000)

[16] Data on the applicable personal income tax rates was taken from OECD (2012).

Country	Capital component			Distance component	Tax rate used (%)	Other assumptions
	Base	**Threshold (EUR)**	**Annual rate**	**Rate per km (EUR)**		
						per month above this.
ISL	List		26%		44	All cars were assumed to be less than 3 years old, except in the 4 year sensitivity test where a rate of 21% was used for cars of 4 years of age
ITA	Cost		Varies		50	Rates set by ACI tables. Matching of ACI car types to Polk records was made with assistance from Italian Delegates, and was based on their make, engine size and price.
LUX	Cost		18%		49	
MEX					23	No tax calculated
NLD	List				49	
NZL	Cost		20%		49	
NOR	List	0 35 130	30% 20%		48	
PRT	Cost		9%		50	
SVK	Cost		12%		29	
SVN	Cost		23%		54	Vehicle age adjustments included in calculation.
ESP	Cost		20%		37	
SWE	List	0 36 331	12% 23%	1.2 times benchmark fuel costs	57	Capital rate includes components 2 and 3 from Annex A. Interest rate assumed to be 4%. Lump sum of EUR 1 536 included in capital component. Taxable fuel was assumed to be 1.2 times the fuel cost calculated under the benchmark.
CHE			10%		32	
GBR	List		Varies		42	Capital component rate varies based on CO_2 emissions.
USA			0%	Per benchmark for fuel costs	37	General rule used. e Lease cost estimated by reference to Fringe Benefit Taxation, Publication 15-B.
SAF			34%		35	Cost calculated reduced by proportion of business use.

Source: OECD. Tax rate data was obtained from OECD, Taxing Wages 2011.

Ownership data was also provided with this database that enabled the company car fleet to be estimated. For 12 countries, information was available to disaggregate company cars from cars held for other non-personal purposes (such as rental fleets, car dealerships, and government). For a further 7 countries, information was available to identify whether the car was a personal or non-personal owner (non-personal car owners include company cars, dealerships, rental cars, and government cars). In this case, the stock of company cars was estimated using the simple average of the percentage of company cars to non-personal cars from the 12 countries for which this information was provided.[17] For the remaining 7 countries included in the analysis, the data did not include information on car ownership and the stock of company cars using the simple average of company car registrations to all car registrations based on the 12 countries for which full disaggregation was provided. Where approximations were made to estimate the number of company cars in relation to non-personal cars (or to all cars), the cost and emission profile of company cars was assumed to be the same as that of all non-personal cars (or of all cars) in that country.[18]

[17] This approach was varied for the United States. Information was available from Polk to differentiate non-private from private registrations, but was not available to differentiate between the different types of non-private registrations. Rather than use the OECD simple average as was used for the other countries where this information was not available, the number of company cars was estimated by applying the proportion of company cars to non-private cars as in Canada, as a closer proxy the situation in the United States. This has the impact of reducing the proportion of company cars in the United States from the 14% that would apply if the general approach were applied, to the 5% used in the analysis.

[18] This assumption seems reasonable given that in the countries for which a detailed disaggregation is available, a comparison of the cost and emissions profile of new company cars to all non-personal new cars

Reflecting the fact that not all company cars are available for personal use, only 80% of the stock calculated under each of these approaches was included in the analysis. Summary statistics on the stock of company cars used in the calculations are provided in Table 9.[19]

All company cars were assumed to drive 20 000 kilometres per year for personal purposes, and 10 000 kilometres per year for business purposes. Both the distance and the proportion of personal use are consistent with the literature and country estimates of the number of kilometres driven by company cars in a year, which are summarised in Annex B.

Table 9: Summary of data obtained from R.L. Polk Data on new car registrations for countries modelled

	Level of disaggregation available	Number of registrations 2009-11			Average price (EUR)		Average CO_2 rating	
		All cars	*Company cars*	*%*	*All cars*	*Company cars*	*All cars*	*Company cars*
AUS	Company	2,897,128	953,720	33%	29,378	31,852	196	201
AUT	Company	1,093,070	504,138	46%	25,794	29,074	151	157
BEL	Company	1,768,052	722,032	41%	24,377	28,651	146	156
CAN	Company	4,681,941	369,625	8%	27,221	28,568	213	223
DNK	Non-private	473,430	159,816	34%	35,607	42,421	142	150
EST	All	42,296	13,450	32%	18,565	18,565	166	166
FIN	Company	363,000	98,559	27%	30,920	36,704	157	168
FRA	All	7,861,251	2,499,802	32%	22,093	22,093	137	137
DEU	Company	10,492,511	2,129,485	20%	26,417	33,203	157	166
HUN	Non-private	179,667	74,669	42%	21,183	22,886	156	160
ISL	All	11,238	3,574	32%	24,998	24,998	168	168
ITA	Company	6,374,550	989,119	16%	20,942	26,228	139	162
LUX	Non-private	156,780	43,562	28%	28,924	32,372	152	156
MEX	All	2,481,173	788,989	32%	35,988	35,988	194	194
NLD	Company	1,585,209	582,923	37%	24,923	32,396	143	152
NZL	All	227,308	72,282	32%	27,017	27,017	187	187
NOR	Company	452,930	174,455	39%	44,762	46,609	156	165
PRT	Non-private	606,011	233,433	39%	23,838	24,639	152	155
SVK	Non-private	235,315	73,753	31%	21,483	27,028	152	159
SVN	Non-private	194,076	73,669	38%	21,352	22,203	150	152
ESP	Company	3,069,848	912,196	30%	23,344	26,136	145	149
SWE	Company	919,980	444,332	48%	28,953	31,187	159	164
CHE	All	960,035	305,282	32%	33,134	33,134	168	168
GBR	Company	6,636,561	2,492,004	38%	23,895	24,880	151	154
USA	Non-private	33,954,319	1,650,442	5%	27,823	27,726	236	227
SAF	All	1,209,926	384,745	32%	27,837	27,837	181	181
Total		88,927,605	16,750,054	19%	26,444	28,361	188	189

Source: OECD calculations, based on data provided by R.L. Polk.

and to all new cars indicates rough similarity, except that the extreme ends of the spectrum (cars with very low or very high price or emissions) tend to have a lower share in the company car segment than in the broader population.

19 The Polk data focus on new car registrations. The share of company cars in the total vehicle fleet would be smaller than the share in new registrations. If the tax treatment of company cars affects the choice of type of car, however, the impact of the choice on the overall car stock will continue even after the car ceases to be a company car. Further information on the dataset used can be found in Annex B.

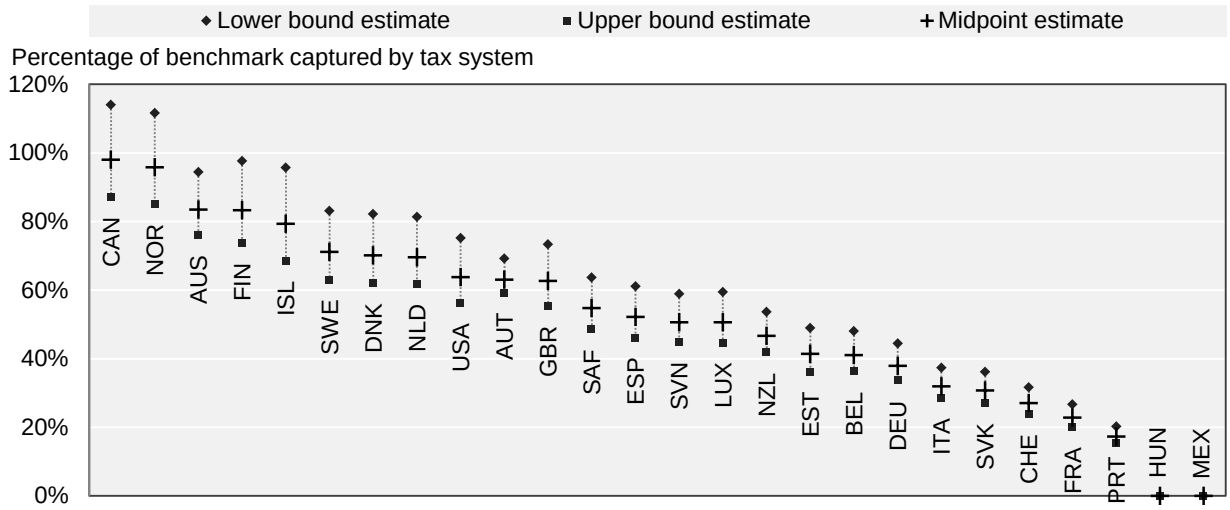
3.2.3 Results

Comparing the amount of tax that would be payable on the difference between the benefit calculated under the benchmark developed in this paper and that calculated under the country tax systems in 2012 results in the value of tax expenditures from company car tax settings across these countries ranging from EUR 19.0 billion at the lower-bound estimate to EUR 33.7 billion at the upper-bound estimate, with a midpoint estimate of EUR 26.8 billion in 2012. The value of estimated tax expenditure in each country ranges from EUR 2.2 million in Iceland to EUR 5.2 billion in Germany, although this is heavily dependent on the size of the car fleets in both of these countries.

Table 10 sets out the headline results for each country. It shows the range of estimates of taxable benefit under the low, midpoint and high estimates of the benchmark developed in this paper, divided into the capital and distance components. For country tax systems, it shows the estimated taxable benefit, divided, where relevant, into capital and distance components. Finally, it shows the amount of untaxed benefit and the amount of foregone tax revenue on that untaxed benefit for each of the lower-bound, midpoint and upper-bound estimates.

Based on the benchmark developed in this paper, between 44% and 58% of the total taxable benefit from the use of company cars is taxed depending on the scenario modelled, with the midpoint estimate showing the untaxed amount of the taxable benefit to be EUR 64.3 billion (50%) for 2012.[20] Of the countries included, Canada taxes the highest proportion of the benchmark (98% at the midpoint estimate) and, of the countries that tax the private use of company cars, Portugal captures the least (17% at the midpoint estimate). The taxable benefit calculated under the Canadian and Norwegian tax systems exceeds the lower estimate of the benchmark. Figure 6 shows the proportion of the lower, midpoint and upper-bound benchmarks captured by country tax systems.

Figure 6: Proportion of benchmark captured by country tax systems under 3-year useful life



Source: OECD calculations of benchmark benefits and taxable benefits based on exchange rates and estimated company car stock in 2012.

[20] As with other tax expenditure analyses, this estimate is static and does not take into account possible behavioural changes that could follow if tax systems were changed to replicate the benchmark.

Table 10: Taxable benefit and tax expenditures in 2012 under country tax systems and different benchmark estimates, 3 year useful life (EUR million)

	Benchmark						Tax system				Untaxed benefit			Estimated tax expenditure		
	Capital component			Distance component			Capital component	Distance component								
	Low	Midpoint	High	Low	Midpoint	High		Low	Midpoint	High	Low	Midpoint	High	Low	Midpoint	High
AUS	5 139	**5 929**	6 572	1 798	**2 103**	2 409	**5 764**	1 050	**940**	859	390	**1 328**	2 152	154	**525**	850
AUT	2 556	**2 986**	3 354	835	**996**	1 158	**1 513**	835	**996**	1 158	1 044	**1 473**	1 841	396	**558**	698
BEL	3 592	**4 188**	4 696	1 238	**1 469**	1 700	**2 319**				2 511	**3 339**	4 077	1 500	**1 995**	2 436
CAN	1 823	**2 120**	2 372	727	**845**	964	**1 825**	1 082	**1 082**	1 082	- 357	**59**	429	- 126	**21**	152
DNK	1 185	**1 385**	1 556	277	**328**	379	**1 201**				261	**512**	735	146	**287**	412
EST	45	**53**	60	23	**27**	31	**33**				34	**47**	58	8	**11**	13
FIN	634	**742**	835	178	**210**	241	**509**	284	**284**	284	20	**159**	284	10	**76**	136
FRA	9 465	**10 978**	12 240	3 936	**4 736**	5 536	**3 579**				9 822	**12 135**	14 197	4 163	**5 143**	6 017
DEU	12 330	**14 402**	16 177	3 704	**4 385**	5 066	**6 788**	339	**339**	339	8 906	**11 660**	14 116	3 946	**5 167**	6 255
HUN	295	**344**	385	51	**75**	99					346	**419**	484	134	**163**	188
ISL	16	**19**	21	3	**5**	6	**19**				1	**5**	9	0	**2**	4
ITA	4 191	**4 736**	5 128	896	**1 212**	1 529	**1 899**				3 188	**4 049**	4 757	1 589	**2 018**	2 371
LUX	244	**284**	319	63	**77**	91	**183**				125	**179**	227	61	**87**	110
MEX	4 928	**5 743**	6 433	289	**542**	794					5 217	**6 284**	7 227	1 196	**1 440**	1 656
NLD	3 263	**3 799**	4 252	1 004	**1 191**	1 377	**3 473**				795	**1 517**	2 157	392	**748**	1 064
NZL	338	**394**	441	186	**210**	233	**281**				243	**322**	392	120	**159**	193
NOR	1 417	**1 655**	1 858	358	**413**	469	**1 981**				- 206	**88**	346	- 98	**42**	165
PRT	992	**1 153**	1 288	388	**463**	538	**280**				1 101	**1 337**	1 546	512	**622**	719
SVK	350	**410**	462	127	**150**	174	**172**				305	**388**	464	88	**111**	133
SVN	284	**331**	370	146	**170**	194	**253**				177	**247**	311	96	**133**	168
ESP	4 124	**4 802**	5 374	1 492	**1 784**	2 076	**3 433**				2 183	**3 152**	4 016	873	**1 261**	1 606
SWE	2 447	**2 872**	3 243	909	**1 052**	1 194	**1 868**	921	**921**	921	568	**1 135**	1 647	321	**642**	932
CHE	1 747	**2 033**	2 275	481	**578**	676	**705**				1 523	**1 906**	2 245	491	**615**	724
GBR	10 793	**12 597**	14 138	4 347	**5 144**	5 942	**11 108**				4 032	**6 634**	8 972	1 693	**2 786**	3 768
USA[21]	0-8 015	0-**9 379**	0-10 554	0-2 483	0-**3 011**	0-3 540	0-**5 938**	0-1 955	0-**1 955**	0-1 955	0-2 605	0-**4 497**	0-6 200	0-974	0-**1 681**	0-2 318
SAF	1 880	**2 201**	2 478	834	**957**	1 080	**1 727**				986	**1 431**	1 831	345	**501**	641
Total	82 094	**95 533**	106 879	26 775	**32 135**	37 495	**56 849**	6 466	**6 518**	6 598	45 820	**64 301**	80 721	18 984	**26 794**	33 731

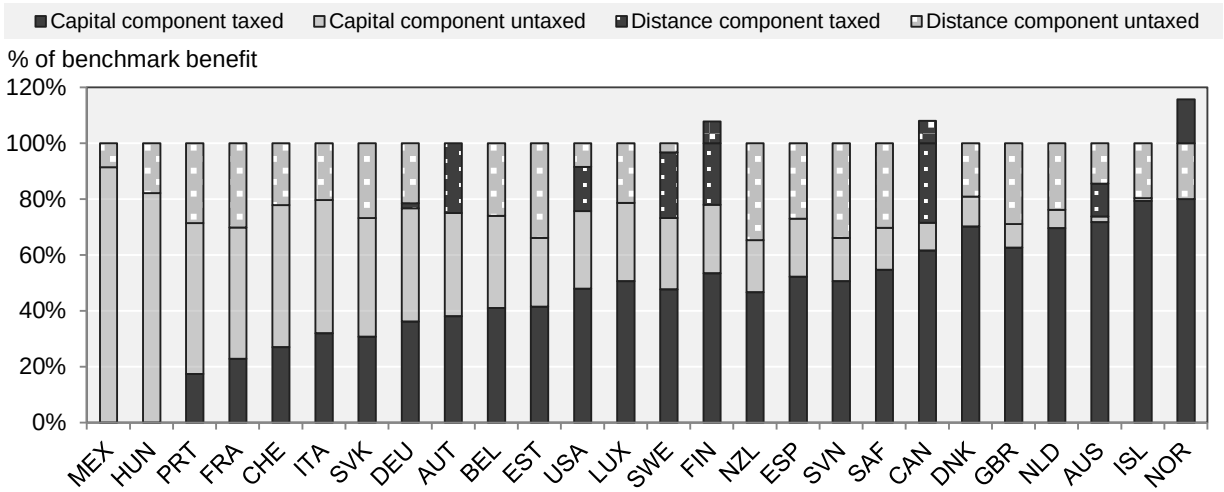
Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

[21] Results for the United States are presented as a range due to the difficulty in establishing the share of company cars in the US vehicle fleet and the common use of allowances to reimburse employees for business driving rather than the standard tax treatment.

The excess of the benchmark benefit over the tax system benefits across these countries is explained by two factors. Firstly, the capital charge in each country, excluding Norway, is lower than that used in the formulation of the benchmark, even at the lower levels. Secondly, most countries do not include a distance component in their tax systems. Only Australia, Austria, Canada, Finland, Germany, Sweden and the United States have a distance component in the measurement of their tax system, and of these countries, only Canada, Finland and Sweden have a distance component set at a rate that exceeds that used in the benchmark.

Of the two components in the benchmark, the distance component is the least captured by country tax systems: at the midpoint estimate, only 20% of the distance component is captured, compared to 60% of the capital component. Although the distance component forms a smaller part of the benefit calculated under the benchmark (around 25% at the midpoint estimate, on a simple average basis) the un-captured distance component accounts for around 40% of the total un-captured benefit. Given the incentive to drive more created by the absence of a distance component, this is likely to have an even greater impact on revenue if behavioural responses were included. Figure 7 shows the proportion of the benchmark benefit captured by each country, divided into the capital and distance components.

Figure 7: Proportion of tax system benefit to benchmark benefit (midpoint estimate)

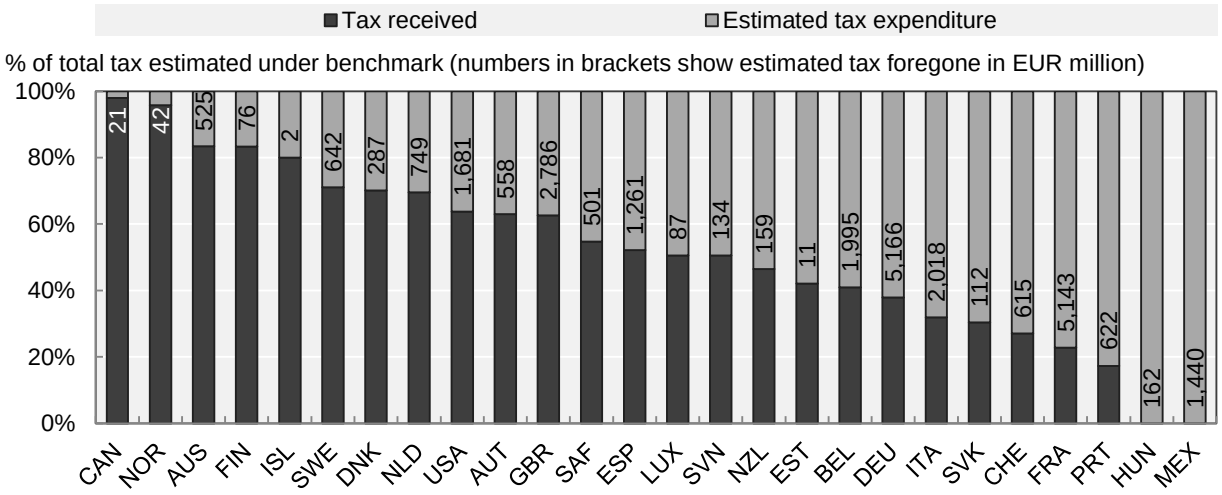


Source: OECD calculations of benchmark benefits and taxable benefits based on exchange rates and estimated company car stock in 2012.

Figure 8 shows the amount of estimated tax expenditure in each country as a proportion of total tax that would be payable on the benchmark (at the midpoint estimate). Twelve countries have a higher amount of tax foregone than tax received under the midpoint estimate of the benchmark.

If the value of the estimated tax expenditure in each country is considered against the size of the company stock, this provides an approximation of the average level of subsidy per car per year. The total annual subsidy per car is highest in Belgium, at EUR 2 763 per year per car, and lowest in Canada, at EUR 57 per year per car, as shown in Table 12. The weighted average subsidy per car per year across the countries considered is EUR 1 600. The level of subsidy to car is primarily determined by the proportion of the benchmark benefit captured by the country's tax system, although differing tax rates, fuel prices and vehicle value in each country also impact the results.

Figure 8: Estimated tax expenditure as a proportion of total tax under benchmark estimates



Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

On a per kilometre basis, the amount of subsidy ranges from EUR -0.02 per kilometre in Finland, where the tax system charge of EUR 0.18 per kilometre is higher than that used in the benchmark, to around EUR 0.07 per kilometre in New Zealand and Sweden. The countries that use distance driven in the calculation of the taxable benefit (Australia, Austria, Canada, Estonia, Finland, Sweden and the United States) have comparably low or even negative subsidies under the distance component on a per kilometre basis. Other differences in the level of subsidy per kilometre are caused by tax rates, fuel prices and the composition of the car fleet within countries.

Table 11: Size of annual subsidy relative to car price, per kilometre and per car at midpoint benchmark estimate

Country	Annual subsidy (under capital component only)	Annual subsidy (under distance component only)	Total annual subsidy (under capital and distance components)
	EUR per EUR of car price	*EUR per km*	*EUR per company car*
AUS	68	0.02	550
AUT	1 107	0.00	1 107
BEL	1 547	0.06	2 763
CAN	283	-0.01	57
DNK	646	0.06	1 796
EST	341	0.02	808
FIN	1 132	-0.02	772
FRA	1 254	0.04	2 057
DEU	1 584	0.04	2 426
HUN	1 788	0.02	2 176
ISL	32	0.03	616
ITA	1 430	0.03	2 041
LUX	1 133	0.04	1 992
MEX	1 668	0.01	1 826
NLD	276	0.05	1 284
NZL	767	0.07	2 195

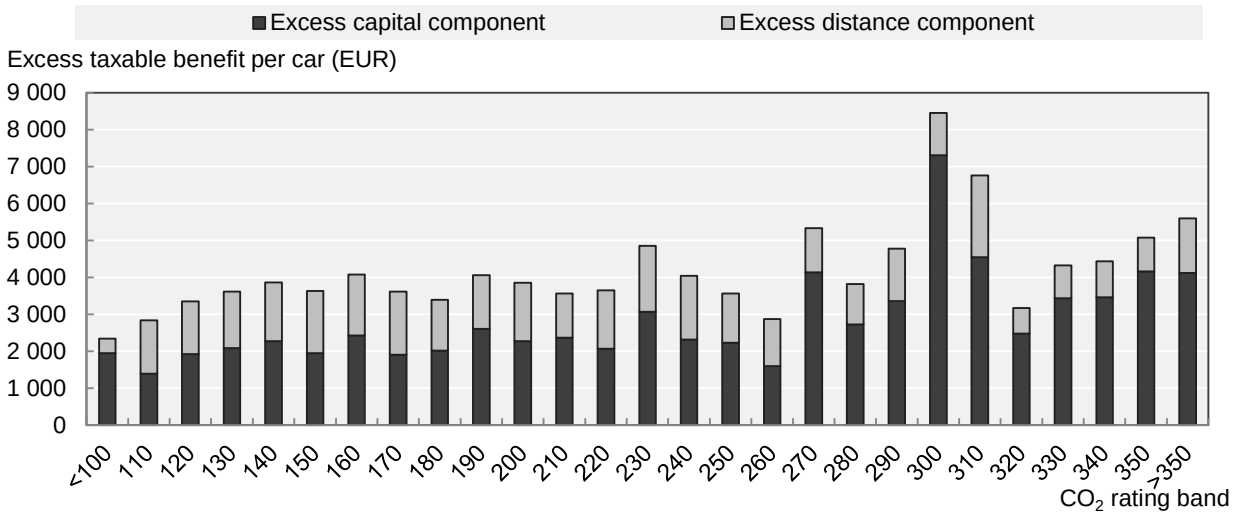
NOR	- 892	0.06	240
PRT	1 740	0.05	2 662
SVK	926	0.03	1 512
SVN	566	0.06	1 813
ESP	600	0.04	1 382
SWE	1 279	0.01	1 446
CHE	1 404	0.03	2 015
GBR	251	0.04	1 118
USA	779	0.01	1 018
SAF	431	0.04	1 302
Total	936	0.03	1 600

Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

The level of subsidy can also be considered against the carbon emission rating (which is closely related to fuel efficiency) of the vehicle fleet. Within each of the countries considered, the amount of the untaxed benefit per car increases slightly as the CO_2 rating increases (and fuel efficiency decreases). This is for two reasons. First, the level of CO_2 emissions per kilometre is loosely and positively correlated with vehicle price, which is used in the capital component of the benchmark and in many country tax systems. The lower the rate used to calculate tax system benefits relative to that of the benchmark, the greater the increase in the value of the tax expenditure as car value increases. Second, cars with higher CO_2 ratings (and therefore lower fuel efficiency) face higher fuel costs across the same distance. If a country does not tax the distance component, or applies a fixed per kilometre charge rather than one that varies with the amount of fuel used, the amount of untaxed benefit under the distance component will increase as CO_2 ratings increase. This is the case for almost all countries in the analysis, with the exception of Austria and the United States, which tax the market value of fuel costs.

The amount of untaxed benefit per car (the excess of the benefit under the benchmark over the benefit under the country tax system) for cars in different CO_2 rating brackets is shown in Figure 9. Country specific figures can be seen in Annex C.

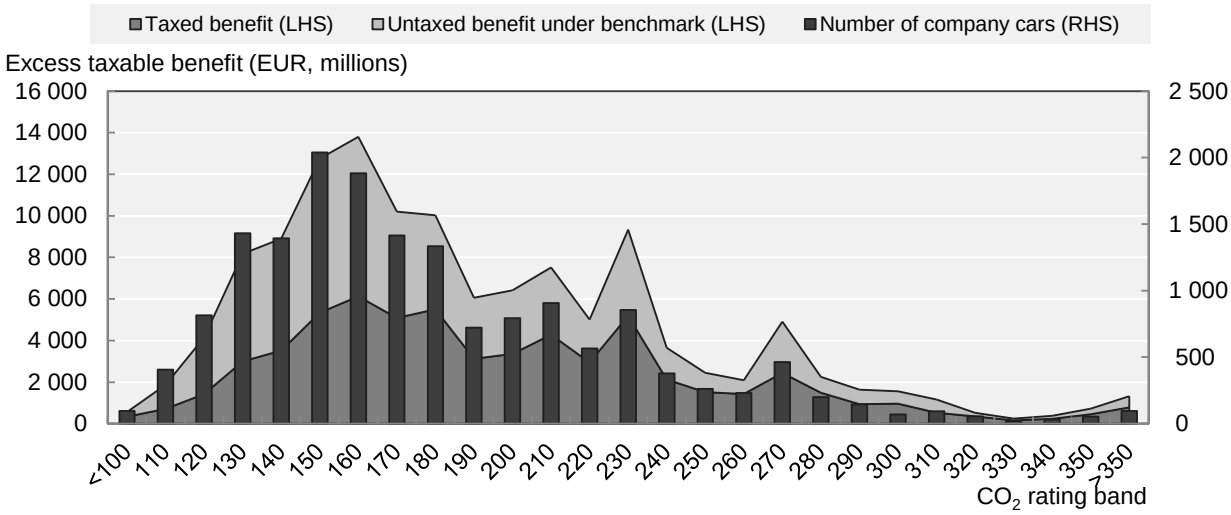
Figure 9: Amount of average untaxed benefit (midpoint benchmark estimate) per car across all countries at different CO_2 ratings



Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

Despite the greater subsidy per car received by those cars at higher CO_2 ratings, the company car stock is predominantly weighted toward the lower end of the CO_2 distribution. When the impact of this tax preference at each CO_2 rating is considered against the composition of the company car stock, the much larger number of company cars with relatively low CO_2 ratings means that the bulk of the untaxed benefit is due to cars with modest CO_2 profiles.[22] This is shown in Figure 10, where the dark grey bars on the graph show at each CO_2 rating band the total number of company cars included in the analysis. The area in mid-grey is the estimated untaxed benefit per car (at the midpoint estimate), multiplied by the number of cars within each CO_2 rating band; its area is the total untaxed benefit in the 25 countries considered. The light grey area on the graph represents the total taxable benefit at each level under the country tax system. The mid and light grey areas together therefore represent the total taxable benefit as measured by the benchmark.

Figure 10: Amount of untaxed benefit (midpoint benchmark estimate) across all cars and countries at different CO_2 ratings



Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

To test the responsiveness of country tax systems to changes in the assumption made about the distance driven, the midpoint benchmark estimate was also calculated for distances of 15 000 and 25 000 kilometres of personal use per year. This did not vary the taxable benefit in most countries, given the lack of a distance component in most countries' tax systems. Tax systems in which the taxable benefit varies with the distance driven can be divided into three groups:

- Countries with an explicit per kilometre distance charges (Canada, Finland, Sweden and the United States)

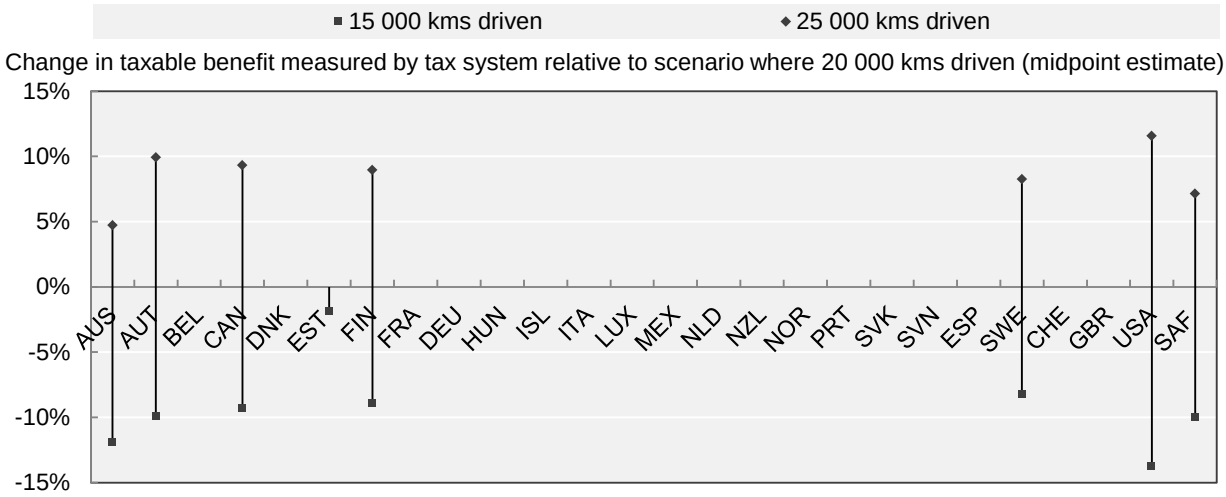
22 Deviations from the general patterns noted are caused by the differing tax systems and number of cars; e.g., Mexico has a high number of cars with a CO_2 rating between 260 and 270 grams per kilometre and does not measure a taxable benefit. The decrease in the distance component at this point is because fuel prices in Mexico are comparatively low. Annex C sets out the untaxed benefit per car, number of cars, and total untaxed benefit for each country.

- Countries where actual costs are included in the calculation (which increase as kilometres increase) (Australia, South Africa, and Austria);

- Countries where the nature of the tax system may change depending on the scenario modelled (for example, Slovenia, where a lower rate of capital component applies if the car was driven for less than 5 000 kilometres per year, or Estonia[23]).

The change in the level of taxable benefit estimated by the tax system in the countries under the sensitivity tests (as a proportion of the total benefit under the original assumptions) is shown in Figure 11 relative to the total taxable benefit under the midpoint estimate. Country-specific estimates under the different distance assumptions can be found in Annex D.

Figure 11: Variation in taxable benefit with change in distance assumptions

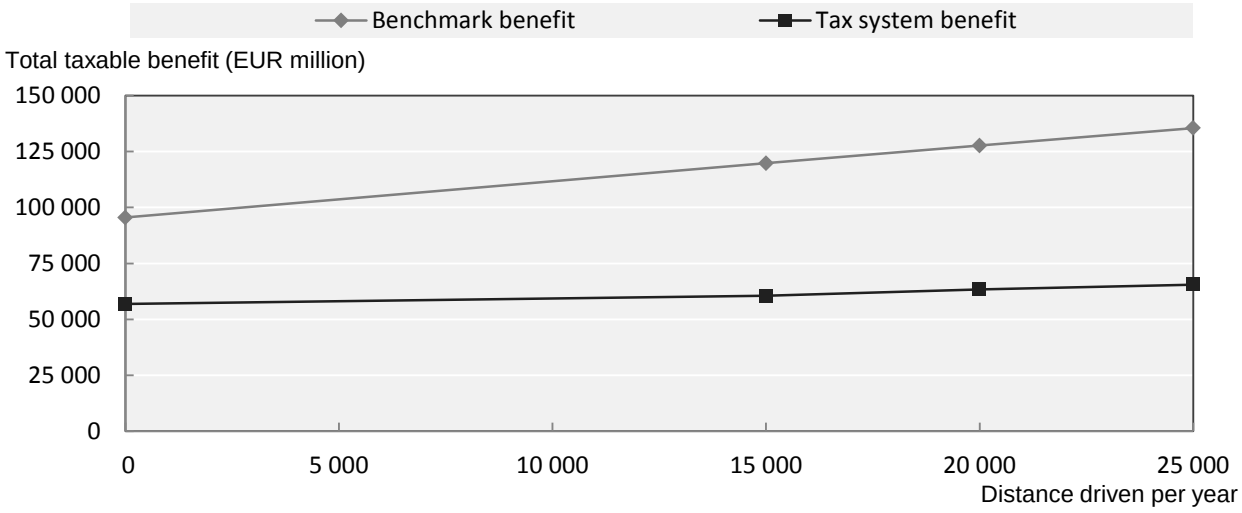


Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

Using the different distances modelled in the sensitivity testing, the responsiveness of the total benefit across all 26 countries to changes in the distance assumption are summarised in Figure 12, which shows both the benchmark and total country tax system benefits at a range of distances. Given the relatively small number of countries for which the taxable benefit varies with distance, the total taxable benefit across the 26 countries considered is comparatively unresponsive to distance. The intercept on the vertical axis represents the capital component (as the distance driven is zero), and the three different distances modelled are denoted by the dots on each line: 15 000 kilometres of personal use (one of the sensitivity tests), 20 000 kilometres of personal use (the scenario modelled) and the 25 000 kilometre sensitivity test. The area between these lines is the amount of untaxed benefit across the 25 countries, which increases as the number of kilometres driven increases.

[23] The asymmetry shown for Australia and Estonia is explained by the use of optional tax systems in both countries. This paper assumes that for each vehicle, the system generating the lower tax liability will be used.

Figure 12: Aggregate taxable benefit measured by the benchmark and country tax systems under the midpoint estimate at different distances



Source: OECD calculations of benchmark benefits, taxable benefits and tax foregone based on exchange rates and estimated company car stock in 2012.

The results presented above are calculated under an assumption that the useful life of a company car is three years. To test the impact of changing this assumption, each of the benchmark estimates was also calculated using a four-year useful life assumption. In these cases, Polk data from 2008-2011 was aggregated to estimate the company car stock.

Headline country results under this assumption are presented in Table 12. The increased size of the company car stock for each country increases the amount of tax foregone to between EUR 22.0 billion (low benchmark estimate) to EUR 37.6 billion (upper bound estimate) with a midpoint estimate of EUR 30.5 billion. Under this scenario, between 49% and 62% of the total benchmark benefit is captured by country tax systems (54% at the midpoint estimate) but the ranking of countries varies from that in the assumption of a three-year useful life span. The differences arise because most countries use a flat rate based on car value to determine the level of taxable benefit, whereas the benchmark profile uses a declining balance, meaning that the benchmark rate applied in the additional year is lower than many of the country tax systems' rates. Figure 13 shows the proportion of the lower, midpoint and upper benchmark estimates captured by the tax system for a 4 year useful life assumption in each country.

Each of the benchmarks calculated above assumes that the full value of the capital component is passed through to the employee, even though the use for the vehicle is split between business and personal use. This is because the car is available to the employee for their own use at all times and the value of the vehicle for their own use is not diminished by the fact that it is also used for business purposes. It is based on the opportunity cost principle and is effectively, the amount the employee would have to pay if they were to purchase the same benefit for themselves.

Source: OECD calculations of benchmark benefits, taxable benefits and tax foregone based on exchange rates and estimated company car stock in 2012.

Table 12: Taxable benefit and tax expenditures under country tax systems and different benchmark estimates, 4 year useful life (EUR million)

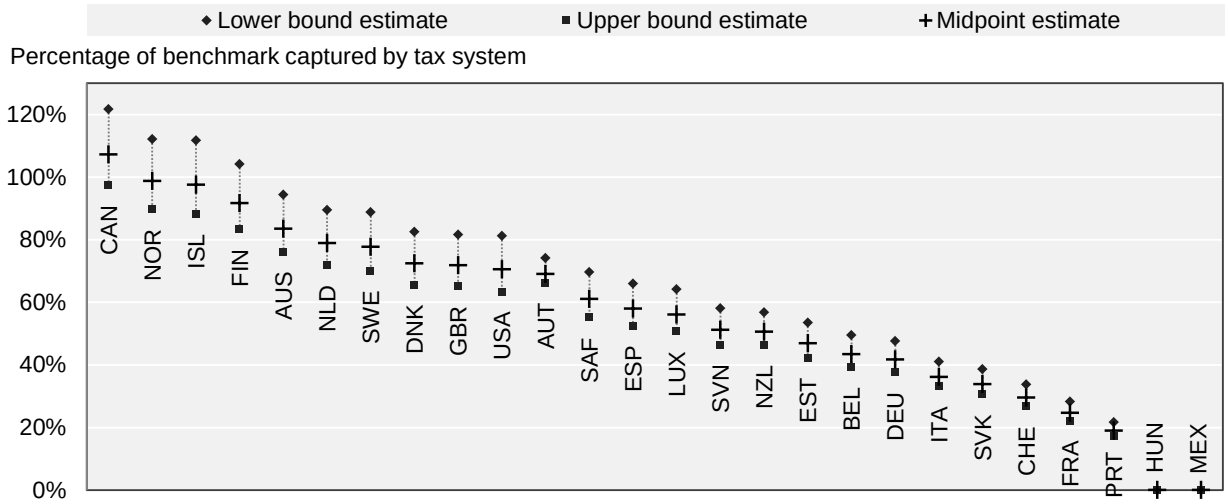
	Benchmark						Tax system				Untaxed benefit			Estimated tax expenditure		
	Capital component			Distance component			Capital	Distance component								
	Low	Midpoint	High	Low	Midpoint	High	All	Low	Midpoint	High	Low	Midpoint	High	Low	Midpoint	High
AUS[24]	5 139	**5 929**	6 572	1 798	**2 103**	2 409	**5 764**	1 050	**940**	859	390	**1 328**	2 152	154	**525**	850
AUT	3 102	**3 515**	3 836	1 121	**1 334**	1 547	**2 011**	1 121	**1 334**	1 547	1 091	**1 504**	1 825	413	**570**	692
BEL	4 447	**5 016**	5 451	1 725	**2 043**	2 360	**3 060**				3 112	**3 999**	4 751	1 859	**2 389**	2 839
CAN	2 261	**2 545**	2 759	1 000	**1 161**	1 323	**2 494**	1 475	**1 475**	1 475	- 709	**- 263**	111	- 251	**- 93**	39
DNK	1 468	**1 659**	1 806	382	**451**	519	**1 526**				324	**584**	800	182	**327**	448
EST	63	**71**	76	39	**46**	53	**55**				47	**62**	75	11	**14**	17
FIN	816	**919**	996	267	**313**	359	**705**	423	**423**	423	- 45	**103**	227	- 22	**49**	109
FRA	11 471	**12 921**	14 011	5 244	**6 299**	7 355	**4 728**				11 987	**14 493**	16 637	5 080	**6 142**	7 051
DEU	15 199	**17 181**	18 710	5 150	**6 082**	7 014	**9 222**	461	**461**	461	10 665	**13 579**	16 040	4 726	**6 017**	7 107
HUN	412	**457**	488	88	**128**	168					501	**585**	656	194	**227**	255
ISL	26	**28**	30	7	**9**	11	**36**				- 4	**1**	5	- 2	**0**	2
ITA	5 745	**6 240**	6 499	1 391	**1 878**	2 366	**2 929**				4 207	**5 190**	5 936	2 097	**2 587**	2 959
LUX	307	**345**	374	90	**109**	129	**254**				142	**200**	248	69	**97**	120
MEX	6 165	**6 941**	7 525	414	**771**	1 128					6 580	**7 712**	8 653	1 508	**1 768**	1 983
NLD	4 234	**4 738**	5 109	1 491	**1 760**	2 029	**5 125**				600	**1 374**	2 013	296	**678**	993
NZL	426	**479**	518	266	**299**	332	**393**				299	**385**	457	147	**190**	225
NOR	1 730	**1 957**	2 134	487	**561**	635	**2 484**				- 268	**34**	284	- 128	**16**	136
PRT	1 242	**1 395**	1 508	541	**644**	748	**387**				1 396	**1 652**	1 869	649	**768**	869
SVK	441	**498**	542	183	**216**	250	**241**				382	**473**	550	110	**136**	158
SVN	360	**404**	438	208	**241**	273	**330**				238	**315**	381	129	**170**	206
ESP	5 375	**6 012**	6 477	2 236	**2 666**	3 095	**5 025**				2 587	**3 654**	4 548	1 035	**1 462**	1 819
SWE	2 923	**3 333**	3 662	1 226	**1 413**	1 599	**2 436**	1 247	**1 247**	1 247	465	**1 062**	1 578	263	**601**	893
CHE	2 125	**2 399**	2 608	649	**778**	908	**938**				1 836	**2 240**	2 578	592	**723**	832
GBR	14 406	**16 096**	17 327	7 055	**8 306**	9 557	**17 512**				3 949	**6 890**	9 372	1 659	**2 894**	3 936
USA	0-9 892	0-**11 196**	0-12 210	0-3 532	0-**4 276**	0-5 021	0-**8 113**	0-2 787	0-**2 787**	0-2 787	0-2 524	0-**4 573**	0-6 332	0- 943	0-**1 709**	0-2 367
SAF	2 312	**2 620**	2 860	1 054	**1 223**	1 393	**2 343**				1 022	**1 499**	1 909	358	**525**	668
Total[25]	102 086	**114 895**	124 525	37 642	**45 111**	52 579	**78 111**	8 564	**8 668**	8 800	53 319	**73 227**	89 989	22 073	**30 491**	37 575

Source: OECD calculations of benchmark benefits, taxable benefits and tax foregone based on exchange rates and estimated company car stock in 2012.

[24] Figures for Australia are for a 3-year useful life period because registration data was not available for 2008.

[25] The total includes the 3 year estimate for Australia.

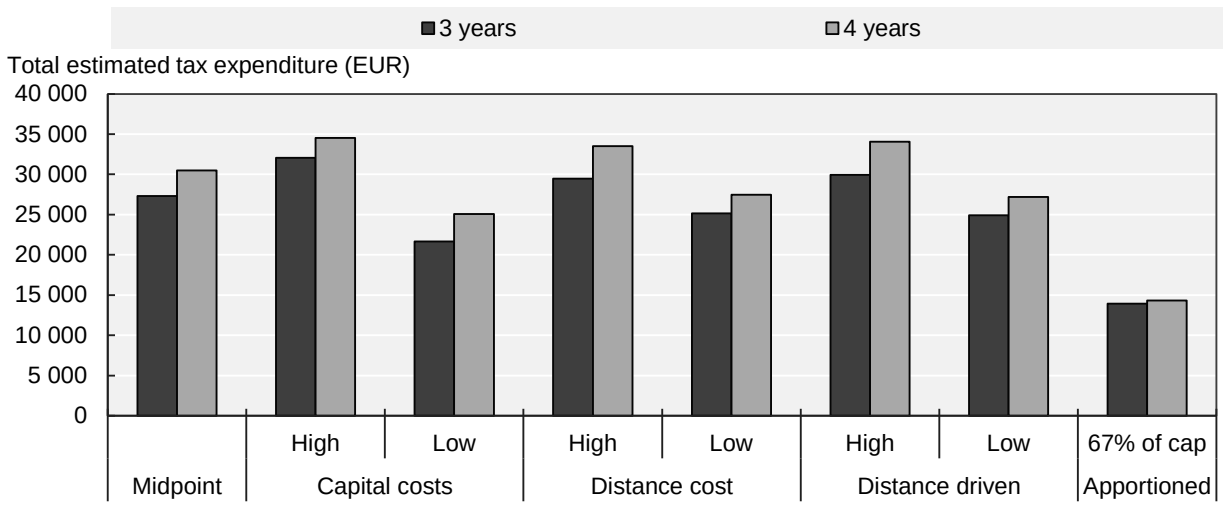
Figure 13: Proportion of benchmark captured by country tax systems under 4-year useful life



An alternative view is that the provision of the company car is the result of wage bargaining between the employer and the employee. Depending on the respective market power of each party, either party may in fact subsidise the other, meaning that between 0 and 100% of these costs should be allocated to the employee. The impact of varying this assumption on the amount of estimated tax expenditure is the same as scaling the capital component of the benchmark. If usage of the vehicle, based on distance driven, is used to apportion the capital component, only 67% of the benefit will be included as taxable to the employee. This reduces the total level of estimated tax expenditure from EUR 26.8 billion at the midpoint estimate to EUR 13.4 billion. The impact of this on country results is shown in Annex D under the heading “Appt”.

A summary of the total value of estimated tax expenditure under the different assumptions, distances and useful life periods measured is shown in Figure 14. Country specific results are shown in Annex D.

Figure 14: Estimated tax expenditure based on different benchmark assumptions, distance driven, useful life and apportionment



Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

3.3 Environmental impacts of company car tax settings[26]

The environmental harms associated with car use include those associated with the production of vehicles, such as resource depletion, manufacturing emissions, and other pollution; and those associated with the use of vehicles, such as increased emissions of carbon dioxide and local air pollutants. Vehicle use also contributes to other externalities such as road congestion, accidents and noise.

Both types of environmental harms are directly linked to certain car characteristics. The harms caused during the manufacturing process will be influenced by the nature of the materials used and processes required to build a particular car. A car's fuel type and fuel efficiency directly influence the emission of carbon and other greenhouse gases when used. A number of other car characteristics are linked to, but are not causative, of environmental harm. For example, older vehicles are less likely to be fuel efficient than newer ones; but the age of the vehicle in itself is not directly linked to fuel efficiency. Further, emission control equipment, as well as fuel efficiency, degrade with age. Similarly, larger or more expensive vehicles are likely to be less fuel efficient; but there is no causal link between size or price and efficiency. The scale of the environmental damage from production or emissions from car use will be determined by the number of cars produced and used; and for emissions, also by the distance they are driven.

Tax settings on company cars may influence these factors directly (through tax settings which relate directly to use, fuel efficiency, and cost) or indirectly (through a secondary characteristic such as age, size, or engine ratings that is correlated with environmental outcomes). The tax treatment of company cars does so by providing decision makers incentives to vary their behaviour in ways that have environmental impacts. In relation to company cars, decision makers include employers, employees and employees' households, who may respond to company car tax settings by changing private travel habits. These include decisions that affect the number of cars in the economy; the fuel efficiency of those cars and the fuel used; and the distance the cars are driven. The impact of tax settings on the environment should be considered in relation to each actor and their ability to influence environmental outcomes. Table 13 summarises the impact of the tax system on environmental outcomes.

Table 13: Impact of tax systems on environmental outcomes

	Number of cars	Fuel type and fuel efficiency of vehicle stock	Distance driven
Ability of each actor to respond to tax systems	Employer: Chooses when and how to provide the company car Employee: chooses household response to the provision of a car; may influence employer decision	Employer: responsible for choice of company car and therefore it's fuel efficiency Employee: may respond by changing the private car stock or substituting transport toward/away from company car	Employer: Limited impact; policies restricting private use may have some impact Employee: Chooses distance driven in company car; may also vary distances driven in private vehicles
Impact of personal tax treatment	Employee: Will depend on household response; company cars could be additional to or a substitute for private vehicles.	Employee: failure to tax the employee for the benefit received may have less impact if the employee cannot affect the purchasing decision;	Employee: May substitute toward the company car and away from the personal car if the cost per kilometre is not internalised; relative environmental effect will therefore depend on the difference in fuel efficiency between the

[26] An extensive discussion of the environmental impacts of company car tax settings can be found in Roy, 2014.

		secondary impacts for private car stock	two vehicles; May substitute car use for other forms of transport that would be cheaper in the absence of the tax preference or increase overall travel.
Theoretical benchmark for environmental impacts	The fuel type and fuel efficiency per car that would be purchased in the absence of tax preferences for the company	The distance driven in both personal cars and the company car if the employee had to fully pay costs of company car use.	The number of cars that would be driven were there no tax preferences to either the employee or employer.

In short, the impact of company car tax settings on environmental outcomes will largely depend on the incentives they provide for each of these actors in relation to their decisions about the number of cars in the economy, the fuel efficiency of these vehicles, and the distance for which they are driven. Although this paper does not attempt to quantify these impacts, some qualitative observations of the impact of different types of tax systems can be made. [27]

Under-taxation of the capital component may affect the number of cars in a country. Although the employer makes the final decision about whether to provide a company car (although in some cases this may be the result of remuneration negotiations between the employer and employee), the under-taxation of the capital component may render an employee and their household more likely to retain the company car as an additional vehicle, where, in the presence of a neutral tax treatment, they may have responded by reducing the number of private vehicles they own. Under-taxation of the company car benefit more generally may also increase the likelihood of the employer providing income to their employee in this form.

The tax treatment of variable costs affects decisions relating to the fuel efficiency of company cars and other vehicles. The fuel efficiency of a company car is largely driven by an employer's decision about the vehicle to purchase, which is likely influenced to some extent by employee preferences (and therefore the employee tax treatment). To the extent that fuel efficiency is related to other characteristics such as size or price, the employer may choose less fuel efficient vehicles if the tax system does not fully internalise the capital costs associated with car ownership. The employee is likely to have less choice about the fuel efficiency of the vehicle chosen as a company car, but can respond in ways that affect the overall carbon emissions of their transport mix. Under-taxation of the cost per kilometre may cause an employee and their household to substitute toward the use of the company car relative to other means of transport. Johannson-Stenman (2001) found that those who were in possession of a company car travelled on average 50% more than those who were not. Studies in Israel place the increase at, respectively, double, and 24% (Ehrlich & Tazdik, 2006 and Israel Bank, 2008; as cited in Shiftan (2009)).

The use of the company car, and thus the resulting environmental damage, is largely determined by employees and their households, although the employer may be able to influence these decisions by means of employment policies restricting the use of cars for private purposes. If the tax system does not fully include the benefits to an employee from travelling each additional kilometre, it provides incentives for the employee and their household to increase the use of the company vehicle relative to other means of transport, and at the margin, to increase the distance travelled. The relative environmental effect of this will depend on the difference in carbon emissions of the modes of transport foregone. The impact could potentially be positive if the employee and their household substitutes away from more damaging forms of transport, such as older or less fuel efficient vehicles.

[27] See Roy (2014) for a fuller discussion of the environmental impacts of company car tax settings.

A tax system which sets a fixed sum for either or both components of the benchmark will provide adverse environmental incentives, even where these charges accurately reflect the *mean* benefit under one or both components. This is because both the fixed benefits from having a car (such as from not having to pay the financing, registration, and depreciation costs) and the variable benefits (such as from not having to pay fuel and maintenance costs) vary respectively, with the price of the car, and the distance that the car is driven. For example, a lump-sum taxable benefit or a benefit size that is measured only by reference to company car value means that the marginal cost of increasing kilometres driven, and therefore emissions, is zero.

Calculating the taxable benefit based on the vehicle's value may approximate the fixed costs of ownership accurately, depending on whether an appropriate proportion of vehicle value is applied each year. However, using vehicle value alone as a method to calculate the taxable benefit will not adequately include the variable operating costs of a vehicle, even if they are implicitly covered, on an average basis. Unless the taxable benefit varies with the variable costs of car ownership, the employee faces no additional tax consequences from driving further and the marginal cost of another kilometre travelled for personal purposes is zero. This provides an incentive to increase the distance travelled in the company vehicle.

If the method of taxation includes a variable component per unit of distance travelled, the decision to drive further will increase the tax consequences to the employee and thus decrease the environmental impacts of company car use. However, a single rate per kilometre may under- or over-tax the actual benefit received by an employee from travelling an additional kilometre, as the vehicle's fuel efficiency and fuel types will affect the amount of the true benefit. If used alone, a variable component is unlikely to be able to capture the fixed costs of vehicle ownership, as the distance travelled has little or no connection with these costs. This may provide incentives to increase the size or value of the vehicle beyond what would be held were the full costs taxed. Finally, if the method of taxation is based on distance travelled, but in such a way that the actual distance travelled is not considered, the distance component is effectively invariable. This occurs, for example, if the charge is based on a pre-determined distance, or on home-to-work distance. If the distance component does not vary with distance that is actually driven, this component will in effect operate as a fixed charge; the marginal cost of additional personal distance travelled will be zero.

The benefit associated with company car tax use may also be estimated through the direct costs of ownership. To effectively capture the costs of car usage, all fixed and operating costs to the employee should be included in the calculation. If costs are measured by reference to the costs to the company, or if they do not include, for example, the fixed costs of ownership, such as depreciation or financing charges, they under-represent the benefit provided to the employee and provide incentives for remuneration to be provided in this form. This increases the fiscal and environmental cost of the tax settings.

Multiple components are often used to estimate the value of the benefit, e.g. combining a fixed component based on vehicle value and a variable component based on distance travelled, or actual cost. When both of these components are set at a level that reflects the value of the benefit received by the employee, and vary as necessary for different vehicles, this allows both components of the taxable benefits to be estimated, minimising the fiscal and environmental costs associated with car ownership.

4. COMMUTING EXPENSES

4.1 Taxation of commuting expenses in OECD countries

The tax treatment of commuting expenses is generally determined by two factors: who has borne the expense (the employee or employer) and whether commuting expenses are considered to be private expenses or work-related expenses. Views on this last question differ among OECD countries.

Some consider commuting to be entirely private and akin to the cost of housing or entertainment. On this view, the costs of getting to work are mostly a function of personal or "lifestyle" decisions about where to live and how to get to work. Under this approach, neutrality implies that commuting expenses should be treated consistently with other personal expenses. Therefore, reimbursement or subsidisation of commuting expenses by an employer is taxed, consistent with other forms of income. Similarly, like other personal expenses, these costs are non-deductible when paid for by the employee.

The second approach is based on the contrary premise that commuting expenses are incurred for the purpose of earning employment income. On this view, people cannot be expected to live in the same place that they work, so the cost of getting to work should be recognised as a legitimate employment expense. This more expansive view of employment expenses may in part be intended to promote labour market participation. In this case, tax systems often treat the cost to the employee as if they had paid it from pre-tax income, allowing deductions for the expenditure if paid by the employee, and exemptions if paid by the employer.

4.1.1 Employee-paid commuting expenses

Several OECD countries allow a deduction for the cost of commuting. They use a number of different ways to calculate the cost to be deducted, which are summarised in Table 14.

Table 14: Typology of tax treatments of employee-paid commuting costs[28]

Deductible			Not deductible
Flat rate deductions	Deductible at cost	Per km deduction	
Austria	Finland[29]	Denmark	Australia
Belgium*	Sweden*	Germany	Canada*
France*	Switzerland	Norway	Estonia
Luxembourg			Hungary
Poland			Italy
			Mexico
			Netherlands*
			New Zealand
			Portugal
			Slovakia
			Slovenia
			Spain*
			United Kingdom

28 A * after a country name in the diagram indicates that this is the general or default rule, but that some exemptions may apply. These are described in the discussion following the diagram.

29 Finland allows deductions up to the amount of the lowest cost of commuting (generally public transport). If no public transport is available, a per kilometre deduction can be made, where the per kilometre rate is intended to estimate the actual cost of commuting.

	United States

Source: OECD classification, based on questionnaire responses from each country.

Commuting expenses are not deductible in Australia, Canada, Estonia, Hungary, Italy, Mexico, the Netherlands, New Zealand, Portugal, Slovakia, Slovenia, Spain, the United Kingdom, the United States, and South Africa. In responses to the questionnaire, this was generally expressed to be because of the view that commuting is a private rather than work-related expense. In some cases, difficulties in separating the costs of commuting from other private travel were an additional factor in not allowing deductions. In the Netherlands, exemptions apply to this general rule for public transport.

In Austria, Belgium, Finland, France, Germany, Luxembourg, Norway, Poland, Sweden and Switzerland, commuting costs are deductible to employees. This treatment was expressed to be because commuting expenses are seen to be necessarily incurred in order to derive income and are closely related to the earning of income; and/or to reduce travelling costs and increase the size of the effective labour market.

A common method of estimating the taxable benefit is to allow the actual expenses incurred by the employee to be deducted against their income. This approach is used in Sweden and Switzerland. In both countries, commuting in private vehicles is deductible at a per kilometre rate only if car use is deemed necessary due to the distance to the workplace, or unavailability of public transport. In Switzerland, the costs of biking are estimated to be a lump sum amount per year. Further, public transport expenses are deductible in Belgium, France, Germany, Poland and the Netherlands; and in Canada, the costs of public transit passes may be eligible for a non-refundable tax credit.

Several OECD countries calculate the amount of the deduction by applying a set rate (or rate structure) to the distance travelled between the home and workplace. Both Denmark and Norway allow a deduction per kilometre at a rate that varies based on how far the employee lives from the workplace. In both cases, the further the employee lives from the workplace, the lower the rate of deduction per kilometre travelled. Both deductions are set by this rate regardless of the method of commuting. In Germany and France, taxpayers may also deduct the cost of commuting at a set rate per kilometre between home and the workplace, although more generous rules apply to commuting by public transport. Table 15 sets out the per kilometre deduction allowances in each of these countries.

Table 15: Rates of per-kilometre allowances

Country	Rate per kilometre (EUR)	Restrictions or conditions
Belgium	0.15	Applies when actual professional expenses are deducted
Denmark	0.27 or 0.13	EUR 0.27 (DKK 2) applies for distances between 25 and 100 km per day; EUR 0.13 (DKK 1) applies for distances in excess of this.
Finland	0.24	Applies to commuting by car if public transport is not available
France	Varies	Applies if chosen rather than the 10% standard deduction from income
Germany	0.30	-
Norway	0.20 or 0.09	EUR 0.20 (NOK 1.5) applies when the distance travelled is less than 50 000 kilometres per year and EUR 0.09 (NOK 0.7) applies in excess of this
Sweden	0.21	Applies only to cars, and when the distance between home and work is greater than 5 km and use of a car saves more than one hour per day
Switzerland	0.58	Applies only to cars, and only if public transport is unavailable or not viable.

Source: OECD, based on questionnaire responses from each country.

The deduction may also be set at a fixed or non-distance related amount which approximates commuting expenses. This approach is used in Austria, Luxembourg and Poland; and Belgium and

France allow taxpayers a choice between a deduction based on their income level and the deduction of actual costs. A fixed deduction is also allowable for cycling in Switzerland and in Germany (under a minimum commuting distance, in certain circumstances). Table 16 summarises the fixed sum deductions available.

Table 16: Fixed sum deductions

Country	Amount deductible (EUR)	Restrictions or conditions
Austria	291 with additional deductions	Additional deductions vary based on availability of public transport and distance from work
Belgium	Varies from 28.7% to 3% of income	Optional; employees can chose between this or deduction of actual costs additional deductions apply if home to work distance is greater than 75 km
France	Varies based on formula (see Annex A)	10% of salary is deductible as professional expenses; but actual costs can also be chosen
Germany	1 000	The allowance is permitted for all income-related expenses, including commuting and other income-related expenses such as training, clothing, or equipment
Luxembourg	396 – 2970	Amount varies based on distance travelled to work (EUR 396 is minimum, based on 4 kilometres or less; EUR 2 970 is maximum for 30 kilometres or more).
Poland	313-587	Depends on number of employment relationships
Switzerland	579	Applies to employees who cycle to work

Source: OECD, based on questionnaire responses from each country.

The availability of deductions for commuting may vary depending on the transport mode. Table 17 shows the tax treatment for each different form of transport, in systems that allow deductibility.

Table 17: Tax treatment of different commuting methods if employee-paid

Country	Personal car	Bicycle	Walking	Carpooling	Public transport
Austria	Flat rate				
Belgium	Flat rate deduction or actual cost up to EUR 0.15 per km			Flat rate deduction or actual cost	
Canada	Not deductible				Passes may be eligible for tax credit
Denmark	Per kilometre allowance				
Finland	Deductible at cost of cheapest means of transport between home and work regardless of actual means of transport				
France	Flat rate or kilometric scale			Flat rate	
Germany	Per kilometre allowance				
Japan	Deductible at reasonable cost		Not deductible		Deductible at actual cost
Luxembourg	Fixed deduction based on distance from home to workplace				
Netherlands	Not deductible				Limited deductions for over 10 kilometres
Norway	Per kilometre allowance				
Poland	Flat rate				
Sweden	Per kilometre allowance	No deduction		As for cars	Deductible
Switzerland	Per kilometre scale if no public transport	Lump-sum deduction	Not deductible	Per kilometre scale for driver only	Deductible

Source: OECD classification, based on questionnaire responses from each country.

4.1.2 Employer-paid commuting expenses

If commuting expenses are paid by the employer, these may or may not be taxed as income to the employee depending on the different aims of the tax system. Employer provided commuting expenses include the costs of transport as well as parking expenses. Many employers facilitate commuting by

car by providing free parking to employees. Given the increasing financial cost of parking, this can be a benefit of substantial value. Employer-paid parking is treated in four main ways across OECD countries as summarised in Table 18.

Seven responses indicated that employer-provided parking was not treated as taxable income to the employee. Two further countries (Norway and the United Kingdom) consider it to be a taxable benefit, but do not tax it due to complexity. Parking provided by the employer was seen as taxable in the remainder of the countries for which responses were received. Four countries (Hungary, the Netherlands, New Zealand and Portugal) tax parking only if it is provided off the employer's premises or if represents a cost to the employer. This exemption aims to reduce the compliance costs associated with tracking the benefits provided on an employer's premises, which are often small in monetary value. Complexity is another reason cited for not taxing this benefit.

Where parking is taxable, the value of the benefit is generally based on the market value of parking in the particular location, which may vary considerably between urban and rural areas (and may or may not reflect resource costs accurately). However, some exemptions apply: the United States allows an exemption of up to USD 240 per month for employer-paid parking; and France allows a limited exemption which applies if the employee is required to use a vehicle for work and there are no free parking spaces available nearby. Several countries also provide exemptions based on where the park is located; Australia for example calculates the benefits either by reference to the lowest fee charged by a commercial parking station within one kilometre or to the market cost to the employer, whereas Austria does not tax parking provided in a free parking zone.

Table 18: Typology of tax treatments of employer-paid parking[30]

Taxable benefit			No taxable benefit
Off premises taxed	All taxed	Not taxed	
Hungary	Australia*	Norway	Belgium
Netherlands[31]*	Austria*	United Kingdom	Finland*
New Zealand	Canada		Germany
Portugal	Estonia		Mexico
	France		Slovenia
	Luxembourg		Switzerland
	Poland		South Africa
	Spain		
	Sweden		
	United States		

Source: OECD classification, based on questionnaire responses from each country.

Public transport expenses paid by employers may also be treated as taxable income to employees. The different tax treatments of employer-paid public transport are summarised in Table 19.

30 A * after a country name in the diagram indicates that this is the general or default rule, but that some exemptions may apply. These are described in the discussion following the diagram.

31 In the Netherlands, employers are able to designate the off premises parking to be part of a tax free base to the employee under certain conditions.

Table 19: Typology of tax treatments of employer-paid public transport costs

Taxable			Not taxable
Other methods	Partially exempt	Fully taxable	
Belgium	Finland	Australia	Austria
Hungary	Spain	Canada	Denmark
Mexico	United Kingdom	Estonia	France
Switzerland	United States	Italy	Netherlands
		New Zealand	Portugal
		Norway	Slovakia
		Poland	Slovenia
		Sweden	South Africa

Source: OECD classification, based on questionnaire responses from each country.

In several countries, the tax treatment of employer-paid commuting costs depends on the treatment of employee-paid commuting costs. For example, in Belgium, if the employee chooses to make a lump-sum deduction for professional expenses, employer-paid public transport is exempt from taxation. However, if the employee deducts their actual expenses, employer subsidies are taxable. Similarly, in Denmark, employer-paid public transport use is tax exempt if the employee forfeits the right to deduct the fixed rate for commuting expenses. In Norway, public transport paid for by the employer is taxable, as the basic and travel deductions allowed are assumed to cover these costs.

The nature of the tax treatment of employer-paid commuting costs may vary depending on the method of commuting chosen. Table 20 summarises the tax treatment of different forms of commuting when reimbursed or paid by the employer.

Table 20: Tax treatment of different commuting methods if employer-paid or reimbursed

Country	Personal car	Bicycle	Walking	Carpooling	Public transport
Austria	Taxable				Exempt in certain conditions
Belgium	Exempt up to EUR 350	Exempt up to 0.21 EUR per km	Taxable	Exempt up to limit	Exempt if lump sum deduction is chosen
Denmark	Taxable				Not taxed; but fixed deduction disallowed
Finland	Taxable				Tax exempt up to limit
France	Not taxable				
Germany	15% flat rate tax				
Hungary	From outside admin boundary, HUF 9 per km can be reimbursed tax free. Otherwise taxable.				Exempt outside admin area; taxable at 16% if inside
Japan	Not taxable up to JPY 100 000 if provided separately from other salary				
Mexico	Taxable but exempt if part of a collective agreement				
Netherlands[32]	EUR 0.19 per kilometre can be reimbursed tax free				Real costs
Norway	Taxable because all benefits are included in the basic and special travel deduction				
Poland	Taxable				
Slovenia	Exempt up to costs of public transport (in some circumstances, EUR 0.18 per km).				Exempt
United Kingdom	Taxable				
United States	Taxable	Exempt up to maximum amount	Taxable	Exempt up to maximum amount of USD 125 per month for combined commuter highway vehicle	

[32] If not reimbursed, the employee may make a deduction for these expenses, provided the distance travelled is greater than 10 kilometres.

Country	Personal car	Bicycle	Walking	Carpooling	Public transport
		(USD 20 per bicycle commuting month within the year)		transport and transit passes.	
South Africa	Taxable			Exempt	

Source: OECD classification, based on questionnaire responses from each country.

Most countries that do not allow a deduction for commuting expenses provide that the payment or reimbursement of employee commuting expenses by the employer is taxable as a fringe benefit or as income from employment. Limited exemptions apply in Hungary, if the employee lives outside the administrative area, and in Spain, where reimbursement for public transport costs is exempt from taxation up to a maximum level.

Of those countries that do allow deductions for commuting, the treatment of employer-paid expenses is often related to the choice of deduction. For example, in Belgium, an exemption for employer-paid expenses exists only if a lump sum deduction is chosen; and in Denmark, accepting a tax free reimbursement means foregoing the fixed deduction that would otherwise apply. In other cases, such as Norway and Slovenia, the tax system uses either deductions or reimbursement, and considers that the provision of one form of relief obviates the need for the other. For example, in Norway, no exemption is deemed to be needed as employer-paid expenses are included in total income to which commuting deductions then apply. In Slovenia, reimbursements are compulsory, and are tax-free below a minimum level (meaning that no deductions are needed).

4.2 Fiscal and environmental impacts

The tax treatment of commuting expenses will have different fiscal and environmental impacts depending on two main factors:

- Whether the tax treatment means that commuting expenses are effectively paid from pre-tax or post-tax income; and
- The distinction made between different forms of commuting.

If commuting expenses are not deductible when paid by the employee and are tax exempt when paid by the employer, this means that they are effectively paid by the employee from their post-tax wages. They are thus treated by the tax system in the same way as other personal expenses, meaning that the treatment is neutral with regard to fiscal and environmental outcomes. This is not to say that there are no environmental consequences associated with the commuting forms chosen, as use of a private vehicle entails an environmental cost, but rather that the taxation of commuting expenses does not contribute to worsening these outcomes. From an environmental perspective therefore, not allowing deductions or tax-exemptions for commuting expenses, with the possible exception of public transport, is preferable.

If commuting expenses are deductible when paid by the employee, or tax exempt when paid by the employer, this means that they are effectively paid by the employee from their pre-tax, rather than post-tax income. Whether or not this represents a fiscal cost to a country will be determined largely by the underlying view towards the nature of commuting expenses held by that country. If commuting expenses are seen as work-related expenses, the non-taxation (or deductibility) of these expenses has no fiscal consequences. However, if commuting costs are seen as private expenses, tax exemptions or deductibility of commuting expenses means that employees are not taxed on all the income they have

received, and fiscal revenue is reduced relative to what it would be if the employee was fully taxed on their employment income.

The fiscal costs may increase depending on the behavioural response to tax settings. If distinctions are made between different forms of commuting, employees are likely to change their behaviour towards those that are taxed more lightly, increasing fiscal cost beyond a static estimate based on current transport modes.

Regardless of the view taken in relation to whether commuting expenses are personal or work-related, if commuting expenses are paid from pre-tax rather than post-tax income through deductibility of commuting costs at the employee level, or tax-exempt reimbursement by the employer, this may have adverse environmental consequences. In these cases, employees are not paying the full costs for their transport and may therefore change their behaviour – for example, by purchasing larger vehicles than they would in the absence of the tax preference, by substituting toward a tax-preferred form of commuting, or increasing the length of the commute. If the social and environmental costs of the marginal change are not fully internalised under existing transport taxes and policies, which is generally the case, this will inadvertently worsen environmental outcomes.

Where commuting expenses are deductible, the three main approaches that are used to calculate the level of the deduction permitted may have different environmental effects in addition to their impact in reducing the cost of commuting and therefore providing incentives at the margin to live further from the workplace. Assuming each of these three treatments apply equally to each mode of commuting, some general comments can be made about the likely environmental impacts of each, in addition to their impact in reducing the cost of commuting.

Allowing the taxpayer to deduct the actual cost of commuting from their taxable income, or allowing employers to reimburse actual expenses tax-free, has the effect of increasing the relative attractiveness of forms of commuting that have a cost to the employee, comparatively penalising costless or lower cost forms of commuting such as walking, biking or carpooling to forms of commuting with a higher cost, such as public transport or car use. To the extent that employees choose cars as a result of this lowered cost, the deduction of actual costs will increase the distance travelled in vehicles and contribute to carbon emissions, local air pollution, congestion and accidents as a result. Deductions that are based on a per kilometre rate, which does not vary based on the form of commuting chosen, do not have the same impact in causing substitution between different forms of commuting. However, uncapped deductions per kilometre may promote increased distance travelled at the margin. Similarly, flat rates that apply to all forms of commuting do not give a tax preference to particular transport modes.

In practice however, countries that allow deduction or tax-free reimbursement of commuting expenses do not always apply a uniform treatment across these expenses. Variations for different methods of commuting can significantly change the environmental outcomes associated with the deduction or exemption. If the tax treatment differs based on the form of commuting, this has the impact of providing a tax preferred method of commuting and lowering the costs of that form of commuting relative to others. This will mean, at the margin, tax will create incentives for individuals to use more of this form of commuting; either by travelling for increased distances, or by substituting this form of commuting for another form of commuting. This can have environmental implications, depending on the form of commuting that is chosen relative to that foregone.

Where deductions are allowable, Austria, Denmark, Finland, Germany, Luxembourg, Norway and Poland do not differentiate between different forms of transport. Generally, when differentiations are made between different forms of commuting, these are environmentally motivated. Belgium,

Canada, Germany, Japan, the Netherlands, Sweden and Switzerland allow more generous deductions for public transport; increasing incentives to travel by public transport, relative to other forms of transport, which may have positive environmental impacts. Sweden and Switzerland provide less favourable treatment for car use than for other forms of transport: Sweden applies a per kilometre allowance for car use and carpooling for commuting costs that are in excess of SEK 10 000, and full deduction of public transport costs in excess of this threshold, with the intention of decreasing car use and promoting the use of public transport (although no deduction is allowed for biking or walking); Switzerland allows deductions only in limited cases for private vehicle use, a lump sum deduction for biking, and full deduction of public transport costs.

The tax treatment of employer-reimbursed commuting expenses is more uniform between different forms of commuting, although if employers reimburse actual costs, this gives an implicit advantage to commuting by vehicle or by public transport. Several countries, however, provide greater exemptions, or only allow exemptions at all, in relation to employer-paid public transport. These countries include Austria, Belgium, Denmark, Finland, Hungary, Mexico, the Netherlands, Slovenia and South Africa.

The tax treatment of employer-provided parking may also have significant environmental impacts. Parking costs can often be significant and the un-taxed benefit to the employee from not having to pay parking costs may be a significant factor in the decision as to the form of commuting chosen. Allowing employers to provide untaxed parking to their employees, even on premises, decreases the cost of commuting by vehicle relative to other forms of transport, with consequent impacts on carbon emissions, local air pollution and congestion.

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ANNEX A: SUMMARY TABLES

Table A1: Tax treatment of company cars

	Taxable benefit calculated by:	Calculation of taxable benefit [time period]	Special conditions or exceptions	Variation if employee pays fuel costs	Tax applied
Australia	Either: 1. Actual and deemed cost; or 2. Percentage of cost price	1. Actual costs include repairs, maintenance, fuel, registration and insurance, and where the car is leased, leasing costs. Deemed operating costs include deprecation (18.75% per year) and interest. The cost is reduced to the proportion of private use (substantiated by a logbook and odometer records. 2. Cost price is multiplied by 20% and then by the % of days in the FBT year for which the car was available for private use		Benefit reduced by amount of costs paid by employee to employer (provided paid from after-tax income); or to a third party.	PIT. Superann-uation guarantee contributions do not apply.
Austria	Either: 1. Percentage of cost price (if personal use <50%); or 2. Actual business cost (or allowance for business km) deductible (if personal use >50%)	1. 1.5% of acquisition cost up to max of EUR 40 000 [monthly] 2. The direct costs of business use can be documented and deducted (including depreciation); or a per-km allowance of EUR 0.42 per km is deductible. Annual ceiling of EUR 30 000 applies.	1. If personal use < 6 000 km [yearly], 0.75% of acquisition cost applies	-	1. PIT and SSCs. 2. PIT.
Belgium	Percentage of list price	6/7ths of list price multiplied by percentage determined by CO_2 emissions. These range from 4% to 18%. Per year and apply to petrol and diesel vehicles at different rating thresholds. The percentage of list price included decreases with vehicle age (up to 70% inclusion after 60 months). The taxable benefit cannot be less than EUR 1200.		-	PIT; and a social solidarity charge (payable by the employer); normal SSCs do not apply.
Canada	Two components: 1. Percentage of cost price; and 2. a per-km charge	1. 2% of acquisition cost or 2/3rds lease price [monthly] 2. 0.24 CND (EUR 0.18) per km of personal use	1. If business use > 50% and personal use is <20 000 km [yearly], standby charge reduced: multiply standby charge by the fraction obtained by dividing the number of personal use km by 20 000. 2. If business use >50%, this charge may be equivalent to 50% of the standby charge	2. Is reduced by the amount of the operating expenses reimbursed by the employee	PIT and CPP contributions apply. EI contributions do not apply.
Denmark	Percentage of list price	25% of list price (from a minimum of DKK160 000 to 300 000 (EUR 21513-40336)) and 20% for the value in excess of this [yearly]	For the first 3 years after the car's initial registration, the value is set at the original price for the car when new. From the 4th year, the value is reduced to 75% of the new price.	-	PIT.

	Taxable benefit calculated by:	Calculation of taxable benefit [time period]	Special conditions or exceptions	Variation if employee pays fuel costs	Tax applied
Estonia	Either: 1. EUR 256 per month; or 2. Per km charge	2. EUR 0.20 for cars <2 000 cm3 cylinder capacity; EUR 0.30 for cars in excess		-	
Finland	Two components: 1. Percentage of cost price; and 2. A per-km charge (or lump-sum cost)	Both components are based on: Age of the vehicle Whether fuel is provided by the employer		2. If the employee pays, a lower per-km charge is used.	
France	Either: 1. Actual private cost; or 2. Percentage of cost price	2. 9% of acquisition price [yearly]	1. If the car is > 6 years, 6% is applied. Rental cars are evaluated at 40% of the price of the car.	-	PIT, SSCs.
Germany	Either: 1. Two components: a. A percentage of list price; and b. a per-km charge (on estimated home-work distance); or 2. Actual private cost	1a.1% of list price [monthly] 1b. 0.03% of list price per km between home and workplace 2. Requires log book and expenses to be documented	-	-	PIT
Hungary	No taxable benefit	-	Companies must pay EUR 24 (HUF 7 000) per month for company-owned or used vehicles with a cylinder capacity of less than 1600 cm^3 and EUR 51 (HUF 15 000) above this.	-	-
Italy	Per km charge	30% of 15 000 km are deemed to be for personal use and taxed at ACI rates per km [yearly].	Benefits below EUR 258.23 (including other benefits) are not taxed	Costs paid by the employee are deducted from the taxable amount	PIT, SSCs.
Japan	Actual private cost	No specific formula for income tax or pension or health premiums, but cost must be reasonable. For labour insurance premium, a set fee is considered a benefit. This varies by prefecture.	-	-	PIT, pension contribution and health and labour insurance premiums.
Luxembourg	Either: 1.Actual costs of personal use (based on logbook); or 2. Percentage of cost price	1. Real cost of personal car use, depending on % of private use; employee maintains mileage log; 2. 1.5% of cost price	-	-	PIT, SSCs
Mexico	No taxable benefit	-	-	-	-
Netherlands	Percentage of list price	CO_2 emissions (g/km) / % list price <50 / 0 - 95 (diesel); 110 (other fuels) / 14 - 116 (diesel); 140 (other fuels) / 20 >116 (diesel); 140 (other fuels) / 25	Cars > 15 years of age use 35% of actual price [yearly]. If personal use <500 km, no taxable benefit	-	PIT/wage tax only. Will be included in SSC base from 2013.
New Zealand	Percentage of cost price	20% of cost price (36% if the tax depreciated value is used) [yearly]	Exemption where personal use is incidental to business use.	-	PIT.

	Taxable benefit calculated by:	Calculation of taxable benefit [time period]	Special conditions or exceptions	Variation if employee pays fuel costs	Tax applied
Norway	Percentage of list price	30% of car value up to NOK266300 (EUR 35130); 20% above this	100% of base where driven for business purposes less than 40 000 km; 75% if business km exceed 40 000. 50% if car is entirely electric. Reduction of 25% if the car is more than three years old.	-	PIT, SSCs
Poland	Direct costs of personal use are taxable	Market price of the services which can be bought and sold	-	-	-
Portugal	Percentage of cost price	0.75% of acquisition cost [monthly]	-	-	PIT, SSCs
Slovakia	Percentage of cost price	1% of acquisition cost [monthly]	-	-	PIT, SSCs
Slovenia	Percentage of cost price	1.5% of acquisition cost*1.25 [monthly]	The value of the car is reduced by 15% per year from years 2-4; from year 5, the value is reduced by 10%, until year 8, when the value is set at 10%. When the personal use < 500 km [monthly], the value of the vehicle is reduced by 50%	If costs are paid by the employee the base is reduced by 20% (to 100% of acquisition cost)	PIT, SSCs
Spain	Percentage of cost price	20% of the acquisition cost [monthly]		-	PIT, SSCs
Sweden	Four components: 1. Lump-sum 2. Percentage of list price 3. Percentage of list price 4. 1.2* Fuel costs	1. 0.317 multiplied by a basic price (SEK 42800 (EUR 4844)) 2. Government borrowing rate multiplied by 0.75 multiplied by the list price of the car 3. 9% of the price of the car up to 7.5* the basic price; 20% above this. 4. 1.2 times fuel costs if paid for by the employer	Temporary rules for the 2012-13 income years allow an additional reduction for certain green cars. For some electric cars/ electric hybrid cars (that can be connected to a grid) and gas cars, the value of the benefit is reduced to 60 percent, with a maximum reduction of SEK 16 000.	-	PIT, SSCs
Switzerland	Percentage of cost price	0.8% of acquisition cost subject to minimum benefit of CHF 150 [monthly] (EUR 124)	-	-	PIT, SSCs
United Kingdom	Percentage of list price	List price multiplied by percentage determined by CO_2 emissions. These range from 0 to 35%.	-	-	PIT, SSCs
United States	Fair-market value rule [default rule] Two components: 1. Percentage of lease price (this is the general rule- other rules can apply). 2. Cost of fuel per km	1. Proportion of km driven for personal use (substantiated by a logbook) multiplied by what a lease price would be at third party length. 2. Cost of fuel per km; either measured at employer costs or at USD 0.055 per mile.	Three alternative methods are allowed: 1. Annual lease value rule (deemed fair market value may be used): compute lease value as 25 percent of vehicle's fair market value, plus USD 500 + USD 0.055 per personal mile driven. Deemed fair market value may be calculated as: (1) If vehicle is purchased, the employer's cost of purchasing the vehicle, or (2) If vehicle is leased, one of the following: a. The manufacturer's invoice price (including options) plus 4%; b. The manufacturer's suggested retail price, less 8% (including expenses); or c. The retail value as reported by a nationally recognised pricing source that regularly reports new or used automobile retail values. 2. Cents-per-mile rule: for vehicles valued below a maximum amount, USD 0.555 per mile. Up to USD 0.055 may be deducted if employer does not provide fuel; or 3. Commuting rule: for vehicles used only for commuting, $1.50 per one-way commuting trip.		PIT, SSCs
South Africa	Two components: 1. Percentage of cost price; reduced by 2. Deductions for business usage	1. 3.5% of determined value; 80% of which is taxable 2. At year-end the benefit is reduced by proportion of business travel (substantiated by a logbook).		If the employee pays fuel costs, the benefit is reduced by a costs-per-km scale	PIT

Source: OECD, based on questionnaire responses from each country.

Table A2: Deductibility of employee-paid commuting expenses

	Type of system	Rate or amount of deduction	Special conditions or exceptions
Australia	Not deductible	-	-
Austria	Flat rate deduction, regardless of type of transport used	Lump-sum EUR 291 per year. Additional deductions (Pendlerpauschale) based on distance from work and availability of public transport (PT): Distance (km) / Kleine (PT available) / Grosse (PT unavailable) 02-20 / - / 372 20-4 / 69 / 1476 40-60 / 135 / 2568 60+ / 2016 / 3	-
Belgium	Either: 1. Deductible in lump-sum deduction or 2. Actual expenses	1. Lump-sum deduction based on employee's income according to a progressive rate system (this covers all professional expenses): Basis of calculation (EUR) / Professional expenses lower limit / above limit 10% 5% 3% Home-work km / Additional lump sum expenses 100-125 >125 / 175 2. Actual cost: for commuting with a private vehicle, the deduction is limited to EUR 0.15 per km; for commuting via public transport or carpooling, full deduction is available	*1. The basis of calculation is gross taxable income minus social contributions. Additional deductions are available depending on the distance between the employee's home and work place 2. In the absence of proof, costs of public transport and carpooling are deductible at the rate of EUR 0.15 per km up to a maximum home-work distance of 100 km
Canada	Not deductible	-	A non-refundable tax credit is available for long-term and ongoing short-term public transit passes.
Denmark	Per km allowance regardless of type of transport used	DKK 2 (EUR 0.27) per km (25-100 km per day) DKK 1 (EUR 0.13) per km (100+ km per day)	No reimbursement is made for the first 24 km travelled each day. Additional deductions apply for crossing the Great Belt, the Øresund Bridge. Increased deductions are available for taxpayers living in peripheral municipalities or for lower income households.
Estonia	Not deductible	-	-
Finland	Deductible at the cost of lowest commuting cost regardless of means of transport used	Lowest commuting cost is deductible over EUR 600 and up to EUR 7 000 per year. Costs of commuting by car are deductible at EUR 0.24 per km in limited circumstances. Per km rules apply to bikes, motorbikes, and mopeds in some instances.	Deductions must be for lowest cost form of commuting; which will often be the cost of an ongoing or long-term public transport ticket. Cars may be used if there is no public transport available for at least 3 km of the commute; or the wait for public transport will be over 2 hours per work day; or night work applies. Expense rules and per km rates apply for motorbikes (0.15 per km), mopeds (0.08 per km) and bicycles (EUR 80 per year).
France	A flat rate deduction applies for professional expenses regardless of type of transport used. Taxpayers can elect to deduct actual costs, or costs based on a kilometric scale.	Flat rate deduction: 10% of labour income. Kilometric scale: Varies based on power of the vehicle and the distance travelled (d = distance): CVs / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / 13 <5 000 km / d*0.405 / d*0.487 / d*0.536 / d*0.561 / d*0.587 / d*0.619 / d*0.635 / d*0.668 / d*0.681 / d*0.717 / d*0.729 -20 000 km / (d*0.242) +818 / (d*0.274) +1063 / (d*0.3) +1180 / (d*0.316) +1223 / (d*0.332) +1278 / (d*0.352) +1338 / (d*0.368) +1338 / (d*0.391) +1383 / (d*0.41) +1358 / (d*0.426) +1458 / (d*0.444) +1423 >20 000 km / d*0.283 / d*0.327 / d*0.359 / d*0.377 / d*0.396 / d*0.419 / d*0.435 / d*0.46 / d*0.478 / d*0.499 / d*0.515 If actual costs are deducted, employees can only make deductions for expenses up to 40 km from his place of work (in the absence of special reasons).	

	Type of system	Rate or amount of deduction	Special conditions or exceptions
Germany	Per km allowance	EUR 0.30 per km between place of residence and place of work	An upper limit of EUR 4500 per year applies. An allowance of EUR 1 000 per year is available without additional documentation for work related expenses such as commuting, training, clothing, or equipment.
Hungary	Not deductible		Some mandatory reimbursements apply.
Italy	Not deductible	-	-
Japan	Deductible	Employment income deduction applies based on salary. Specific expenses may be deducted if these are in excess of the employment income deduction.	No deduction applies to social security payments (pension, health insurance, and labour premiums). Actual cost is used for public transport; reasonable cost is used for private transport.
Luxembourg	Deductible at rate set by reference to home – work distance	Ranges from EUR 396 (less than 4 km) to EUR 2 970 (30 or more km)	-
Mexico	Not deductible	-	-
Netherlands	Not deductible	-	Public transport is deductible between EUR 428 and EUR 2 001 per year (determined by distance between their residence and place of work). This applies only if the distance is more than 10 km.
New Zealand	Not deductible	-	-
Norway	Per km allowance regardless of type of transport used	NOK 1.5 (EUR 0.19) (less than 50 000 km per year) NOK 0.7 (EUR 0.09) more than 50 000 km per year)	Costs are only deductible above a threshold of NOK 13 950 (EUR 1 775.56) (implying a distance of over 20 km from the workplace).
Poland	Flat rate deduction regardless of type of transport used	Employee residence: Inside admin. area — Amount of monthly deduction: PLN 111.25 (EUR 26) — Annual limit: 1 workplace: PLN 1335; >1 work place: - Employee residence: Outside admin. area — Amount of monthly deduction: PLN 139.06 (EUR 33) — Annual limit: 1 workplace: PLN 1689; >1 work place: -	If public transport costs are above this, these can be deducted if evidenced by individual periodic tickets.
Portugal	Not deductible	-	-
Slovakia	Not deductible	-	-
Slovenia	Not deductible	-	Mandatory reimbursements apply.
Spain	Not deductible	-	-
Sweden	Cost; a per-km allowance applies to cars	Per km allowance (cars): SEK 1.85 (EUR 0.21) per km	Only expenses in excess of SWE 10 000 are deductible. For cars, the home-work distance must be > 5 km and save 1 hr by travelling by car.
Switzerland	Public transport expenses are deductible up to the cost of an annual subscription; if unavailable, expenses for a private vehicle can be deducted; lump-sum deduction available for bicycles	Expenses for private vehicles are made at CHF 0.70 (EUR 0.58) per km; this can only be claimed by the driver of the vehicle. Lump-sum deduction of CHF 700 for bicycles (EUR 579)	
United Kingdom	Not deductible	-	-
United States	Not deductible	-	-
South Africa	Not deductible	-	-

Source: OECD, based on questionnaire responses from each country.

Table A3: Tax treatment of employer-paid public transport

	Type of system	Tax applied	Special conditions or exceptions
Australia	Taxable	Income tax	-
Austria	Exempt	-	The employee must be eligible for a Pendlerpauschale to qualify for the exemption
Belgium	Taxable if actual expenses deducted; exempt if lump-sum deduction.	Income tax applies in some cases. Social security taxes are not payable.	Dependent on treatment of commuting expenses (see above)
Canada	Taxable	Income taxes and Canadian Pension Plan contributions apply	-
Denmark	Exempt	-	No deduction can be claimed in respect of commuting expenses.
Estonia	Taxable	Income taxes & social security contributions	-
Finland	Partially exempt	Income tax.	First EUR 300 of an individual travelling ticket is tax exempt; from EUR 600 to EUR 3 400 is also tax exempt.
France	Exempt	-	A 50% mandatory reimbursement applies to public transport. Reimbursements in excess of this are not taxed.
Germany			
Hungary	Dependent on location of employee's residence relative to workplace	Income tax applies in some cases.	If the employee commutes from outside an administrative boundary, compensation for public transport expenses is tax free. Otherwise, personal income tax applies.
Italy	Taxable		-
Japan	Exempt up to minimum threshold	Income tax applied after costs reach JPY 10 0000 (EUR 960). No exemption for social security taxes.	-
Mexico	Dependent on is the subsidy method	Income tax applies in some cases	The ITL grants a PIT exemption for social security. Employer paid subsidies for public transport and other fringe benefits are considered to be social security (previsión social). To be exempt, these benefits must be given in a general manner through labour contracts. The exemption is limited to 7 times the annual minimum wage (159 253 MXN in the Federal District). When the sum is higher the amount of exempt income is limited to 1 annual minimum wage (22 750 MXN). Total income cannot be less than 7 minimum wages.
Netherlands	Exempt	-	-
New Zealand	Taxable	Income tax.	An exemption for low-value benefits may apply. This is currently set at a total of benefits less than NZD 1 200 (EUR 696) per employee per year.
Norway	Taxable	Income taxes & social security contributions	-
Poland	Taxable	Income tax.	If the employer is required by law to reimburse commuting expenses, this benefit is not taxable.
Portugal	Exempt		Exempt if the allowance is a general rule in the company
Slovakia	Exempt	-	-
Slovenia	Exempt	-	Mandatory reimbursements apply.
Spain	Exempt up to maximum level	Income tax payable above maximum level	Benefits under the value of EUR 1500 are exempt from tax.
Sweden	Taxable	Income taxes & social security contributions	-
Switzerland	Taxable	Income tax.	Taxable if made in cash.
United Kingdom	Taxable	Income tax.	May be exempt if a bus service supported by an employer is used.
United States	Exempt up to a maximum level	Above the maximum level, income tax and social security contributions apply	Benefits under the value of USD 125 (EUR 96) per month are exempt from tax.
South Africa	Exempt	-	-

Source: OECD, based on questionnaire responses from each country.

ANNEX B: BENCHMARK PARAMETERS AND SCENARIO MODELLED

Benchmark assumptions

The chosen benchmark rate for the fixed costs of vehicle use is intended to include the costs of insurance, depreciation, financing, registration, and other taxes, expressed as a percentage of vehicle value. The estimated rate is intended to represent these costs on average across OECD countries. If it were set on a per country basis, the costs applying in that country should instead be used.

The depreciation cost is the largest component of the fixed costs. It represents the share of the vehicle's original cost that is effectively "used up" in each period. While depreciation rates vary across vehicle types, for simplicity, a single rate of 24.5% was used across all vehicles, by reference to the range of estimates found in the studies summarised in Table B1. The depreciation profile of a vehicle tends to be sharp; most of the value loss occurs in the first few years of the vehicles' life. For this reason, many countries use a declining balance depreciation profile for their tax depreciation charges claimed by companies (though not in calculating the taxable benefit for use of a company car).

Table B1: Depreciation rates from literature and benchmark assumption chosen (%)

Study	Year	Declining balance depreciation rate (%)
Gellatly et al.	2007	23.9
Patry	2007	28.7
Tanguay	2005	30.3
Storchman	2004	30.67
Dunham	2003	20-37
Gellatly et al.	2002	23.8
Hulten	1996	30-33
Wykoff	1989	33
Peles	1988	24-28.1
Ackerman	1973	31

Source: OECD table based on sources noted.

A longer time-series study by the U.S Bureau of Economic Analysis used new-car and used-car price data to estimate an average depreciation pattern for automobiles in the United States (U.S Department of Commerce, Bureau of Economic Analysis, 2003). Rather than estimating a geographic depreciation profile this analysis found depreciation rates of 17.92% of original cost in the first year of ownership, 23.18% in the second year, 9.38% in the third, and 8.99% in the fourth.

The depreciation rate of private vehicles is likely to be slower than that of business vehicles, given the higher distance driven in business vehicles. While the studies above primarily relate to the depreciation of business vehicles, this has not been explicitly taken into account due to the degree of variation in these studies and the range of estimates for depreciation costs that were used in the lower-bound, midpoint and upper benchmark estimates.

The other fixed components of the benchmark were estimated at 9% in total:

- Insurance costs (4% of list value) were set by reference to cost studies for representative vehicles by the American, Canadian, and British Automobile Associations.

- Registration fees (1%). Taxes payable on ownership were included in the Polk dataset. For simplicity and due to data constraints, the same estimate is used for all countries and will be an overestimate for some (while at the same time underestimating others). For example, U.S. data indicates that registration costs in the United States are around 0.6% of car value.

- Financing costs (4%): the cost of financing differs between individuals depending on their circumstances, including the type of finance for the vehicle and the respective interest rates that would apply (as either interest paid on debt or foregone interest earned on savings).

Both subcomponents of the variable component of the benchmark were estimated as a cost per kilometre. The cost of repairs and maintenance were estimated based on average costs set out by the American Automobile Association (2011) and rounded to the nearest cent – EUR 0.04 per kilometre travelled. Fuel costs per litre were estimated based on the type of fuel used by a vehicle, its CO_2 rating (both provided by Polk) and the consumer cost of fuel in each country (IEA, 2010).

Scenario modelled

Information on CO_2 ratings and list price was absent for a small proportion of the unit level data obtained from Polk. This information was estimated by reference to the same unit record for the prior or subsequent year, or any other year or other unit level records for the same model. Rarely, missing values were estimated by reference to a similar model and engine type. 80% of company cars were included in the calculation, to allow for the fact that a number of company vehicles may be used entirely for business purposes. To reflect the fact that many private purchasers are able to negotiate a lower price, list price less a 5% discount was used in the calculation of the benchmark benefit.

A range of studies, summarised in Table B2, estimate the distance driven by company cars. They range from 20 000 to 36 000 kilometres per year. Estimates of the proportion of travel for business use range from 32% to 39%. The scenario modelled assumed that distance driven was 20 000 kilometres per year (an average of 54.8 kilometres per day) for personal purposes and a further 10 000 kilometres for work purposes. The sensitivity of the fiscal costs to this assumption was also tested.

Table B2: Number of kilometres driven per year

Country	Study	Year	Distance driven (km)	
			Company cars	Private cars
Australia	Collingwood et al.	1997	30 000	10 000
Belgium	Dewitte-Macharis	2010	33 000	20 000
	Cornelis et al.	2009	32 000	20 000
	Vacature, as cited in Scott et al (2012)	2007	36 000	16 700
	Zwerts and Nuyts	2004	30 000	16 500
Israel	Cohen	2009	36 500	23 725
	Bureau of Statistics, as cited in Scott et al (2012)	2008	34 000	16 000
Netherlands	Berning	2009	26 600	15 650
	Graus and Worrell	2008	31 000	16 500
	Wilmink et al.	2002	31 348	16 435
United Kingdom	National Travel Survey	2010	30 883	12 730
	Lynn & Lockwood	1998	20 000	7 000

Source: OECD table based on sources noted.

ANNEX C: TAXABLE BENEFIT FOR DIFFERENT CO_2 RATINGS IN EACH COUNTRY

Fig C1: Average excess benefit (by CO2 rating) in Australia

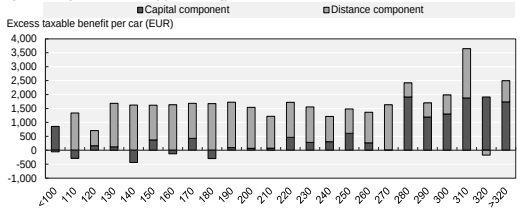


Fig C2: Number of company cars (by CO2 rating) in Australia

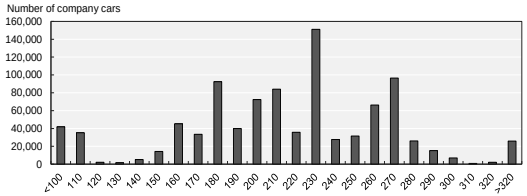


Fig C3: Taxable benefit (by CO2 rating) in Australia

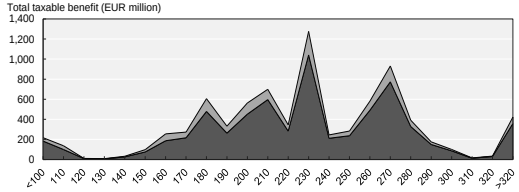


Fig C4: Average excess benefit (by CO2 rating) in Austria

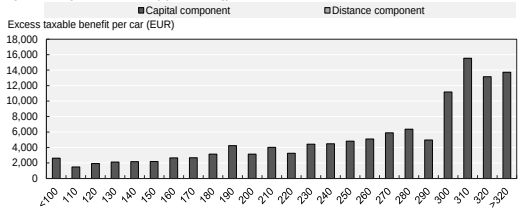


Fig C5: Number of company cars (by CO2 rating) in Austria

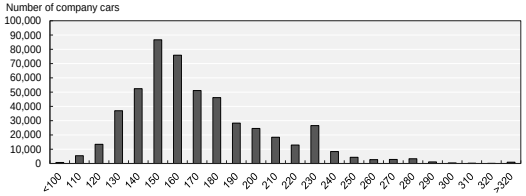


Fig C6: Taxable benefit (by CO2 rating) in Austria

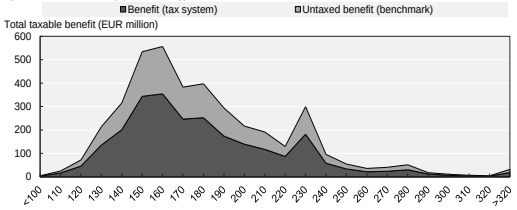


Fig C16: Average excess benefit (by CO2 rating) in Estonia

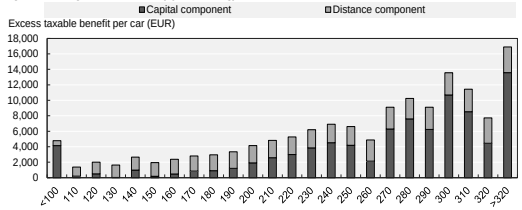


Fig C17: Number of company cars (by CO2 rating) in Estonia

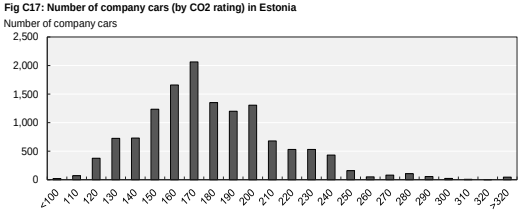


Fig C18: Taxable benefit (by CO2 rating) in Estonia

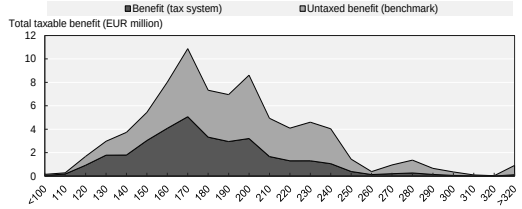


Fig C19: Average excess benefit (by CO2 rating) in Finland

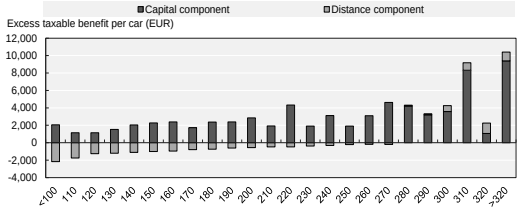


Fig C20: Number of company cars (by CO2 rating) in Finland

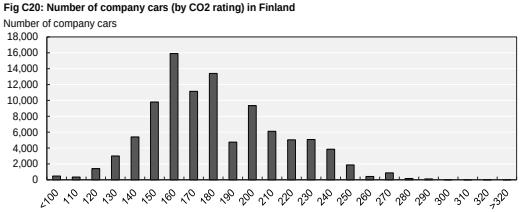


Fig C21: Taxable benefit (by CO2 rating) in Finland

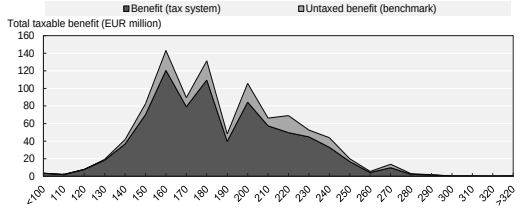


Fig C22: Average excess benefit (by CO2 rating) in France

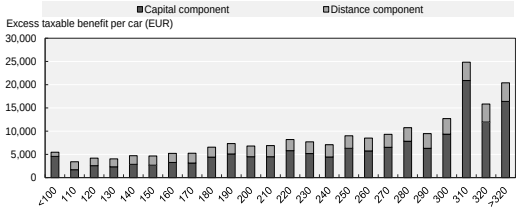


Fig C23: Number of company cars (by CO2 rating) in France

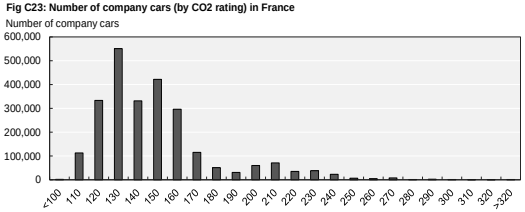


Fig C24: Taxable benefit (by CO2 rating) in France

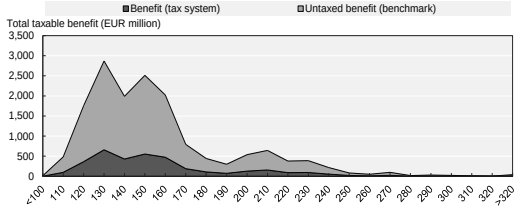


Fig C7: Average excess benefit (by CO2 rating) in Belgium

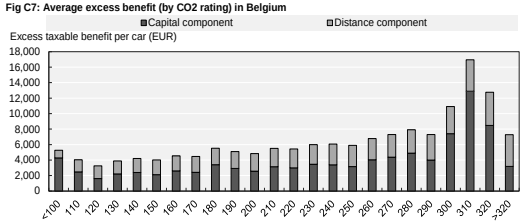


Fig C8: Number of company cars (by CO2 rating) in Belgium

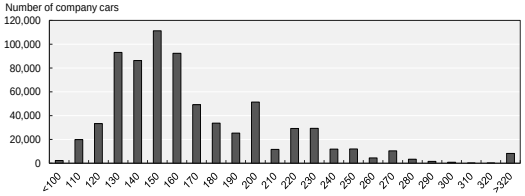


Fig C9: Taxable benefit (by CO2 rating) in Belgium

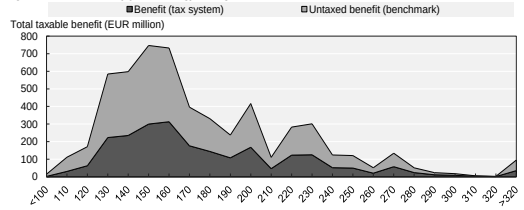


Fig C10: Average excess benefit (by CO2 rating) in Canada

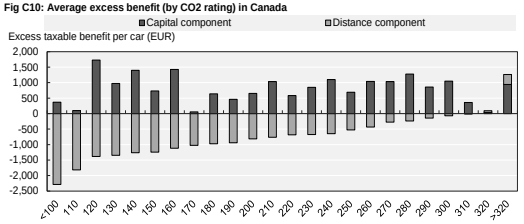


Fig C11: Number of company cars (by CO2 rating) in Canada

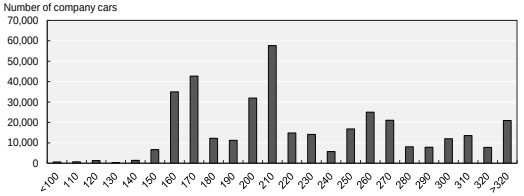


Fig C12: Taxable benefit (by CO2 rating) in Canada

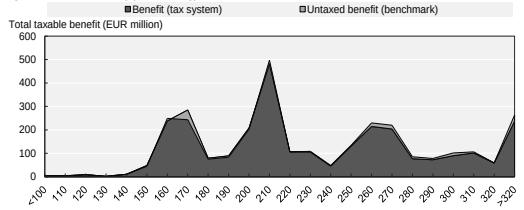


Fig C13: Average excess benefit (by CO2 rating) in Denmark

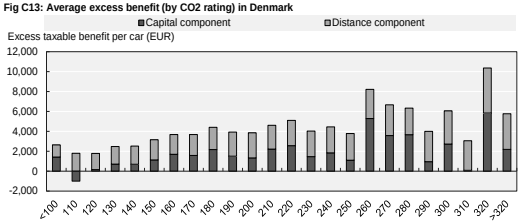


Fig C14: Number of company cars (by CO2 rating) in Denmark

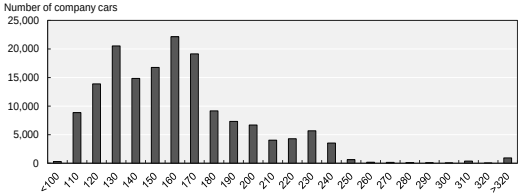


Fig C15: Taxable benefit (by CO2 rating) in Denmark

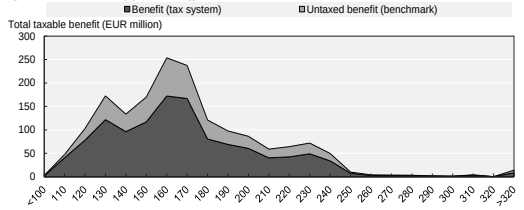


Fig C25: Average excess benefit (by CO2 rating) in Germany

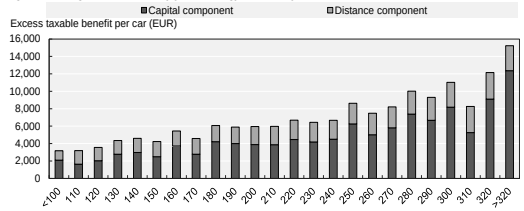


Fig C26: Number of company cars (by CO2 rating) in Germany

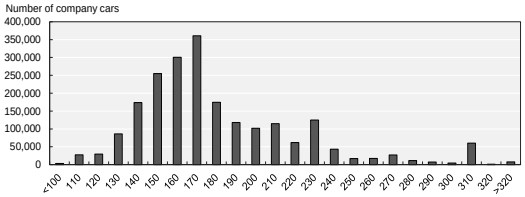


Fig C27: Taxable benefit (by CO2 rating) in Germany

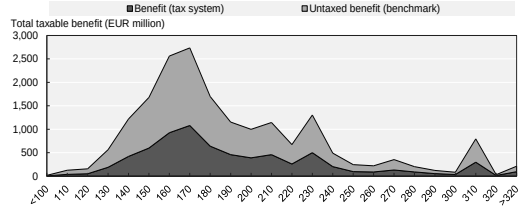


Fig C28: Average excess benefit (by CO2 rating) in Hungary

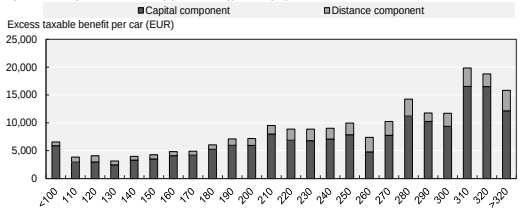


Fig C29: Number of company cars (by CO2 rating) in Hungary

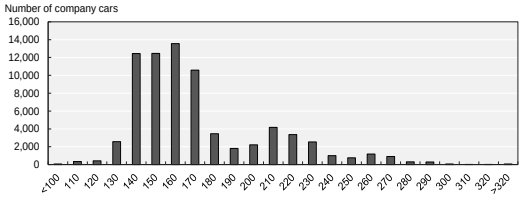


Fig C30: Taxable benefit (by CO2 rating) in Hungary

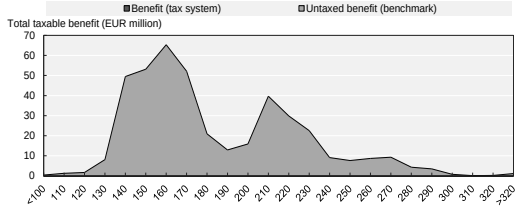


Fig C31: Average excess benefit (by CO2 rating) in Iceland

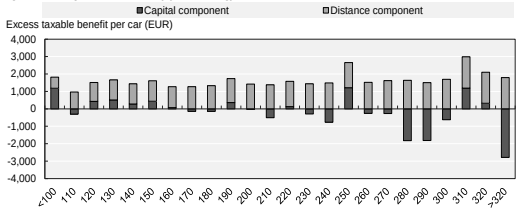


Fig C32: Number of company cars (by CO2 rating) in Iceland

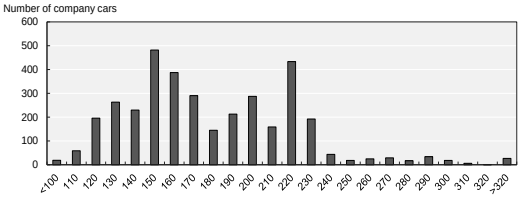


Fig C33: Taxable benefit (by CO2 rating) in Iceland

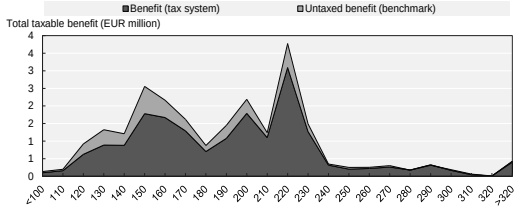


Fig C34: Average excess benefit (by CO2 rating) in Italy

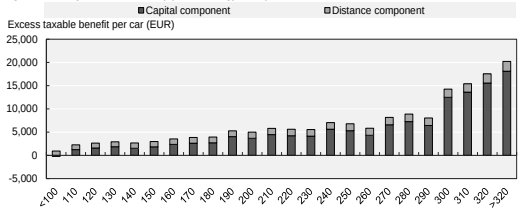


Fig C35: Number of company cars (by CO2 rating) in Italy

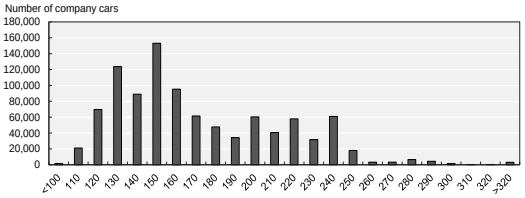


Fig C36: Taxable benefit (by CO2 rating) in Italy

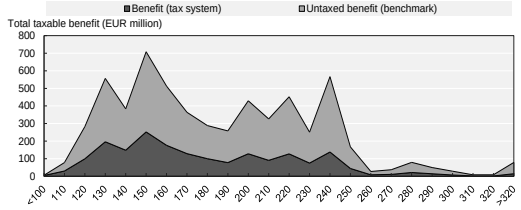


Fig C37: Average excess benefit (by CO2 rating) in Luxembourg

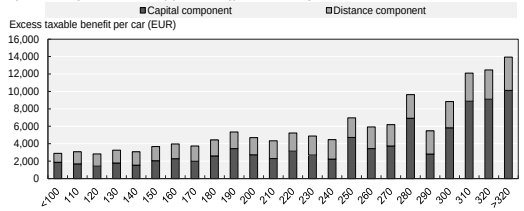


Fig C38: Number of company cars (by CO2 rating) in Luxembourg

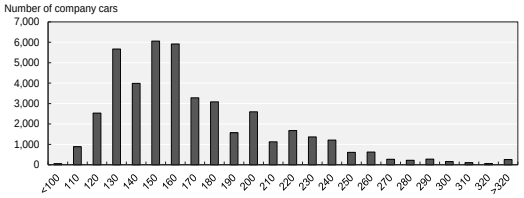


Fig C39: Taxable benefit (by CO2 rating) in Luxembourg

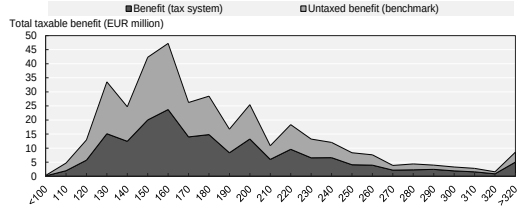


Fig C40: Average excess benefit (by CO2 rating) in Mexico

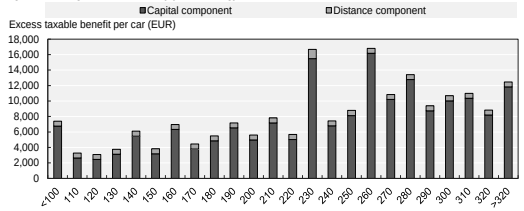


Fig C41: Number of company cars (by CO2 rating) in Mexico

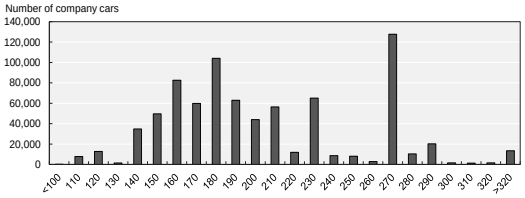


Fig C42: Taxable benefit (by CO2 rating) in Mexico

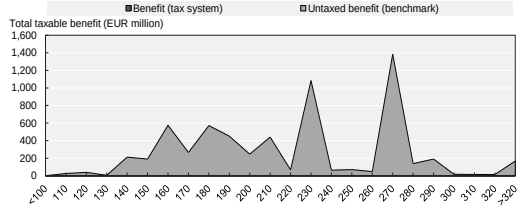


Fig C43: Average excess benefit (by CO2 rating) in the Netherlands

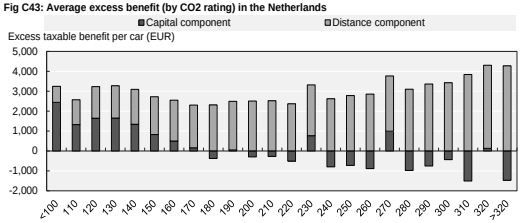


Fig C44: Number of company cars (by CO2 rating) in the Netherlands

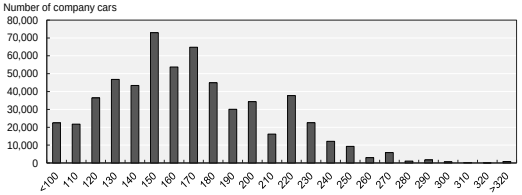


Fig C45: Taxable benefit (by CO2 rating) in the Netherlands

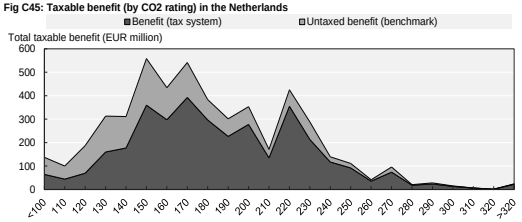


Fig C46: Average excess benefit (by CO2 rating) in New Zealand

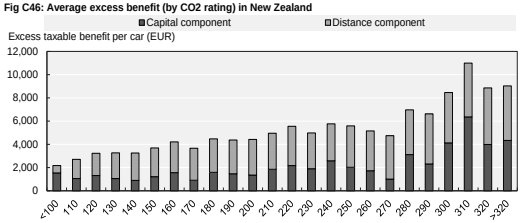


Fig C47: Number of company cars (by CO2 rating) in New Zealand

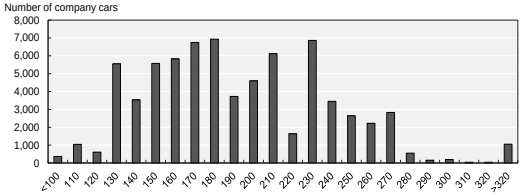


Fig C48: Taxable benefit (by CO2 rating) in New Zealand

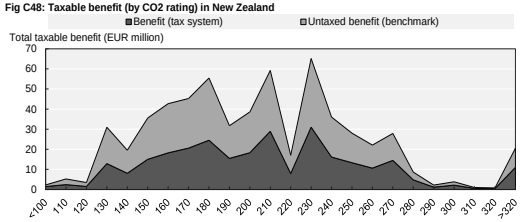


Fig C49: Average excess benefit (by CO2 rating) in Norway

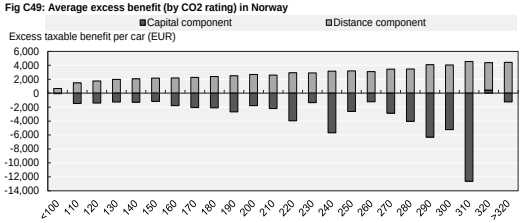


Fig C50: Number of company cars (by CO2 rating) in Norway

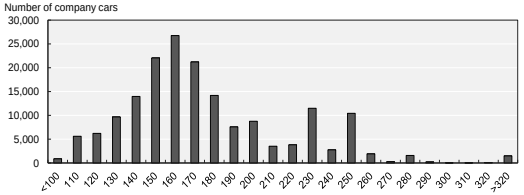


Fig C51: Taxable benefit (by CO2 rating) in Norway

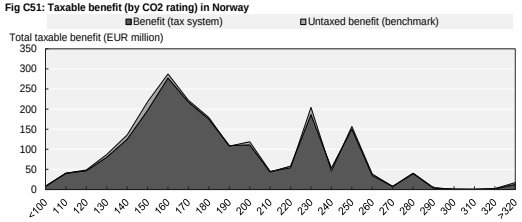


Fig C52: Average excess benefit (by CO2 rating) in Portugal

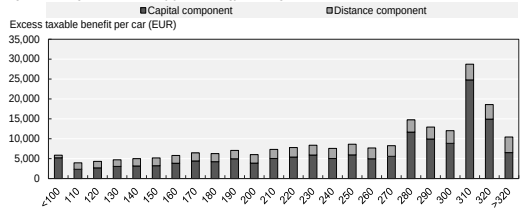


Fig C53: Number of company cars (by CO2 rating) in Portugal

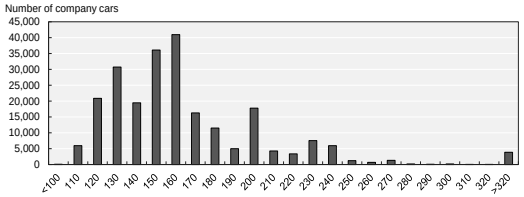


Fig C54: Taxable benefit (by CO2 rating) in Portugal

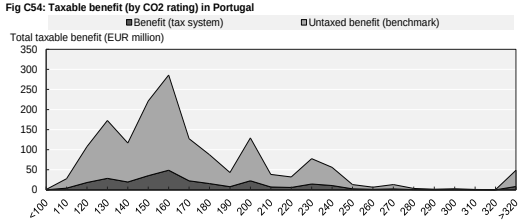


Fig C55: Average excess benefit (by CO2 rating) in the Slovak Republic

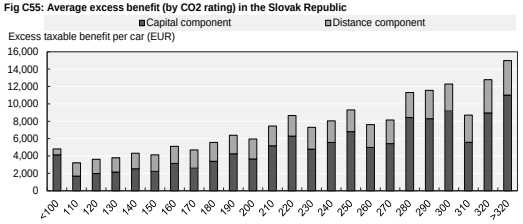


Fig C56: Number of company cars (by CO2 rating) in the Slovak Republic

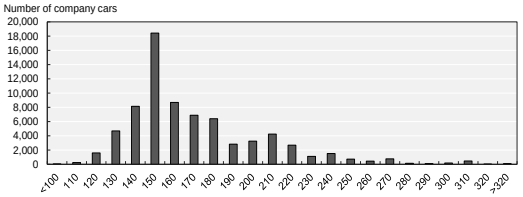


Fig C57: Taxable benefit (by CO2 rating) in the Slovak Republic

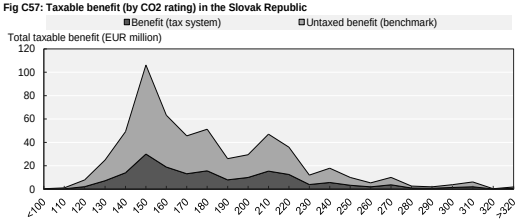


Fig C58: Average excess benefit (by CO2 rating) in Slovenia

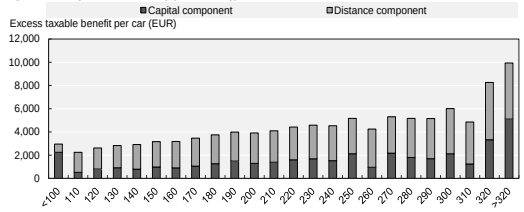


Fig C59: Number of company cars (by CO2 rating) in Slovenia

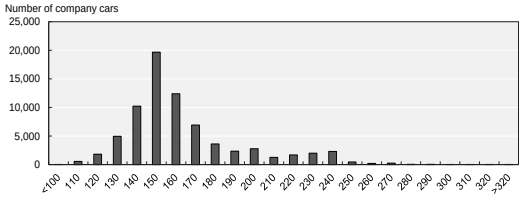


Fig C60: Taxable benefit (by CO2 rating) in Slovenia

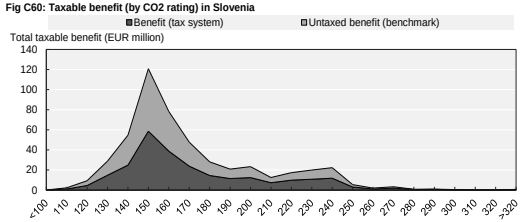


Fig C61: Average excess benefit (by CO2 rating) in Spain

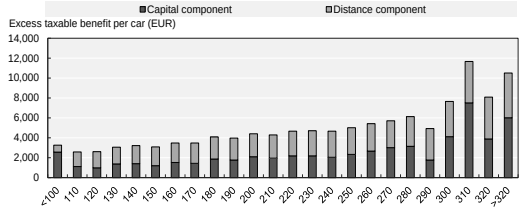


Fig C62: Number of company cars (by CO2 rating) in Spain

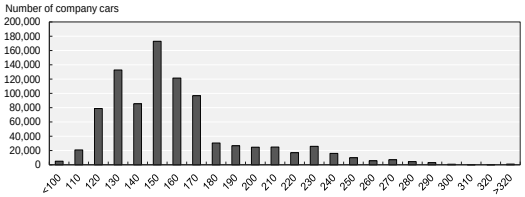


Fig C63: Taxable benefit (by CO2 rating) in Spain

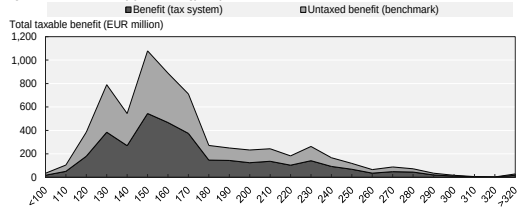


Fig C64: Average excess benefit (by CO2 rating) in Sweden

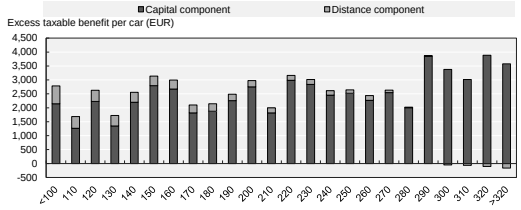


Fig C65: Number of company cars (by CO2 rating) in Sweden

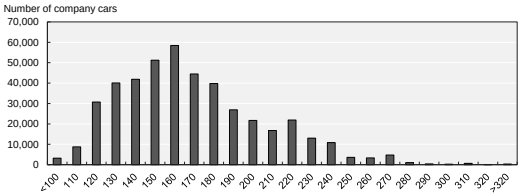


Fig C66: Taxable benefit (by CO2 rating) in Sweden

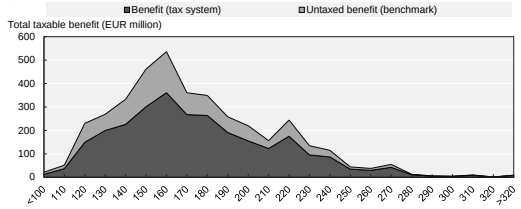


Fig C67: Average excess benefit (by CO2 rating) in Switzerland

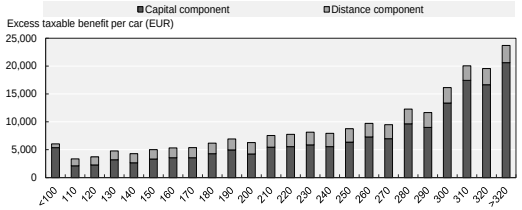


Fig C68: Number of company cars (by CO2 rating) in Switzerland

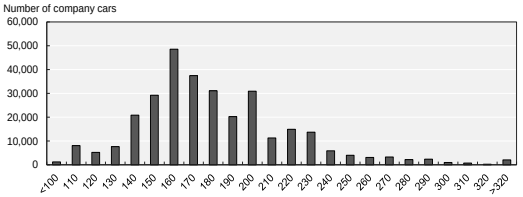


Fig C69: Taxable benefit (by CO2 rating) in Switzerland

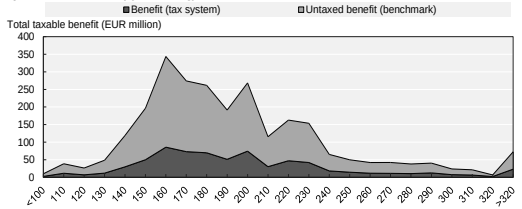


Fig C70: Average excess benefit (by CO2 rating) in the United Kingdom

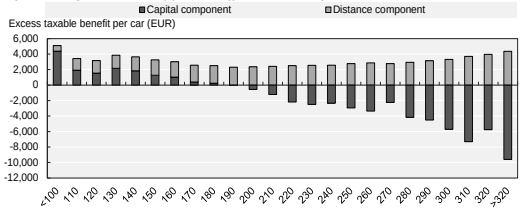


Fig C71: Number of company cars (by CO2 rating) in the United Kingdom

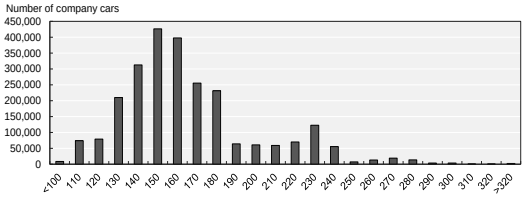


Fig C72: Taxable benefit (by CO2 rating) in the United Kingdom

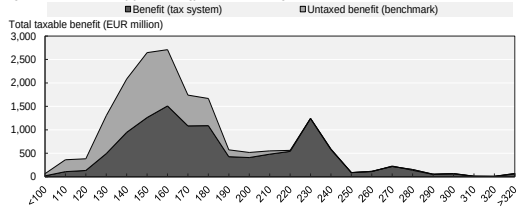


Fig C73: Average excess benefit (by CO2 rating) in the United States

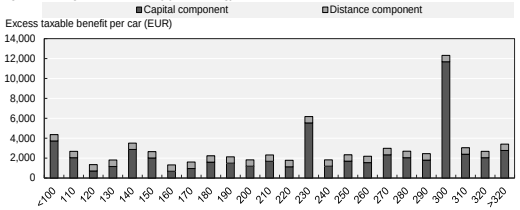


Fig C74: Number of company cars (by CO2 rating) in the United States

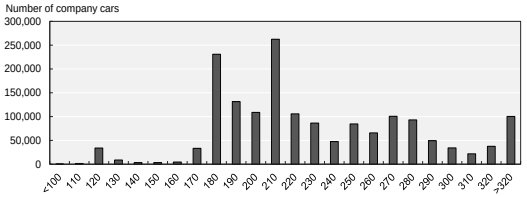


Fig C75: Taxable benefit (by CO2 rating) in the United States

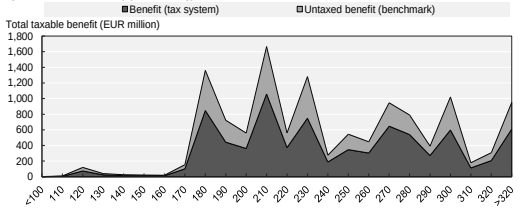


Fig C76: Average excess benefit (by CO2 rating) in South Africa

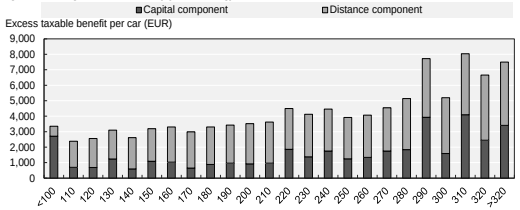


Fig C77: Number of company cars (by CO2 rating) in South Africa

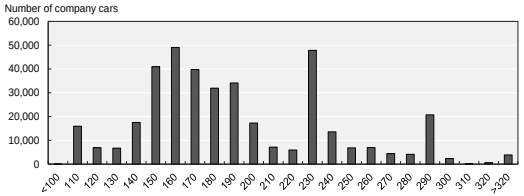
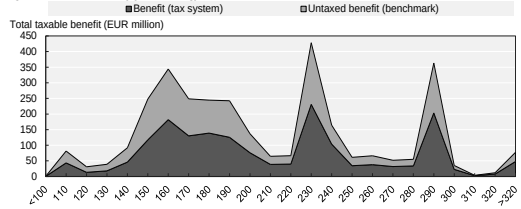


Fig C78: Taxable benefit (by CO2 rating) in South Africa



Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.

ANNEX D: SENSITIVITY TESTING OF TAX SYSTEM AND BENCHMARK ESTIMATES (EUR, MILLIONS)

		3 year useful life								4 year useful life							
		Midpoint	Capital costs		Distance cost		Distance driven		Appnt	Midpoint	Capital costs		Distance cost		Distance driven		Appnt
		Midpoint	*High*	*Low*	*High*	*Low*	*High*	*Low*	*67%*	*Midpoint*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*67%*
AUS	Tax system benefit	6,595	6,595	6,595	6,717	6,441	6,906	5,810	6,595	6,595	6,595	6,595	6,717	6,441	6,906	5,810	6,595
	Benchmark benefit	8,032	8,675	7,243	8,337	7,727	8,558	7,506	6,056	8,032	8,675	7,243	8,337	7,727	8,558	7,506	6,056
	Tax on excess	553	801	249	624	495	636	653	-207	553	801	249	624	495	636	653	-207
AUT	Tax system benefit	2,509	2,509	2,509	2,670	2,348	2,758	2,260	2,509	3,344	3,344	3,344	3,558	3,131	3,678	3,011	3,344
	Benchmark benefit	3,982	4,350	3,552	4,143	3,821	4,231	3,733	2,987	4,848	5,170	4,436	5,062	4,635	5,182	4,515	3,677
	Tax on excess	558	698	395	558	558	558	558	181	570	692	414	570	570	570	570	126
BEL	Tax system benefit	2,319	2,319	2,319	2,319	2,319	2,319	2,319	2,319	3,060	3,060	3,060	3,060	3,060	3,060	3,060	3,060
	Benchmark benefit	5,657	6,165	5,061	5,888	5,426	6,025	5,290	4,261	7,059	7,493	6,490	7,376	6,742	7,570	6,548	5,387
	Tax on excess	2,033	2,342	1,670	2,173	1,892	2,256	1,809	1,183	2,435	2,699	2,088	2,628	2,242	2,746	2,124	1,417
CAN	Tax system benefit	2,907	2,907	2,907	2,907	2,907	3,177	2,636	2,907	3,970	3,970	3,970	3,970	3,970	4,339	3,601	3,970
	Benchmark benefit	2,966	3,217	2,668	3,084	2,848	3,177	2,755	2,259	3,706	3,920	3,423	3,868	3,545	3,997	3,416	2,858
	Tax on excess	21	110	-84	63	-21	0	42	-229	-93	-18	-194	-36	-150	-121	-65	-393
DNK	Tax system benefit	1,201	1,201	1,201	1,201	1,201	1,201	1,201	1,201	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526
	Benchmark benefit	1,713	1,884	1,513	1,764	1,662	1,795	1,631	1,251	2,110	2,257	1,919	2,179	2,041	2,223	1,997	1,557
	Tax on excess	287	383	175	316	258	333	241	28	327	410	220	366	289	390	264	17
EST	Tax system benefit	33	33	33	33	33	33	32	33	55	55	55	55	55	55	54	55
	Benchmark benefit	80	87	72	84	76	87	73	62	116	122	109	124	109	128	105	93
	Tax on excess	11	13	9	12	10	12	9	7	14	16	13	16	13	17	12	9
FIN	Tax system benefit	793	793	793	793	793	863	722	793	1,128	1,128	1,128	1,128	1,128	1,234	1,022	1,128
	Benchmark benefit	952	1,045	844	983	920	1,004	899	704	1,232	1,309	1,129	1,278	1,185	1,310	1,153	925
	Tax on excess	76	120	24	91	61	67	84	-42	49	86	0	71	27	36	62	-96
FRA	Tax system benefit	3,579	3,579	3,579	3,579	3,579	3,579	3,579	3,579	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728
	Benchmark benefit	15,714	16,976	14,201	16,514	14,914	16,898	14,530	12,055	19,221	20,310	17,771	20,276	18,166	20,796	17,646	14,914
	Tax on excess	5,133	5,666	4,493	5,471	4,794	5,633	4,632	3,585	6,129	6,590	5,516	6,576	5,683	6,796	5,463	4,308
DEU	Tax system benefit	7,127	7,127	7,127	7,127	7,127	7,127	7,127	7,127	9,684	9,684	9,684	9,684	9,684	9,684	9,684	9,684
	Benchmark benefit	18,787	20,562	16,715	19,468	18,105	19,883	17,691	13,986	23,263	24,792	21,281	24,195	22,330	24,783	21,742	17,536
	Tax on excess	5,166	5,953	4,248	5,468	4,864	5,652	4,681	3,039	6,017	6,694	5,139	6,430	5,604	6,691	5,343	3,479
HUN	Tax system benefit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Benchmark benefit	419	460	370	442	395	437	400	304	585	616	540	625	545	617	553	433
	Tax on excess	158	174	140	167	149	165	151	115	221	233	204	236	206	233	209	164
ISL	Tax system benefit	19	19	19	19	19	19	19	19	36	36	36	36	36	36	36	36
	Benchmark benefit	23	26	21	25	22	24	23	17	37	39	35	39	35	38	36	28
	Tax on excess	2	3	1	3	2	2	2	-1	0	1	-1	1	-1	1	0	-4

		3 year useful life								4 year useful life							
		Midpoint	Capital costs		Distance cost		Distance driven		Appnt	Midpoint	Capital costs		Distance cost		Distance driven		Appnt
		Midpoint	*High*	*Low*	*High*	*Low*	*High*	*Low*	*67%*	*Midpoint*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*67%*
ITA	Tax system benefit	1,899	1,899	1,899	1,899	1,899	1,899	1,899	1,899	2,929	2,929	2,929	2,929	2,929	2,929	2,929	2,929
	Benchmark benefit	5,948	6,340	5,403	6,265	5,631	6,106	5,790	4,369	8,119	8,378	7,623	8,606	7,631	8,362	7,875	6,039
	Tax on excess	2,017	2,213	1,746	2,175	1,860	2,096	1,939	1,231	2,586	2,715	2,339	2,829	2,343	2,707	2,465	1,550
LUX	Tax system benefit	183	183	183	183	183	183	183	183	254	254	254	254	254	254	254	254
	Benchmark benefit	362	396	321	375	348	381	342	267	454	483	416	473	435	481	427	339
	Tax on excess	88	105	68	95	81	98	79	41	99	113	80	108	89	112	85	42
MEX	Tax system benefit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Benchmark benefit	6,284	6,975	5,469	6,537	6,032	6,420	6,149	4,370	7,712	8,296	6,936	8,069	7,355	7,905	7,519	5,398
	Tax on excess	1,440	1,599	1,254	1,498	1,383	1,472	1,409	1,002	1,768	1,902	1,590	1,850	1,686	1,812	1,724	1,237
NLD	Tax system benefit	3,473	3,473	3,473	3,473	3,473	3,473	3,473	3,473	5,125	5,125	5,125	5,125	5,125	5,125	5,125	5,125
	Benchmark benefit	4,990	5,443	4,454	5,176	4,803	5,287	4,692	3,723	6,498	6,868	5,993	6,767	6,229	6,938	6,058	4,919
	Tax on excess	747	970	483	838	655	893	600	123	676	858	428	808	544	893	459	-101
NZL	Tax system benefit	281	281	281	281	281	281	281	281	393	393	393	393	393	393	393	393
	Benchmark benefit	603	650	548	626	580	656	551	472	778	817	725	810	745	853	703	618
	Tax on excess	159	182	131	170	147	184	133	94	190	209	164	206	174	226	153	111
NOR	Tax system benefit	1,981	1,981	1,981	1,981	1,981	1,981	1,981	1,981	2,484	2,484	2,484	2,484	2,484	2,484	2,484	2,484
	Benchmark benefit	2,068	2,271	1,831	2,124	2,012	2,172	1,965	1,517	2,518	2,695	2,291	2,593	2,444	2,659	2,378	1,866
	Tax on excess	42	139	-72	69	15	91	-7	-222	16	100	-93	52	-19	83	-51	-296
PRT	Tax system benefit	280	280	280	280	280	280	280	280	387	387	387	387	387	387	387	387
	Benchmark benefit	1,616	1,751	1,455	1,691	1,541	1,732	1,500	1,232	2,039	2,152	1,886	2,143	1,936	2,200	1,878	1,574
	Tax on excess	668	736	588	706	631	726	610	476	826	883	750	878	775	907	746	594
SVK	Tax system benefit	172	172	172	172	172	172	172	172	241	241	241	241	241	241	241	241
	Benchmark benefit	561	612	501	584	537	598	523	424	714	758	657	748	681	768	660	548
	Tax on excess	112	126	94	118	105	122	101	72	136	148	119	145	126	151	120	88
SVN	Tax system benefit	253	253	253	253	253	253	253	253	330	330	330	330	330	330	330	330
	Benchmark benefit	501	540	454	524	477	543	458	390	645	678	600	678	612	705	585	510
	Tax on excess	134	155	108	146	121	157	111	74	170	188	146	188	153	203	138	97
ESP	Tax system benefit	3,433	3,433	3,433	3,433	3,433	3,433	3,433	3,433	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
	Benchmark benefit	6,585	7,157	5,908	6,877	6,293	7,031	6,139	4,985	8,678	9,143	8,041	9,108	8,249	9,345	8,012	6,674
	Tax on excess	1,166	1,378	916	1,274	1,058	1,331	1,001	574	1,352	1,524	1,116	1,511	1,193	1,598	1,105	610
SWE	Tax system benefit	2,789	2,789	2,789	2,789	2,789	3,019	2,559	2,789	3,684	3,684	3,684	3,684	3,684	3,995	3,372	3,684
	Benchmark benefit	3,924	4,294	3,499	4,066	3,782	4,187	3,661	2,967	4,746	5,075	4,336	4,932	4,559	5,099	4,393	3,635
	Tax on excess	642	852	402	723	562	661	624	101	601	788	369	707	496	625	578	-28
CHE	Tax system benefit	705	705	705	705	705	705	705	705	938	938	938	938	938	938	938	938
	Benchmark benefit	2,612	2,853	2,326	2,709	2,514	2,756	2,467	1,934	3,177	3,386	2,903	3,307	3,048	3,372	2,983	2,378
	Tax on excess	604	680	513	635	573	650	558	389	709	776	623	751	668	771	648	456

		3 year useful life								4 year useful life							
		Midpoint	Capital costs		Distance cost		Distance driven		Appnt	Midpoint	Capital costs		Distance cost		Distance driven		Appnt
		Midpoint	*High*	*Low*	*High*	*Low*	*High*	*Low*	*67%*	*Midpoint*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*67%*
GBR	Tax system benefit	11,108	11,108	11,108	11,108	11,108	11,108	11,108	11,108	17,512	17,512	17,512	17,512	17,512	17,512	17,512	17,512
	Benchmark benefit	17,742	19,282	15,937	18,539	16,944	19,028	16,456	13,543	24,401	25,632	22,711	25,652	23,150	26,478	22,325	19,036
	Tax on excess	2,786	3,433	2,028	3,121	2,451	3,326	2,246	1,022	2,894	3,411	2,184	3,419	2,368	3,766	2,022	640
USA	Tax system benefit	7,893	7,893	7,893	7,893	7,893	8,806	6,811	7,893	10,899	10,899	10,899	10,899	10,899	12,176	9,391	10,899
	Benchmark benefit	12,390	13,565	11,027	12,918	11,862	13,143	11,637	9,264	15,473	16,487	14,169	16,218	14,728	16,542	14,404	11,741
	Tax on excess	1,681	2,120	1,171	1,878	1,483	1,621	1,804	512	1,709	2,088	1,222	1,988	1,431	1,632	1,873	314
SAF	Tax system benefit	1,727	1,727	1,727	1,727	1,727	1,851	1,555	1,727	2,343	2,343	2,343	2,343	2,343	2,511	2,109	2,343
	Benchmark benefit	3,158	3,435	2,837	3,281	3,035	3,397	2,919	2,424	3,843	4,083	3,535	4,012	3,673	4,149	3,537	2,970
	Tax on excess	501	598	388	544	458	541	477	244	525	609	417	584	466	573	500	219
Total	Tax system benefit	63,367	63,367	63,367	63,653	63,049	65,540	60,492	63,367	86,779	86,779	86,779	87,116	86,409	89,658	83,118	86,779
	Benchmark benefit	127,668	139,014	114,229	133,028	122,308	135,556	119,780	95,824	160,006	169,636	147,197	167,474	152,537	171,056	148,955	121,707
	Tax on excess	26,794	31,574	21,129	28,952	24,649	29,303	24,557	13,354	30,491	34,542	25,094	33,525	27,471	34,077	27,206	14,307

Source: OECD calculations of benchmark benefits, taxable benefits and estimated tax expenditures based on exchange rates and estimated company car stock in 2012.