Substantial Variation in the Tax Burden on Private Cars across Europe

Taxes and fees related to the registration, ownership and use of private cars are assessed differently across Europe, and their rates vary significantly. In the study presented in this report, the DIW Berlin analysed private-car taxes in 21 European countries. The annual taxes levied on specific types of cars differ across countries by a factor of up to four, while the various kinds of taxes levied account for extremely diverse shares of the entire car-related tax burden.

Given the importance of taxation systems for market and competitive conditions, the European Commission is seeking to achieve reciprocal alignment of the various systems. The Commission has also proposed that greater importance be given to environmental criteria in the assessment of vehicle-related taxes, but little progress has been made so far in this respect. Efforts to modify and harmonise taxation strategies face numerous obstacles and objections.

Taxes on cars

The diversity of the various taxation systems has made it difficult to date to compile a comparative presentation and assessment of the components of vehicle-related taxes in Europe – the kind of information which is required if numerous transport and competition policy problems are to be tackled. In view of this situation, the German Ministry of Finance commissioned the DIW Berlin with drawing up a systematic overview of the types and rates of vehicle-related taxes being paid in European countries.[1] The resulting study examined the 15 member states of the European Union, Switzerland, Norway, and the four associated countries, Poland, the Czech Republic, Hungary and Slovenia.[2] The following short report analyses the taxes levied in these countries on private cars.

The main types of taxes concerned are:
- one-off charges levied in connection with the purchase and registration of vehicles (turnover tax, registration tax, registration fees);
- taxes levied at regular intervals in connection with ownership or tenure of vehicles (circulation tax, insurance tax);
- taxes levied in connection with the use of vehicles (petroleum tax, turnover tax).

All the countries studied require payment of a one-off tax on the *purchase and first-time registration of a new private car* (cf. table 1). This charge consists of a turnover tax, at least, which is based on the net invoice price in almost all countries but on the net price plus the applicable registration tax in four countries.[3] Turnover tax is the only tax of this kind levied in Sweden and the Czech Republic. In four countries, car owners also pay a moderate fee on registration, while in the other 15 countries they pay a tax on the first-time registration of the car.

At least ten different bases for assessment are in operation in the countries studied. Moreover, these are applied in a variety of combinations.[4] The most important factors are the purchase price of the car and its engine capacity. Seven countries take ecological criteria into account by basing the assessment on fuel consumption, exhaust emission levels or safety features.

In ten countries, registration tax is an ad valorem tax levied either on the net or the gross price of the car. In all of the ten countries that levy an ad valorem tax, the technical characteristics of the vehicle also influence the amount of tax payable. In four countries, this tax is designed as a quantitative tax, in other words it is directly related to technical characteristics. In the extreme case, the registration tax paid allocated to a year for a medium-class vehicle can amount to around euro 3 000. Twelve countries also charge an administration fee of between euro 9 and euro 172.

In almost all of the countries studied, the owner of a registered private car is also obliged to pay *periodic taxes*. Only Poland does not impose a circulation tax on private cars, though since 2001 private owners are no longer taxed in France either.

There are eight different bases of assessment for circulation tax on private cars in the European countries studied, and these are applied in different combinations.[5] Method of propulsion and engine capacity are the

[1] Uwe Kunert, Hartmut Kuhfeld, Stefan Bach and Abdulkerim Keser: 'Europäischer Vergleich der besonderen Steuer- und Abgabensysteme für den Erwerb, das Inverkehrbringen und die Nutzung von Kraftfahrzeugen.' Report prepared on behalf of the German Ministry of Finance. Berlin 2002.

[2] The abbreviations of the country names used in the figures and tables correspond to their international licence plate codes.

[3] Some non-EU countries levy an import duty on private cars. Where these countries do not have a domestic car production industry, basically every vehicle is subject to import tax, which is why import duties have been classified as a registration tax.

[4] In four countries, a calculation based on the technical characteristics of the vehicle (engine rating) is used to create a modified tax base (e.g. fiscal horsepower).

Table 1

Taxes on the Purchase, Registration, Ownership and Use of Private Cars in Europe

	International licence plate code	Turnover tax (%)	Registration tax (R)	Registration fee (RF)	Circulation tax (C)	Insurance tax (% or euro)	Parafiscal charges on insurance premium (%)	Petroleum tax (M)
Austria	A	20	R	RF	C	11	–	M
Belgium	B	21	R	RF	C	9.25	17.85	M
Germany	D	16	–	RF	C	16	–	M
Denmark	DK	25	R	RF	C	50	14	M
Spain	E	16	R	RF	C	6	3.5	M
France	F	19.6	R	–	–	18	15.1	M
Finland	FIN	22	R	–	C	22	–	M
Great Britain	GB	17.5	–	RF	C	5	–	M
Greece	GR	18	R	–	C	10	8.4	M
Italy	I	20	R	RF	C	12.5	14.22	M
Ireland	IRL	21	R	–	C	2	–	M
Luxembourg	L	15[1]	–	RF	C	4	–	M
The Netherlands	NL	19	R	RF	C	7	–	M
Portugal	P	17[2]	R	RF	C	9	3.83	M
Sweden	S	25	–	–	C	–	–	M
Switzerland	CH	7.6	–	RF	C	5	–	M
Norway	N	24	R	RF	C	euro 42	–	M
Poland	PL	22	R	–	–	–	–	M
Czech Republic	CZ	22	–	–	C	–	–	M
Hungary	H	25[3]	R	–	C	–	–	M
Slovenia	SLO	19[4]	R	–	C	6.5	–	M

1 Turnover tax on petrol reduced to 12%. — 2 Turnover tax on diesel reduced to 12%. — 3 Turnover tax on mineral oil reduced to 12%. — 4 Turnover tax on mineral oil increased to 25%.
Sources: European Commission; ACEA; IRF; IBFD; CEA.

characteristics usually considered, with different tax rates often applying depending on the method of propulsion (petrol or diesel engine), while engine capacity, for example, is subject to a progressive rate for each type of engine. Low fuel consumption and low levels of toxicity in exhaust emissions are rewarded by lower tax rates in eight countries. The annual circulation tax for a medium-class vehicle amounts to up to euro 600.

In addition, in 17 of the countries studied, taxes are levied on the premiums for liability insurance. The tax rates applied can amount to up to 50% of the premiums and in some countries are also supplemented by parafiscal charges, so that the burden of tax can amount to almost two thirds of the insurance premium (cf. table 1).

The *government taxes which are directly related to the use of motorised vehicles* concern fuel taxes. These include petroleum tax, other charges levied on mineral oil, and turnover tax (cf. table 2). Petroleum tax and turnover tax are levied in all countries. At current consumer prices of between euro 0.78 and euro 1.24, these taxes account for between 52% and 76% of the price of unleaded Eurosuper petrol. Filling-station prices for diesel range from euro 0.65 to euro 1.26, a share of between 50% and 74% of which is accounted for by the combination of taxes levied. In the 15 EU countries, the tax rate on super petrol currently amounts to between euro 0.33 and euro 0.74, while between euro 0.25 and euro 0.74 is levied on diesel. The tax rates fall within the same range in the other countries studied, too. In addition to petroleum tax, turnover tax of between 7.6% and 25% is levied on the post-tax product price (cf. figure 1).

5 In four countries, the calculated engine rating is also taken into account in the assessment of circulation tax.

Table 2

Fuel Taxes in European Countries

	Consumer prices for Eurosuper petrol including customs duties and taxes	Consumer prices for diesel including customs duties and taxes	Petroleum tax		Turnover tax
			Eurosuper[1]	Diesel[1]	
	In euro per litre				(%)
Austria	0.908	0.741	0.414	0.287	20.0
Belgium	1.029	0.747	0.499	0.295	21.0
Germany	1.100	0.875	0.628	0.443	16.0
Denmark	1.153	0.849	0.538	0.368	25.0
Spain	0.849	0.710	0.396	0.293	16.0
France	1.041	0.785	0.574	0.377	19.6
Finland	1.066	0.779	0.559	0.304	22.0
Great Britain	1.224	1.257	0.742	0.742	17.5
Greece	0.791	0.650	0.334	0.283	18.0
Italy	1.072	0.872	0.520	0.382	20.0
Ireland	0.812	0.756	0.401	0.302	21.0
Luxembourg[2]	0.816	0.645	0.372	0.253	15/12
The Netherlands	1.191	0.813	0.621	0.339	19.0
Portugal[3]	0.890	0.650	0.479	0.272	17/12
Sweden[4]	1.058	0.860	0.475	0.321	25.0
Switzerland	0.900	0.940	0.511	0.525	7.6
Norway	1.240	1.130	0.600	0.493	24.0
Poland	0.850	0.710	0.408	0.287	22.0
Czech Republic	0.780	0.710	0.360	0.271	22.0
Hungary	0.830	0.780	0.360	0.310	12.0
Slovenia	0.790	0.820	0.251	0.257	25.0

As of April 2002. — 1 Including other taxes in Belgium, Germany, France, Greece, the Netherlands, Austria. — 2 Turnover tax on petrol reduced to 12%. — 3 Turnover tax on diesel reduced to 12%. — 4 Petroleum tax consists of CO_2 tax and energy tax.
Sources: European Commission; ACEA; EIEP Sourcebook; IBFD; clever-tanken.de.

Tax burden for selected vehicles

The statistical definitions of the Federal Office for Motor Traffic divide the German passenger-car market into ten segments. The most important of these is the 'lower medium class', which accounts for over a quarter of all new registrations. This segment accounts for a third of the total private car market in the European Union. The mostly commonly registered model in Germany both as regards petrol-engine and diesel-engine cars is the Volkswagen Golf IV, which belongs to the lower medium class and on which the following calculations were based. A distinction is made between petrol-run and diesel-run cars because the tax bases and the amount of tax levied can differ substantially depending on engine type.

The average annual taxes paid over the period of ownership by first-time private owners of new cars are calculated.[6] It is assumed that a car remains in the possession of its first owner for four years.[7] The one-off taxes on purchase and placing in service of the car are spread out over the first four years in accordance with the estimated loss in value of the vehicle.[8] The price differential for new cars across the various countries is taken into account in the calculation of turnover and registration tax.[9]

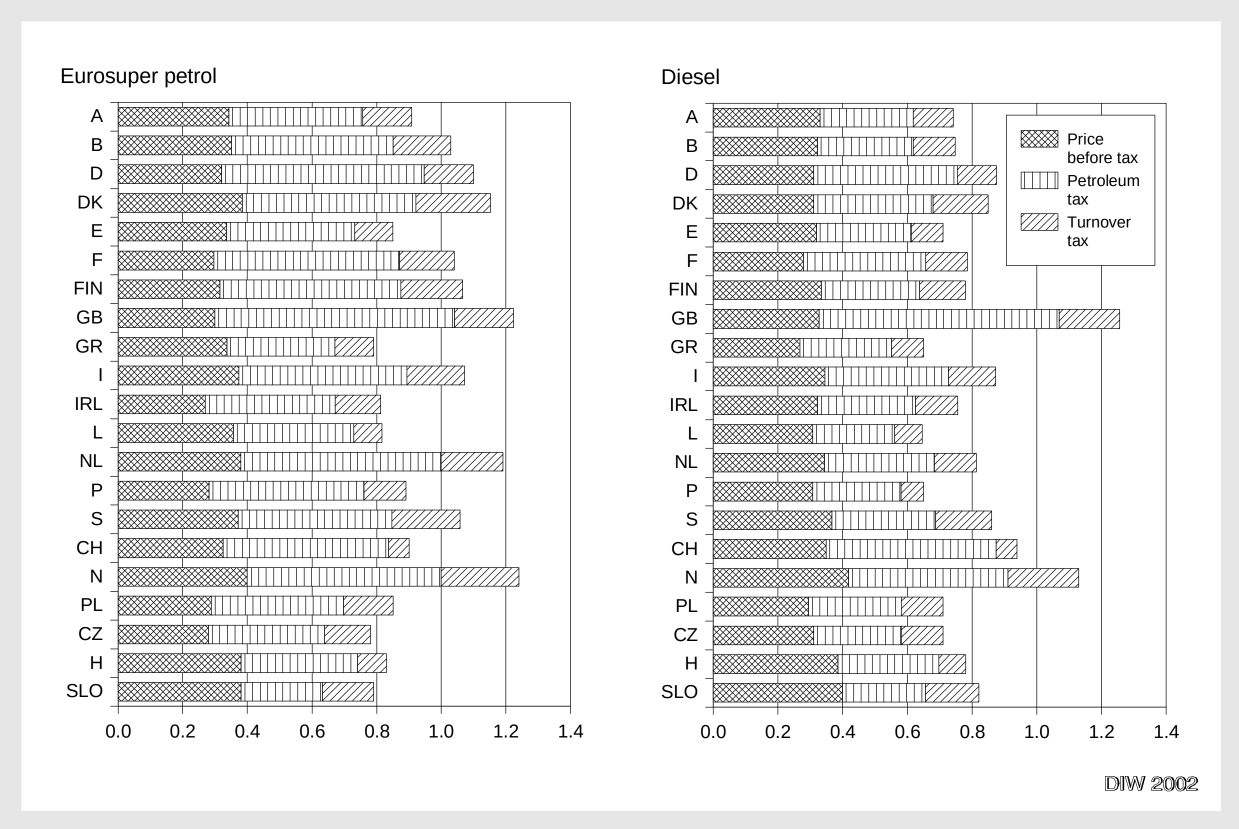
6 Temporary tax concessions, such as those currently granted in Germany under the 1997 Circulation Tax Amendment Act for Euro-4 vehicles and 3-litre cars, are not taken into account.

7 In Germany, an average of just over four years pass before the first transfer of ownership of a privately owned car; cf. Federal Office for Motor Traffic, in: *Statistische Mitteilungen*, Series 1/7, 1999.

8 Where a registration or transfer tax is also levied on further changes in ownership (B, IRL), the full amount of tax imposed is attributed to the first owner. Recurring registration or license plate fees are also attributed to the first owner.

9 Cf. the European Commission's periodic press releases: *http://www.europa.eu.int/comm/competition/car_sector*.

Figure 1
Price Components of Fuel in Europe
In euro per litre



Sources: European Commission; ACEA; EIEP Sourcebook; IBFD; clever-tanken.de.

Cars with petrol engines …

The calculation of the total tax burden incorporates some data concerning the type of car and some assumptions.[10] Thus, based on assumed annual mileage of 15 000 km, the amount of tax paid per annum in the first four years of use on a petrol-run private car from the lower medium class ranges in the 21 countries from euro 770 in Luxembourg to euro 3 700 in Denmark. In the seven countries with the highest tax burden, and especially in Denmark, a major role is played by registration tax (cf. table 3 and cf. figure 2). This tax accounts for half of the total burden in Finland and almost 60% of the burden in Denmark. Registration tax is the component that shows the widest variation across the countries studied. By contrast, the range of rates for turnover tax on acquisition of a car (between 7.6% and 25%) contributes to only a small extent to the differences in the total tax burden.

Annual circulation tax on privately owned cars also varies significantly. It is not levied at all in two countries (France and Poland), while sums of up to euro 370 are paid in the other countries. Insurance tax also varies substantially, although the sums paid are always lower than those for circulation tax (except in France). Given an annual mileage of 15 000 km, as assumed here, petroleum tax accounts for the largest share of the total burden in 16 countries, the exceptions being the five countries with hefty registration taxes (Denmark, Finland, Norway, Ireland and Slovenia). Petroleum tax is most substantial in Great Britain (euro 740) and is least substantial in Slovenia (euro 250). Finally, the sixth component of vehicle-related tax is turnover tax on fuel purchases. It is more substantial than circulation tax in most of the countries – under the assumptions made here. This is also the case given a lower assumed mileage of 12 000 km.

The ranking order by amount of tax paid in the 21 countries (cf. figure 2) shows a broad middle area con-

[10] The technical characteristics of the car, average fuel consumption, country-specific net purchase price, insurance premium rate, loss in value over four years following first-time registration, fuel prices, annual mileage, etc.

Table 3

Comparison of Private Car Taxes Across Europe – Low Medium Class: Golf 1.4 Petrol Engine[1]

In euro per annum

	Total taxes	of which:					
		Registration tax	Turnover tax on purchase	Circulation tax	Tax on insurance premium	Petroleum tax[2]	Turnover tax on mineral oil
Austria	1 215	64	351	205	36	410	150
Belgium	1 302	31	343	169	88	494	177
Germany	1 188	6	287	71	52	622	150
Denmark	3 711	2 082	334	326	207	534	228
Spain	974	128	257	50	31	392	116
France	1 190	18	328	0	107	568	169
Finland	2 582	1 295	330	118	96	553	190
Great Britain	1 468	10	329	195	16	737	181
Greece	1 143	226	272	132	60	334	119
Italy	1 325	75	329	142	87	515	177
Ireland	2 061	945	337	236	6	397	140
Luxembourg	771	4	244	55	13	368	87
The Netherlands	2 002	505	301	370	23	615	188
Portugal	1 441	465	290	43	42	474	128
Sweden	1 093	0	383	100	0	498	112
Switzerland	920	43	136	156	16	506	63
Norway	2 524	892	461	303	42	589	238
Poland	1 006	54	396	0	0	404	152
Czech Republic	970	0	394	80	0	356	139
Hungary	1 112	179	448	41	0	356	88
Slovenia	1 685	843	341	75	21	249	156

As of April 2002. — 1 Assumptions: mileage: 15 000 km; fuel consumption: 6.6 l/100 km. — 2 Including other taxes in Belgium, Germany, France, Greece, the Netherlands, Austria.
Sources: ACEA; ADAC; CEA; Eurotax AG; European Commission; DIW Berlin calculations.

taining almost half of all the countries observed, where the total tax burden fluctuates within a narrow range of between euro 1 000 and euro 1 300. Owing to its high rate of petroleum tax, Great Britain is ranked above these countries. The high position of the other countries with a burden in excess of euro 1 300 is caused by their rates of registration tax. However, Denmark (the country with the highest burden) is ranked highest also on the basis of other taxes.

As regards taxes levied on the purchase and ownership of cars, Germany is in third-lowest place after Luxembourg and Switzerland, while the tax burden on fuel consumption in Germany is exceeded only in three countries (Great Britain, Netherlands, Norway). Germany is in a favourable position with respect to the total tax burden: in this specimen calculation, eight countries have lower taxes, while twelve countries have (in some cases significantly) higher taxes.

Three of the four EU accession countries observed are ranked in the lower third of the table as regards total taxes. It is remarkable that even though this evaluation is not weighted with the purchasing power in the countries observed, the Republic of Slovenia is one of the countries paying high taxes, as a result of registration tax and import duties.

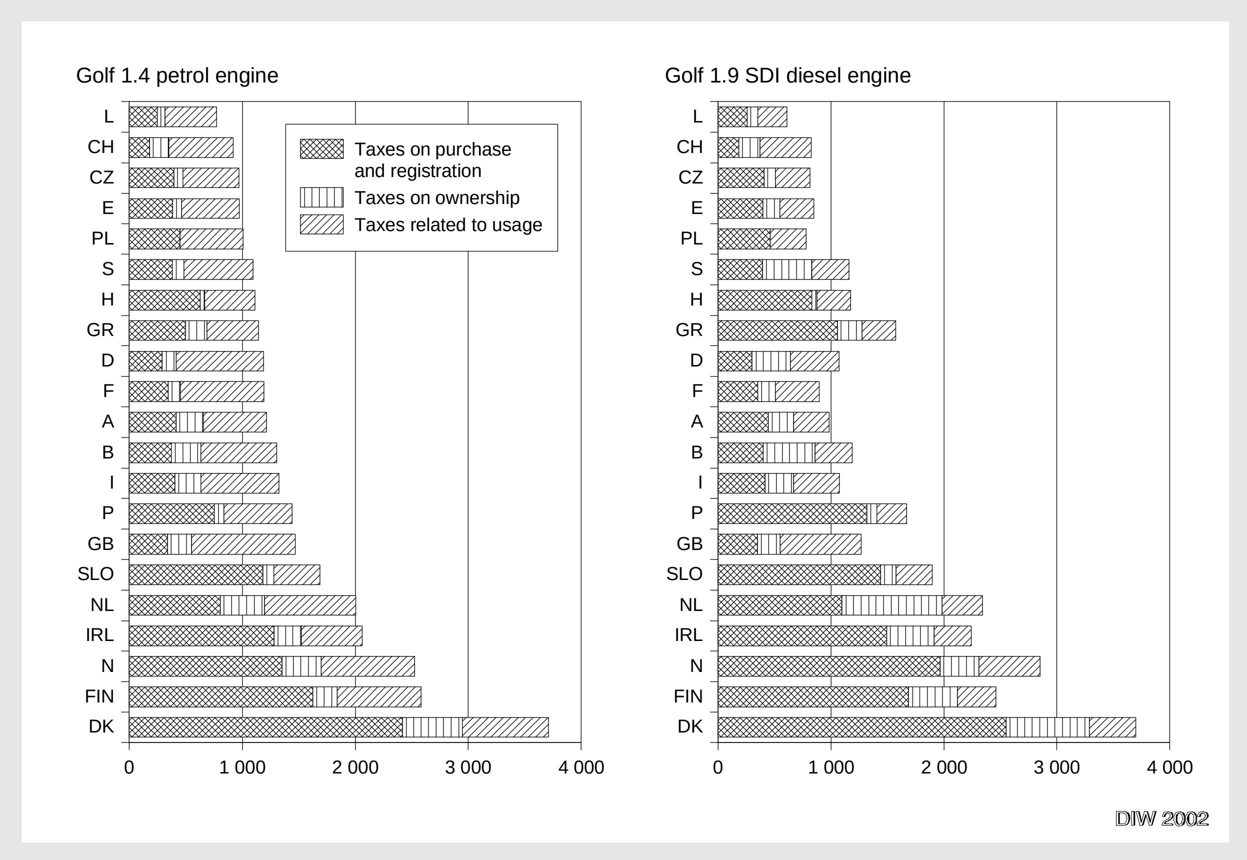
The differences between the countries depend on the segment of the car market and the assumed intensity of use. If the analysis is extended to include several market segments and based on the same annual mileage (15 000 km), there is hardly any change in the position of the countries.[11] It is worth noting that Germany's relative position as regards total taxes paid becomes increasingly favourable as the size of car increases. While Ger-

[11] In the study on which this report is based, 22 car models from all market segments are examined.

Figure 2

Comparison of Taxes on Low Medium Class Private Cars in Europe[1]

in euro per annum



As of April 2002.

1 Assumptions: mileage: 15 000 km; fuel consumption: petrol engine 6.6 l /100 km, diesel engine 5.1 l /100 km.

Sources: ACEA; ADAC; IRF; Eurotax AG; European Commission; DIW Berlin calculations.

many is ranked in the middle of all countries for the 'mini' segment, the sum of taxes paid for a car in the upper class is lower only in the Czech Republic, Luxembourg and Switzerland.

… versus cars with diesel engines

Because of its major importance in the commercial transport sector, diesel fuel is taxed at a lower rate than petrol in almost all the countries studied. In many countries, the resulting fiscal advantage for users of passenger cars with a diesel engine is offset by higher circulation tax than for petrol-run cars. Thirteen of the 21 countries charge a higher rate of circulation tax for a diesel car in the lower medium class than for a comparable petrol-run car, while four countries impose a lower rate of circulation tax. The savings made in fixed costs by owners of petrol-run cars are substantial in some countries, amounting to up to euro 500 per annum (cf. table 4 and cf. figure 2).

On the other hand, petroleum tax and turnover tax on fuel purchases are higher for cars with petrol engines than for diesel-run cars because of the higher rate of petroleum tax and the higher fuel consumption. Given the annual mileage of 15 000 km assumed here, petroleum tax alone for cars with petrol engines is around twice as high in more than half the countries than that for diesel cars; in these countries, the difference amounts to between euro 200 and euro 450.

Calculation of the sum of all the relevant taxes shows a higher burden (of up to euro 300) for cars with petrol engines in the majority of the 21 countries. In eight countries, however, the total tax paid on cars with diesel engines is higher than that paid on petrol-run cars.

However, the evaluation depends significantly on the assumed intensity of use of the cars, because the

Table 4

Comparison of Private Car Taxes Across Europe – Low Medium Class: Golf 1.9 SDI Diesel Engine[1]

In euro per annum

	Total taxes	of which:					
		Registration tax	Turnover tax on purchase	Circulation tax	Tax on insurance premium	Petroleum tax[2]	Turnover tax on mineral oil
Austria	983	81	365	172	52	220	94
Belgium	1 184	46	354	331	128	226	99
Germany	1 070	6	295	262	76	339	92
Denmark	3 699	2 205	344	436	302	282	130
Spain	847	131	265	105	45	225	75
France	894	14	338	0	156	288	98
Finland	2 458	1 347	340	292	139	233	107
Great Britain	1 264	10	339	179	24	570	143
Greece	1 570	777	280	132	87	219	76
Italy	1 073	75	339	129	126	292	111
Ireland	2 242	1 144	347	410	9	231	100
Luxembourg	609	4	251	77	19	194	64
The Netherlands	2 339	789	309	849	33	259	99
Portugal	1 666	1 006	310	27	61	208	53
Sweden	1 159	0	395	434	0	260	70
Switzerland	825	43	140	166	24	402	51
Norway	2 853	1 473	491	303	42	377	167
Poland	780	55	408	0	0	219	98
Czech Republic	811	0	406	100	0	207	98
Hungary	1 175	369	461	43	0	237	64
Slovenia	1 895	1 089	351	103	31	196	125

As of April 2002. — 1 Assumptions: mileage: 15 000 km; fuel consumption: 5.1 l/100 km. — 2 Including other taxes in Belgium, Germany, France, Greece, the Netherlands, Austria.
Sources: ACEA; ADAC; CEA; Eurotax AG; European Commission; DIW Berlin calculations.

rates of the fixed and variable taxes vary across the different countries. Taking a realistic mileage spectrum of between 10 000 km and 20 000 km per annum, it emerges that diesel cars do worse in general in seven countries and better in general in 11 countries (cf. figure 3). Because diesel cars consume less fuel, their relative tax position improves in all countries as mileage increases. This trend strengthens the greater is the difference between the specific taxes on petrol and diesel fuel. The specific taxes on diesel are no lower than those on petrol in Great Britain, Switzerland and Slovenia, and so the differences are least substantial in these countries. In Germany, the tax burden on the models observed here (Golf 1.4 petrol engine and Golf 1.9 diesel engine) is already lower for diesel cars from an annual mileage of only 10 000 km upwards.

In all countries, diesel models are more economical in tax terms than petrol-run models as car size decreases and mileage increases. Small and medium-class cars with a diesel engine are subject to lower taxes in most countries – across a broad spectrum of mileages – than comparable cars with a petrol engine. In those countries in which diesel cars prove to be a better financial prospect than petrol-run cars (Austria, Belgium, Spain, France and Luxembourg), the share of diesel cars on the road and the data on first-time registrations show that diesel cars are becoming more widely distributed.[12]

Efforts to reform car taxation

Various problems concerning taxation and the structure of competition in the transport sector are currently being discussed at national and EU level. The most

[12] For a detailed analysis of the trends for characteristics, market conditions and market shares of diesel cars in five European countries, cf. L. Schipper, C. Marie-Lilliu and L. Fulton: 'Diesels in Europe – Analysis of Characteristics, Usage Patterns, Energy Savings and CO_2 Emission Implications', in: *Journal of Transport Economics and Policy*, vol. 36, 2002, Part 2.

recent initiatives on the part the European Commission concern, in particular, the deregulation of the distribution system for private cars and the harmonisation of both the taxation systems and the rates of tax levied on private cars and fuels.[13]

The taxation of private cars is also under examination in Germany. The 1997 law on increasing the amount of consideration given to toxic emissions in the taxation of private cars obliges the German government to examine the effects of the new law following a period of experience of five years and in this examination to give particular consideration to the possibility of transferring circulation tax to petroleum tax.[14] In view of the most recent initiatives on the part of the European Commission, this evaluation will have to give consideration to the proposals on European harmonisation and on switching to a basis of assessment for circulation tax which is related to CO_2 emissions.

The European Commission believes that the variety of taxation systems for cars in the member states is causing fiscal obstacles, distortions and inefficiency. In addition, fiscal measures are one of the pillars of the joint strategy on reducing car CO_2 emissions launched back in 1995.[15] Against this background, the aim of the European Commission's most recent communication of September 2002 is to initiate a discussion intended to lead to the modernisation and simplification of the current systems of car taxation.

The analysis presented here confirms the heterogeneity of the taxation systems and the substantial tax differential across Europe. In particular, the registration tax which exists in 11 EU countries constitutes a considerable burden for owners of new cars in five of these countries. A system that gives consideration to ecological criteria in the sense of the Commission's goal can be observed in only five of the 11 countries. In addition, excessive taxes levied exclusively on new cars are retarding the modernisation of the stock of cars on the road. Because of the tax differentials in the case of new cars, the car industry adjusts its prices so that in countries with low or no registration tax the pre-tax prices are significantly higher.[16] The Commission believes that the price differentials could only be maintained because the existing distribution regulations (the block exemption regulation) for the car industry allowed a discriminative price policy and measures that obstructed competition. This situation contributed to the Commission's decision to amend the rules of competition for sales and servicing in the private-car sector.[17]

The second main goal of the Commission is to partially or totally base private-car taxation on CO_2-related bases of assessment. Thus far, various fiscal strategies for penalising environmental risks can be observed in the countries studied. One basis of assessment – used in Germany and the Netherlands – is early compliance with limits on toxic emissions (Euro 2/3/4 standards).[18] In order to reduce average fuel consumption and thus CO_2 emissions in the transport sector, some countries have introduced fuel consumption and CO_2 emissions as new tax bases. Of the 11 EU countries with registration taxes, three take exhaust emissions and three take fuel consumption into account. Environmental considerations play a part in the calculation of circulation tax in seven EU countries; four of these take fuel consumption or CO_2 emissions into account, while five are concerned with the exhaust emissions of the cars.

The tendency of the taxation systems to favour diesel engines is contributing to the ground being gained by the diesel car in Europe. There is no good reason, at least in the private sector, for such preferential treatment. Thus, the authors agree with the Commission's demand that excise duties on diesel fuel for private cars should be aligned with the tax on unleaded petrol and that, at the same time, the annual circulation tax on cars with diesel engines should be brought into line with that on petrol-run cars.[19]

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13 For the European Commission's general ideas concerning the reform of the transport sector cf. the Commission's 'White Paper on European Transport Policy for 2010', COM (2001) 0370 of 12.09.2001, *http://europa.eu.int/comm/energy_transport/en/lb_en.html.*
The amended distribution regulations are contained in the Commission's new block exemption regulation for the motor vehicle sector: Commission Regulation (EC) No. 1400/2002 of 31 July 2002; cf. OJ L 203/30 of 1.8.2002 and *http://www.europa.eu.int/comm/competition/car_sector/*. Proposals for the harmonisation and reform of car taxation are presented in Commission Communication (2002) 431 final of 6.9.2002; cf. *http://europa.eu.int/comm/taxation_customs/taxation/vehicles_taxation/index.htm.*

14 Cf. BGBl. (Federal Law Gazette) 1997 I, p. 805 ff.

15 Cf. 'Commission Communication on a Community Strategy to Reduce CO_2 Emissions from Passenger Cars and Improve Fuel Economy', COM (1995) 689 final and Bull. 12-1995, point 1.3.146.

16 For evidence of the significance of the tax differential for the differences in net selling prices for private cars in the EU countries, cf. H. Degryse and F. Verboven: 'Car Price Differentials in the European Union: An Economic Analysis.' London 2000; K.U. Leuven and C.E.P.R.: *http://europa.eu.int/comm/competition/car_sector/distribution/eval_reg_1475_95/studies/car_price_differentials.pdf.* Exchange rates also play an important part in explaining short-term fluctuations in the price differentials. Taxes and exchange rates alone, however, are by no means the only factors that can explain the price differentials and their trends over the analysis period from 1993 to 2000.

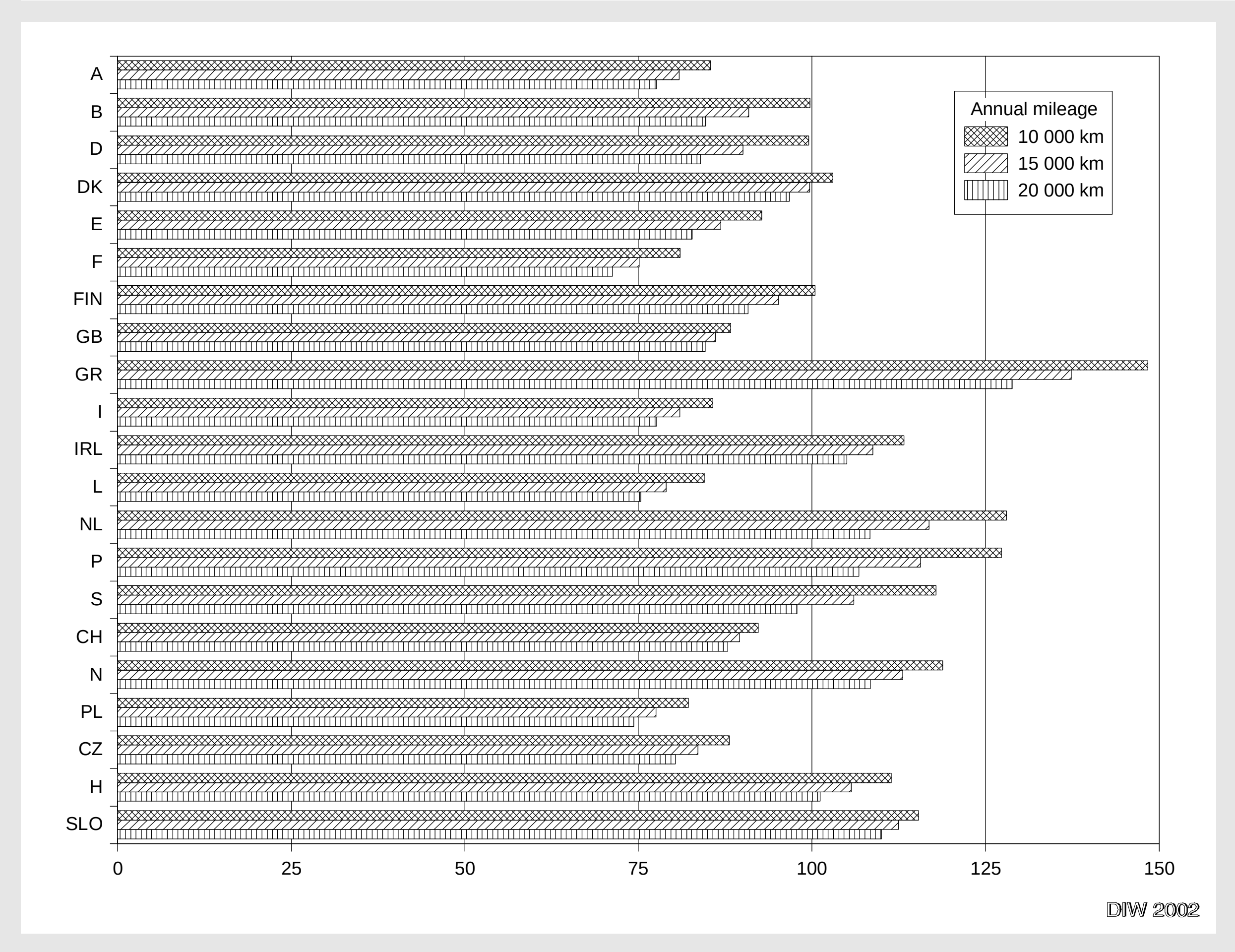
17 Cf. European Commission: 'Commission Adopts Comprehensive Reform of Competition Rules for Car Sales and Servicing.' Press release, IP/02/1073 of 17.7.2002, Brussels.

18 The Euro exhaust standards regulate the admissible CO, NO_x, HC and particle emissions for the European type approval of private cars.

Figure 3

Comparison of Taxes on Vehicles with Petrol and Diesel Engines by Annual Mileage (petrol engine = 100)[1]

Low medium class: Golf 1.4 petrol engine versus Golf 1.9 SDI diesel engine



As of April 2002.
1 Assumed fuel consumption: petrol engine 6.6 l /100 km, diesel engine 5.1 l /100 km.
Sources: ACEA; ADAC; IRF; Eurotax AG; European Commission; DIW Berlin calculations.

Conclusion

This analysis of car taxes in the countries of Europe reveals the existence of extremely divergent taxation systems. This is expressed both by the different types of tax imposed and by the numerous different tax bases and tax scales applied. The result is wide variation in the shares of fixed and variable tax components regarding private cars. The share of the total burden accounted for by taxes on purchase and registration ranges from 19% (Switzerland) to 65% (Denmark); that accounted for by taxes related to ownership ranges from zero (Poland and France) to 20% (Netherlands, Belgium and Austria); while the share accounted for by taxes related to use ranges from 21% (Denmark) to 65% (Great Britain and Germany).

The effects of this heterogeneity on competition and the environment entirely justify the European Commission's efforts to reduce the differences between the taxation systems. However, harmonisation will be difficult and require a long-term adjustment period because the selection of the tax bases applied in the individual countries is determined by a variety of fiscal policy goals and approaches to taxation.

[19] This would require separate taxation of diesel fuel for private and commercial purposes; on this point also cf. the proposal for a Council directive on creating a special regulation for taxing diesel fuel for commercial purposes and on narrowing the differential between excise rates on petrol and diesel, COM (2002) 410 final of 24.7.2002.

Thus, the hefty registration tax in Denmark, Norway and Finland, for example, was initially justified as a luxury goods tax, but in today's age of mass motorisation this view is really no longer in keeping with the times; nonetheless, this tax is an important source of income for these countries. Converting this tax into an annual circulation tax would represent a step towards harmonisation, but this would have to be accompanied by a significant reduction in the rate imposed and resulting revenue losses, because much lower rates of circulation tax or the sum of registration tax and circulation tax are paid in other countries.

Another example of the problems with harmonisation are the differences in the taxation of fuel types. According to the Commission's goals, excise duty on diesel fuel for private cars should be gradually increased and in the medium term be fully aligned with the excise duty on unleaded petrol. If petroleum tax is seen as an 'incentive' tax which is directly related to CO_2 emissions, then only Great Britain, Switzerland and Slovenia are on the right track in that they do not favour diesel in fiscal terms. The fact is that CO_2 emissions per litre are higher for diesel than for petrol. However, it is doubtful that an approach of this kind can be implemented across the entire EU.

One main goal of the system of private-car taxation should be to promote the use of modern technology via fiscal incentives. Germany has made progress in this respect in recent years. In this area of government influence, especially, it must be remembered that regional diversity in the EU can also have its advantages. Testing new ideas at regional level can encourage innovation and help to avoid unproductive decisions at EU level. This approach can often be more advantageous than implementing a minimum consensus across the EU. However, no matter how necessary harmonisation may be, it should be limited to those aspects of the taxation system that genuinely impede competition and free exchange of goods. In this respect, registration tax deserves special mention, as do such elements of the relevant taxation systems as affect technical specifications.[20]

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[20] Registration tax results in a double burden when a car is transferred to another EU country. The different technical specifications for cars based on the various taxation systems prevent the car industry from exploiting economies of scale.