ANALYSIS OF "ENVIRONMENT STAMP" - FIRST REGISTRATION TAX FOR CARS IN ROMANIA

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Abstract:
Since its introduction, the first registration car tax newly called environment stamp has sparked an intense controversy and opposition default of some organizations and those peoples who wish to purchase a car. Following charging criteria and the fee changed several times. Was recently introduced a new formula. Is this formula correctly grounded? Can it be improved?

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Introduction. Changes over changes, contradictory statements and repetition of the "polluter pays" slogan are some of the moments that have marked the complicated history of the [car pollution] tax in Romania. In 2008, panicked new car dealers demanded and were granted higher taxes while CE sent us several related warnings, on the grounds that the tax discriminates against certain types of cars. Driver protests took place from time to time and there have been also discussions about replacing the [one time] tax with an annual tax, but the most constant characteristic of this matter was the continuous change in the formula used for calculating the tax amount, during the five years since its introduction. As a result, the law courts recorded about 80.600 cases, filed between 2011 and 2012, for car pollution tax refund. "The government will have to adopt a law that permits the return of the car tax collected illegally, thus relieving the courts of the state from the refund lawsuits. The government is required to return the vehicle owners a total of 400 million euros, representing illegally collected tax", according to statements made by the current Prime Minister Victor Ponta.

Importance. Pollution tax generates revenue for the budget of the Environment Fund, which funds several environmental programs, including "incentive program nationwide fleet renewal" and Scrapping program (a.k.a "Rabla") and also includes facilities for the purchase of green cars (electric/ hybrid), Ecological House, Program for afforestation of degraded terrains, ecological restoration and sustainable management of the forests, National program for environmental quality improvement through green areas within the cities, Program for increase of energy production from renewable sources and other ecological programs.

Car tax was a tool to reduce the import of used, polluting old cars, and the Scrapping program ("Rabla") helped to put out of circulation some old cars, and stimulate purchase of new cars, new car sales been on a downward slope due economic crisis.

First registration car tax in EU. The vast majority of EU countries charge emissions (Euro pollution standards), CO2 emissions (ie fuel consumption tax), age, displacement or price class. Up by two of them combined in a formula with technical justification.

In Germany, UK, Sweden, Slovakia, Bulgaria, Czech Republic, Estonia, Luxembourg does not exist.

In other countries formula is based on:

- CO2 emissions in France, Spain, Ireland, Latvia;
- Vehicle fuel consumption Austria;
- engine displacement in Poland;
- pollutant emissions in Hungary;
- CO2 engine and displacement in Portugal;
- engine displacement and pollutant emissions in Greece;
- engine displacement and car's age in Belgium;
- car price and CO2 emissions in Netherlands and Fiinland;
- percentage on cars price in Denmark and Slovenia;

In Italy and Lithuania ia a fixed amount for any car (in Italy € 300 and an € 15 in Lithuania).

How was thought "Environment Stamp" for Romania.

Calculation formula: The amount to be paid, corresponding to the environmental stamp, is calculated based on the items shown in the tables 1 to 3, as follows:

a) for vehicles compliant with the Euro 5, Euro 4 or Euro 3 standards, the environmental stamp is calculated based on the values for carbon dioxide (CO2) emissions presented in table 1, and on the value of the environmental stamp reduction factor, provided in column no. 2 of table 2, according to the following formula:

Payment Amount = [(A x B x (100 - C)]/100, where the variables are:

A = the combined CO2 emissions in grams/km, as specified in the Vehicle Identity Card;

B = the environmental stamp value for polluting emissions, in Euro/gram of CO2, as presented in table 1;

C = reduction factor for environmental stamp, as presented in column no. 2 of table 2;

b) for vehicles of M1 category, which correspond to Euro, Euro 1 or Euro 2 pollution standards and which do not have specified combined value of CO2 emissions, the calculation is made according to the following formula:

Payment Amount = [E x D x (100 -C)]/100, where the variables are:

C = reduction factor for environmental stamp, as presented in column no. 2 of table 2;

D = engine displacement;

E = environmental stamp, as set out in column no. 3 of table 3;

c) the formula provided at b) is applicable also for vehicles of M1 category compliant with Euro 3, Euro 4, Euro 5 or Euro 6 pollution standards which do not have the combined value of CO2 emissions parameter presented in the specification.

Table No. 1

Environment Stamp level depending on the emission of carbon dioxide for pollution standards Euro 3, Euro 4 and Euro 5

EURO 5	Engine displacement						
CO2 emission /km	<1.000	1.001 - 1.200	1.201- 1.400	1.401 - 1.600	1.601 - 2.000	2.001 - 3.000	=>3.001
< 110	0,30	0,36	0,45	0,51	0,6	0,81	0,99
111 - 120	0,42	0,504	0,63	0,714	0,84	1,134	1,386
121 - 130	0,54	0,648	0,81	0,918	1,08	1,458	1,782
131 - 140	0,66	0,792	0,99	1,122	1,32	1,782	2,178
141 - 150	0,78	0,936	1,17	1,326	1,56	2,106	2,574
151 - 165	0,96	1,152	1,44	1,632	1,92	2,592	3,168

166 - 180	1,26	1,512	1,89	2,142	2,52	3,402	4,158
181 - 195	1,44	1,728	2,16	2,448	2,88	3,888	4,752
196 - 210	1,62	1,944	2,43	2,754	3,24	4,374	5,346
> 210	2,04	2,448	3,06	3,468	4,08	5,508	6,732

EURO 4	**Engine displacement**						
CO2 emission /km	**<1.000**	**1.001 - 1.200**	**1.201- 1.400**	**1.401 - 1.600**	**1.601 - 2.000**	**2.001 - 3.000**	**=>3.001**
< 110	2,4	2,88	3,6	4,08	4,8	6,48	7,92
111 - 125	3	3,6	4,5	5,1	6	8,1	9,9
126 - 140	4	4,8	6	6,8	8	10,8	13,2
141 - 155	4,6	5,52	6,9	7,82	9,2	12,42	15,18
155 - 170	5,2	6,24	7,8	8,84	10,4	14,04	17,16
171 - 185	5,8	6,96	8,7	9,86	11,6	15,66	19,14
186 - 200	6,5	7,8	9,75	11,05	13	17,55	21,45
201 - 215	7,5	9	11,25	12,75	15	20,25	24,75
> 216	8,1	9,72	12,15	13,77	16,2	21,87	26,73

EURO 3	**Engine displacement**						
CO2 emission /km	**<1.000**	**1.001 - 1.200**	**1.201- 1.400**	**1.401 - 1.600**	**1.601 - 2.000**	**2.001 - 3.000**	**=>3.001**
< 110	7,2	8,64	10,8	12,24	14,4	19,44	23,76
111 - 125	9	10,8	13,5	15,3	18	24,3	29,7
126 - 140	12	14,4	18	20,4	24	32,4	39,6
141 - 155	13,8	16,56	20,7	23,46	27,6	37,26	45,54
155 - 170	15,6	18,72	23,4	26,52	31,2	42,12	51,48
171 - 185	23,2	27,84	34,8	39,44	46,4	62,64	76,56
186 - 200	19,5	23,4	29,25	33,15	39	52,65	64,35
201 - 215	22,5	27	33,75	38,25	45	60,75	74,25
> 216	24,3	29,16	36,45	41,31	48,6	65,61	80,19

Table No. 2

Discount rate for Environment Stamp

Age of the vehicle	**Discount rate %**
new	0
</= 1month	3
> 1month - 3months inclusiv	5
> 3months - 6months inclusiv	8
> 6months - 9months inclusiv	10
> 9months - 1 year inclusiv	13
> 1 year - 2 years inclusiv	21
> 2 years- 3 years inclusiv	28
> 3 years - 4 years inclusiv	33
> 4 years- 5 years inclusiv	38
> 5 years- 6 year sinclusiv	43
> 6 years- 7 years inclusiv	49
> 7 years- 8 years inclusiv	55
> 8 years- 9 years inclusiv	61
> 9 years- 10 years inclusiv	66
> 10 years- 11 years inclusiv	73
> 11 years- 12 year sinclusiv	79
> 12 years- 13 year sinclusiv	84
> 13 years- 14 years inclusiv	89
> 14 years- 15 years inclusiv	90
over 15 years	90

Table No. 3

Level of Environment Stamp for pollution norm Euro 2, Euro 1 and Non-Euro

Pollution standards	Engine displacement (cc)	Level of Environment Stamp Euro/ 1 cc
E2	<= 1200	1,50
	1201 - 1400	2,40
	1401 - 1600	2,90
	1601 - 2000	3,30
	2001 - 3000	3,90
	> 3000	4,40
E1	<= 1200	1,70
	1201 - 1400	2,50
	1401 - 1600	3,10
	1601 - 2000	4,00
	2001 - 3000	4,90
	> 3000	5,10
E0	<= 1200	2,00
	1201 - 1400	2,60
	1401 - 1600	3,30
	1601 - 2000	4,20
	2001 - 3000	4,50
	> 3000	5,20

Environment stamp formula analysis.

The formula shows three parameters that are taken into account:

- greenhouse gas emissions (specific to each car type), (A);
- Unit value of the environmental stamp, (B);
- Age of the vehicle, (C).

Unit value of the environmental stamp is dependent of three factors:

- Pollution standard;
- Corresponding category for the greenhouse emissions of each car type;
- Engine displacement

CO2 emissions role in the final price of the environmental stamp is a dual one, direct influence on the final price and indirect on the unit price.

Within a single pollution standard, cars falling into the same emissions category, but with different engine displacements, have different unit value of the stamp. Thus, although the pollution is the same, large displacement cars (consequently, more expensive) have to pay more. This can be seen as a payment of a luxury tax in addition to the environmental one. How ethical is that? If two cars generate the same pollution (in terms of carbon dioxide and other pollutants), but they differ in terms of price, is it natural to pay the same or should they pay in direct proportion to the sale value? Is it possible for a small engine car, having a less efficient engine and a limo with large displacement engine but high performance to have the same environment tax? The table no. 1. presents a proportional relation between the unit price and the engine displacement: 1000cc - 0,3; 2000cc - 0,6; 3000cc - 0,81 is a curve that is slightly below the direct proportionality diagonal of the x0y coordinate system.

It is noted that within the same pollution standard, for the same engine displacement value, the unit price of the stamp increases much faster than the average of the emission category. The graphic representation shows a curve that diverges from the direct proportionality diagonal. As a result, efficient engines with low emissions are encouraged.

In case of engines with the same displacement and the same emission category, but which comply with different pollution standards, is noted that the higher the pollution standard (that is, more current), the stamp unit price decreases, thus new technologies and efficient engines are encouraged. For example, in case of an engine having a displacement lower than 1000cc and emissions lower then 110gr CO2/km, the unit price will be: E5 - 0,3; E4 - 2,4; E3 - 7,2;

The table 2 shows that an old automobile will benefit from a large reduction factor. It is believed that the older a vehicle is, the more advanced is the wear and, consequently, the remaining operational time is shorter, resulting in a lower value for the total pollutant emissions compared to a new vehicle.

The current formula, that reduces the tax value in accordance to the age of the vehicle, corrects the old formula that resulted in a larger tax value for older vehicles. In some cases, the result was that the pollution tax was much higher than the market value of that vehicle, which resulted in a freeze of the second hand market. Actually, the introduction of this tax was made in order to protect domestic car industry.

Upon removing a vehicle from the national vehicle pool, the owner is entitled to request reimbursement of the environmental stamp, according to the car's residual value.

As noted in the formula, including the pollution tax in the fuel price would be a mistake because although there is a direct proportionality between the pollution and engine displacement (larger engines consume more and, consequently, pollute more), the high performance engines would not be encouraged within the same engine displacement category.

An annual payment of the environmental stamp, together with the vehicle tax, would have several advantages:

- Distribution of the fiscal “burden” during the entire lifetime of the vehicle thus, during the entire time it pollutes, and not only at the purchase. The payment of this tax at the moment of purchase is a mistake because the financial effort made at this point diminishes the payment capability of the purchaser and, consequently, its readiness for the payment. A distributed payment, over a number of years, is much easier to bear than single payment immediately after the purchase of the vehicle. Annual payment would result in a low payment for a new vehicle. Also, as the time passes, together with the wear increase and efficiency decrease, it would lead to an increasing tax value that can be a factor to determine the purchase of another vehicle, new, economical and efficient. Cars purchased before 2007, that have not paid any taxes, but will pollute a long time from now on, would also be taxed. This would be a correct application of the “polluter pays” principle, that is, fair to all polluters.
- In case the vehicle is sold, each owner pays proportionally with time/use of the vehicle, as opposed to the present rule, that requires payment only from the first owner.
- The stamp value can be modified (+/-) in relation to various criteria that may be found in the future.

Introduction of this tax completely in the price of fuel is not ideal, given that it would result in more expensive fuel, already expensive enough for the buying power of the Romanian people and would not result in a reduction of the pollution (as intended when creating this tax). Fuel price fluctuations in our country, in recent years, have demonstrated that the market is inelastic, the demand for fuel remaining relatively constant, regardless of positive or negative fluctuations in the fuel price. On the other hand, the advantage of this method is that covers also the cars purchased prior to 2007

that are excluded in the current model of tax calculation. The taxation would be directly proportional with the car consumption and especially with the car use (thus, a car that is not used, does not pollute and does not pay the environmental tax; also one that is rarely used pays less than one heavily used).

Conclusions

It can be concluded that the present method of calculation, although properly grounded, could be improved by a formula to divides the environmental tax in a gradual car tax, paid yearly. Also, is possible that this could be added a percentage included in the fuel sale price. This formula would "fix" the current inconveniences, equitably distributing the burden to all consumers and being also distributed over the life time of the vehicle. This would make it easier to bear and also would directly correlate it to the wear of the engine, at the moment of its calculation.

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