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THE ECONOMIC EFFECTS OF THE NEW GERMAN NOISE POLLUTION BILL

The portions of the available income of private households that are to be spent for future noise prevention measures will, as a whole, result in a diminishing demand for other goods and services.

Type and extent of these changes in demand will decisively depend on whether the required noise prevention measures will primarily refer to traffic structures, such as roads and bridges, and buildings or motor vehicles, and above all on who, in the last analysis, will bear the cost of these measures.

Table 1: Costs of noise protection measures on existing roads (million DM)

Classification of roads	Immission limit values - dB(A)					
	80/70		75/65		70/60	
	total	per annum	total	per annum	total	per annum
Municipal Roads	256	17	2506	167	8223	548
Land/District Roads	2	0.2	108	7	1112	74
Federal Trunk Roads	123	8	1593	106	4564	304
All existing Roads	381	25	4207	280	13899	926

Table 2: Percentage costs of noise protection measures on existing roads - referred to annual costs of the completion of the road system and the costs of building new roads

Classification of roads	Immission limit values - dB(A)		
	80/70	75/65	70/60
Municipal Roads	0.3 %	2.8 %	9.1 %
Land/District Roads	0.01 %	0.5 %	4.9 %
Federal Trunk Roads	0.2 %	2.3 %	6.6 %

Table 3: Percentage costs of soundproofing measures for all roads (new construction, essential corrections, and existing roads).

Noise prevention strategy	Federal Roads	Land/District Roads	Municipal Roads
Alternative A	5.5 %	1.7 %	7.8 %
Alternative B	9.8 %	6.1 %	14.1 %
Alternative C	12.2 %	8.1 %	18.1 %

References

- (1) BUNDESREGIERUNG, Entwurf eines Gesetzes zum Schutz gegen Verkehrslärm an Straßen und Schienenwegen (VLärmSchG), BT-Drs.8/1671.
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1. Introduction

The "Bill for Protection against Traffic Noise produced along Streets and Railways" - Verkehrslärmschutzgesetz - brought in by the government of the Federal Republic of Germany is intended to create clear legal bases for determining in what cases a protection against traffic noise is necessary and when the citizen is entitled to demand this protection.

According to the Bill, the following immission limit values shall apply both day and night to new streets and roads:

- 65/55 dB(A) for residential areas;
- 70/60 dB(A) for central and mixed areas;
- 75/65 dB(A) for trade and industrial areas.

For existing federal trunk roads, a mean noise level of 75/65 dB(A) is provided. However, the establishment of limit values for existing federal trunk roads should, of course, also result in corresponding regulations regarding roads to be maintained by the administrations of the Laender (that is federal member states) and municipalities. What also speaks for this is not only the principle of equality, but also the difficulties that would otherwise arise at the time of political enforcement if city dwellers whose houses adjoin municipal roads feel that they are put at a disadvantage as compared to federal road frontagers.

2. The Costs

According to the Bill, additional sound-proofing costs for new streets (in the following always including essential corrections) are incurred in the amount of

- 150 million DM per year for federal trunk roads;
- 18 million DM per year for roads to be maintained by the administrations of the Laender and districts;
- 300 million DM per year for roads to be maintained by the administrations of municipalities.

However, the costs of existing roads mentioned in the government bill as amounting to 140 million DM per year refer to federal trunk roads only. A more detailed study shows that, on the basis of new costs estimates for noise reducing measures on windows and recent experience gained with respect to the extent of measures required, this amount can be reduced by approximately one fourth to 106 million DM per year. Table 1 furnishes the costs then incurred for all existing roads. As the pair of limit values of 75/65 dB(A) is subject to alteration by way of conciliation of interests in parliament, two alternatives with limit values higher and lower by 5 dB(A) each are calculated.

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If the annual noise prevention cost for the existing roads are also to be paid out of the road construction budget, then - referred to the building costs (including the acquisition of land), but without consideration of the noise protection - the percentage values furnished in Table 2 apply.

Similarly, in the event of noise prevention costs for new roads being included, the total costs are governed by the respective immission limit values; Table 3 furnishes the percentage amounts, three different noise protection strategies being assumed:

- Alternative A: immission limit value according to government bill;
- Alternative B: reduction of the immission limit values to 70/60 dB(A) for existing roads, otherwise as under Alternative A.
- Alternative C: new roads according to government bill, but reduction of the immission limit values by 5 dB(A) per district category, otherwise as in Alternative B.

3. The Financing

Thus, this financing means that of the funds that have so far been used for road construction, the abovementioned percentages are now used for noise control so that correspondingly smaller funds are available for the completion of the road system and construction of new roads.

If the lawgiver decides on a percentage excess to be paid by house owners, this is likely to be in the amount of one third to one half. At a rate of 40 %, the additional costs to be borne for each standard apartment are in the amount of 2400 DM. For a 20 years' period of depreciation, this corresponds to an annual amount of 120 DM without interest payment. If this portion is passed on, an additional amount of 10 DM per month is to be paid by the tenant. Even in the event of interest being taken into account, the rent increase for a standard apartment in the cities and conurbations is, as a rule, unlikely to exceed a portion of 5 %.

The tenant might, without financial losses pay that portion of the expenses incurred by the house owner for additional sound-proofing measures, which is compensated for by the saving of heating costs.
ag 120 DM/yr.

4. The Competition

In the case of the medium and long-term reduction of the emission values, according to the automotive industry, the purchase price of a car will increase by 1600 DM, and the fuel consumption by approximately 4 %. This corresponds to an increase in the private household expenses for operating a car by approximately 5 to 7 %.

If in the case of reduction of the emission values by up to 10 dB(A) on heavy-duty utility vehicles, we assume an increase in the purchase and fuel prices by 10 %, the transport cost increases by approximately 3 to 5 %.

Due to the car buyers' low elasticity of demand, these increases in price will not result in major decreases in domestic sales. As, how-

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ever, not all export markets will be in a position to pay for such improvements in quality, competitive disadvantages and decrease in sales may occur.

The upward trend in noise abatement costs, thus, lead to a change in the structure of production to the disadvantage of ~~high-carriage~~ goods, owing to the fact that their trading radius is reduced and the competitiveness on the individual markets impaired. This will have a stunting effect on the future investment activities of the producers affected.

5. The Employment

All in all, the stricter regulations regarding traffic noise prevention will give positive impulses, particularly to the building and glass industries, the craftsmen's trade, the automotive industry and, due to the increased fuel consumption, also the mineral oil trade and industry. In this context, the increase in fuel consumption can be compensated for only to a small extent by the saving of energy in apartments provided with soundproofing windows.

The soundproofing measures taken on buildings and traffic structures, such as road and bridges, have the following effects on the employment situation:

- approximately 10000 to 12000 additional work places in the case of noise prevention strategy A;
- approximately 20000 to 23000 work places in the case of noise prevention strategy B;
- approximately 24000 to 29000 work places in the noise prevention strategy C.

In the event of noise prevention measures being taken on vehicles with the effect of an average emission reduction by 5 dB(A), a positive effect on the employment situation in terms of 25000 to 30000 additional work places may be expected.

The noise control measures taken along federal trunk roads and roads to be maintained by the administrations of federal member states and municipalities result in

- approximately 4000 to 5000 additional work places at a pair of limit values of 75/65 dB(A);
- approximately 14000 to 17000 additional work places at a pair of limit values of 70/60 dB(A);
- approximately 40000 additional work places at a pair of limit values of 65/55 dB(A), on the assumption that the additional reduction by 5 dB(A) is achieved by a long-term emission reduction on vehicles.

If the noise prevention measures planned to taken also on buildings and traffic structures of the existing road system are to be paid out of public budgets, then either other public expenditure must be deferred or new sources of income must be tapped. Both forms of financing, however, will no doubt cause elimination of work places in other fields of activity.

increasing
high transport
costs

order of
magnitude
only.