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Hoofdonderzoek naar de
reistijdwaardering in het
vervoer van goederen
over de weg (Main
Survey into the Value of
Time in Freight Transport
by Road)

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TR-110-AVV

April 2004

Prepared for the AVV Transport Research Centre

Approved for public release; distribution unlimited

The research described in this report was prepared for the AVV Transport Research Centre.

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Published 2004 by the RAND Corporation
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Summary

A study was carried out for AVV Transport Research Centre to establish monetary values for transport time and reliability in goods transport by road in the Netherlands. This study is an update of an investigation from 1992, in which the segmentation has been adapted to reflect the increased importance of container transport. The new values are derived for use in cost-benefit analyses of infrastructure projects, that often have transport time savings as one of the major benefits. The present study consists of revealed preference (RP) and stated preference (SP) interviews among shippers and carriers in road freight transport. On the basis of these interviews, discrete choice models were estimated. These models provide trade-off ratios between transport time and transport costs and between reliability and transport costs of time, which in combination with the factor costs give the monetary values of transport time and reliability.

The trade-off ratios that were found in the SP/RP survey vary between 0.79 and 0.98, depending especially on the commodity segment. This implies that an increase in transport time of for instance 10% is regarded as having the same disutility as 8-10% higher total transport costs. This shows that the respondents do not see all transport cost as variable with changes in transport time. The trade-off ratios more or less correspond to the share of the labour cost of the drivers, the distance dependent cost (especially fuel) and the fixed transport cost (especially depreciation on vehicles) in the total transport costs (86%). The trade-off ratios of 0.79 – 0.98 do not mean that respondents will take exactly these cost items fully into account and will not include any other cost items in their valuation of transport time. It is more likely that the trade-off ratios found imply that the respondents do not include these three cost items fully in the value of time, and that they add costs that are related to the commodity itself or the distribution system in a broader sense, if relevant. Such additional costs can be production losses, interest lost, and less efficient inventory and distribution logistics than would be possible at shorter transport times. On average the contribution of these aspects to the value of time of the respondents will not be very high, but they can play a role. Furthermore, these aspects are of importance in the valuation of transport time reliability.

Using the trade-off ratios from the SP/RP survey and the factor costs from NEA, TNO-Inro and Transcare (2003), the following values of time for road freight transport in The Netherlands are obtained.

Hoofdonderzoek reistijdwaardering in het vervoer van goederen over de weg

New values of time for goods transport by road

Segment	Value of time (Euro 1-1-02) per transport per hour	Value of time (Euro 1-1-02) per tonne per hour
Low value raw materials and semi-finished goods	38	3.49
High value raw materials and semi-finished goods	49	3.88
Final products, loss of value	38	6.75
Final products, no loss of value	36	6.75
Containers	42	3.35
Total road transport (<i>within-mode</i> data)	37	5.28
Total road transport (all data)	44	6.33

In this project, the valuation of reliability has been studied as well. The model analyses show that a 10%² change in reliability (measured as the percentage not delivered on time) is equivalent to the following costs:

- 0.67 Euro per transport per hour for low value raw materials and semi-finished goods;
- 0.87 Euro per transport per hour for high value raw materials and semi-finished goods;
- 1.78 Euro per transport per hour for final products with loss of value;
- 1.67 Euro per transport per hour for final products without loss of value;
- 1.90 Euro per transport per hour for containers;
- 1.15 to 1.20 Euro per transport per hour for total freight transport by road.

In the User Manual on the Value of Time in Freight Transport, produced as part of the same study, recommendations can be found for applying the values of time obtained in this study in the evaluation of transport projects.

² The percentage used here (10% change) is an arbitrary example.