Updated methodological note to the
14th Road Safety Performance Index (PIN) Report

June 2020

1. Monetary valuation of preventing one road death (VPF)

Road collisions result in many kinds of social and economic costs, such as medical costs, production loss, human losses, property damage, settlement costs and costs due to congestion.[1]

In countries where the monetary value attributed to human losses is estimated on the basis known as Willingness-To-Pay (WTP), human losses constitute the largest part of road collision costs.

In the case of road deaths, other kinds of cost represent only a very small part of the total costs. The number of deaths as a consequence of collisions and road death data in the EU are reliable. ETSC therefore decided to focus attention first upon the valuation of human losses resulting from road deaths.

These human losses cover harm in the form of suffering, pain and loss of the joy of living of the person killed as well as the sorrow and disruption experienced by their family and friends. It is important for policy making and its supporting research to be able to attach a value to this harm in monetary terms. Information about costs of inadequate road safety is used in the preparation and assessment of national road safety policy, and cost-benefit analysis is increasingly applied to set priorities for road safety measures.

The monetary Value of the human losses avoided by preventing one road death (VPF) is estimated using the Willingness-To-Pay approach to estimate human cost. Willingness-To-Pay (WTP) is established as an appropriate scientific method for estimating the monetary value to be attributed to preventing road deaths in the context of policy formulation and economic evaluation. The WTP method is based on estimating the amount of money people, as a society, are prepared to pay to prevent human suffering.[2]

The use of WTP valuations in transport safety has been advocated by ETSC since 1997 [3]. In doing so, ETSC wishes to make clear two important points:

- The VPF in no way represents a monetary valuation of the lost life of a person who has been killed: it is instead a statistical valuation of achieving small reductions in risk to large numbers of road users in such a way that some one of them, whose identity can never be known, escapes being killed.

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[1] SWOV Fact Sheet (2012), The valuation of human losses of road deaths, http://bit.ly/2uajgns
[2] Ibid
[3] ETSC (1997), Transport Accident Costs and the Value of Safety.

In welcoming a single EU-wide value for the VPF for use in consideration of policies and measures for transport safety at the EU level, it is recognised that the value used in this context within each Member State remains a matter for the country concerned. because such considerations are national or more local matters and GDP/head differs quite widely among Member States.

2. Updated ETSC methodology to estimate monetary valuation of preventing one road death (VPF): from factor costs to market prices

In 2011, ETSC developed a monetary valuation of the value of preventing a road death (VPF) in the EU based mainly on practice in countries which, to our knowledge, used WTP in 2009. ETSC expressed the value in terms of factor costs: the decision to use factor costs was strongly influenced by the guidelines stemming from an EU-project HEATCO for developing harmonised European approaches for transport costing and project assessment[4].

Since 2011, the ETSC has been annually updating the WPF factor cost value of € 1.7 million (in 2009) in the EU using a sound method that takes into account changes in purchasing power and GDP/head in the EU.[5] In the latest publication – the 13th PIN annual report (2019) – the resulting VPF value equals € 2.2 million.

The international consensus regarding VPF is now to express it in terms of market prices. This is reflected in the EU Handbook on the external costs of transport (2019)[6]. Therefore, in 2020 ETSC has decided to rebase its VPF valuation adopted in PIN in 2011 from factor costs to market prices.

The human cost estimate provided in the EU Handbook is in principle a counterpart for 2016 of the estimate that was used in the 11th PIN annual report, namely a largely willingness to pay (WTP) or related estimate of the value of preventing a road death (VPF).

The value in the EU Handbook is € 2.91 million in 2016 whereas the value in the 11th PIN Annual report is € 2.02 million for the same year.[7] Both of these values exclude from the human cost the value of subsequent consumption that the killed person would have enjoyed, to avoid double counting with production loss.

Of the difference of € 0.9 million, rather less than one-half stems from difference between the Willingness-To-Pay (WTP) estimate used in the EU Handbook, stemming from an OECD meta-analysis[8] of all such estimates to be found in the global literature up to about 2011, and the ETSC estimate stemming from values that were then used in eight European countries in 2009.

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[4] Bickel, P. et al (2006) HEATCO deliverable 5. Proposal for harmonised guidelines. EU-project developing harmonised European approaches for transport costing and project assessment (HEATCO). Institut für Energiewissenschaft und Rationelle Energieanwendung. http://heatco.ier.uni-stuttgart.de/ 4 ETSC (1997), Transport Accident Co

[5] ETSC (2011), Methodological note – PIN report 2011 Chapter 1, http://bit.ly/3a8sVLK

[6] European Commission (2019), Handbook on the external costs of transport, http://bit.ly/2t4gAr7

[7] ETSC (2017), 11th Annual Road Safety Performance Index (PIN) report, www.etsc.eu/pin11

[8] OECD (2012), The Value of statistical life: a meta-analysis, http://bit.ly/2TbW7vi

The rest of the difference stems from the ETSC estimate being expressed at factor cost whereas the EU Handbook estimate is expressed in market prices. Factor cost subtracts from consumer expenditure the proportion of that expenditure which represents tax of various kinds as distinct from the real value of resources being consumed, and thus leads to values typically 20% or so lower than at market prices.

In short, to be in agreement with the current international practice, ETSC has decided to move from factor costs to market prices and accepted the 2016 value of € 2.91 million as a new base value that will be applied to subsequent years.

The resulting value of VPF in the 14th PIN annual report 2020 has been adjusted in the ways recommended by the EU Handbook to market prices and is €2.96 at 2019 prices.