Elasticity of Demand for Petrol in Ireland: A Reply

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I thank Dr. Arthur for his interesting and thoughtful comment. I am afraid that he rather misquotes me when he says that I estimated the elasticity as being between $-1{\cdot}2$ and $-1{\cdot}7$. My interpretation (stated in the conclusions) was that, taking everything into account the elasticity "can scarcely be much less than unity".

He is quite correct in saying that the sources of the high-elasticity estimates are the log (multiplicative) form of the function and the introduction of D, the dieselisation factor. The log form was chosen simply because it gives the best statistical results; the tables in the "comment" confirm this. In working on the subject I tried and rejected both linear and polynomial forms because the log form gave uniformly higher t- and R-values. It is also correct to assume that my programme used the value unity in the D series for all years after 1963. Since the values of the variable are at best approximate, there can scarcely be any practical objection to this substitution.

Dr Arthur's main emphasis is on replacing my D variable with a new variable C' which allows for the commercial demand for diesel by taking into account the stock of light commercial vehicles and converting them to "equivalent cars". When this is done the measured elasticity is markedly lower. I have, however, several reasons for doubting the value of this procedure. In the first place, it conflicts with the opinions of those people in the motor trade in Ireland whom I consulted when writing the paper. They felt that, while there continued to be a fair number of light petrol driven commercial vehicles on the roads, in the period 1953–63 more and more of the high-mileage ones were becoming diesel-engined because of the substantial saving in running costs offered by diesel. Thus the number of vehicles is hardly the most important consideration.

The performance of C' as measured by its t-values is markedly less satisfactory

than that of *C*. In addition to this there is the fact that in the results in Tables 3 and 4 of my paper which refer to the period 1960–69 where *D* is dropped, the elasticity remains in the region of −·75. Finally, while Dr. Arthur's last equation is statistically very satisfactory, my own starred equation in Table 1 is superior in all the *t*-values and the *R*-value.

My *D*-factor is, admittedly, an approximation but its inclusion makes an important change in the measured elasticity. Since its coefficients in Tables 1 and 2 are significant at the 95 per cent level I do not think that we can dismiss it too lightly.

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