

Ford's views on the Commission's study of dealer efficiency

1. Ford had a large number of substantial comments and criticisms of our analysis of dealer efficiency: in its view it was wholly unacceptable as an efficiency study, and no inferences whatsoever could be made on its basis. Claims by us that the study had only limited aims did not remove Ford's fundamental criticisms.

Lack of any benchmark for comparison

2. Ford said we had asserted that the degree of variation in dealer efficiency was probably greater than would be expected in a fully competitive industry. However, we had not provided any evidence to suggest that the snapshot variation in dealer efficiency would be smaller, or would not exist, in a competitive market. We had provided no analysis of the degree of variation in efficiency of suppliers in some benchmark competitive market. Moreover, even supposing that a significant degree of inefficiency could be shown to exist, there was also the question of whether removing SED would improve efficiency. Ford considered that SED promoted competition.

The Commission's admission of flaws in its analysis

3. Ford noted that we had recognized certain limitations associated with our models: certain explanatory variables were likely to have been omitted; there might have been errors in the data; the manpower study did not allow for differences in pay and skills; the models did not allow for differences in the efficiency with which dealers used other cost inputs, such as spare parts or capital investment; and the cost model suffered from being based on only a small sample size. We had concluded that the models were very simplified and based on less than ideal data. However, despite these limitations, we continued to assert that there was scope for considerable cost savings by dealers.

Data consistency and representativeness

4. Ford considered that if a comparative study were to be made all respondents should report their costs, turnover, and so on, in the same way. If different reporting practices were used, or any errors were to occur, the results would indicate a dispersion of efficiencies even if all dealerships were equally efficient. All the information provided needed to relate to the same time period, bearing in mind that sales and costs varied materially year on year and were seasonal. New car sales needed to be valued in exactly the same way when there had been a part-exchange (which was the case in well over one-half of new car sales) and costs needed to be treated in the same fashion by different dealers.

5. Ford said that we had attempted to address these concerns by stating that the effects of dealers' using different methods to calculate data were likely to cancel out in many cases. However, Ford considered this argument to be wholly untenable. The presence of errors and inconsistencies in the data had two implications:

- (a) First, the regression line itself might have been affected. In regression analysis, every observation would affect the specification of the regression model. If some observations were inaccurate the specification of the regression model itself could be materially affected. In particular, an error which was systematic, or which tended to be correlated with particular features or elements of the data set, would bias the regression results. Such errors were highly unlikely to cancel out.
- (b) Second, errors and inconsistencies in the data implied that the dispersion of the data points around the regression line would be increased. We had taken such dispersion to be indicative of differences in dealer efficiency, so such errors would directly increase measured inefficiency. Even if such errors were to cancel out (in the sense that for every erroneous observation lying

above the regression line there were a corresponding erroneous observation lying at an equal distance below the regression line), our analysis would still lead to an overstatement of inefficiency levels. This was because our methodology was to sum all observations lying above the regression line, such sum being unaffected by any corresponding observations lying below the regression line. Far from cancelling out, as we claimed, such differences would be expected greatly to magnify measured inefficiency. Ford said that this fatally undermined our methodology.

6. In this connection, it was relevant to note that in carrying out our analysis, we had contacted certain outlying dealers to ascertain whether there was a sound justification for leaving them out of it. Of the dealers contacted (presumably a small number), two admitted to providing us with incorrect data. In these circumstances, Ford considered that there was a material risk that if the data supplied by all respondents had been checked, a significant number of respondents would have been found to have provided inaccurate data.

7. Ford disagreed with our assertion that staffing figures and turnover levels were less likely to be subject to miscalculation than other financial variables that required more subjective assessment. We had provided no evidence on this issue. Moreover, Ford considered that it might have been far from straightforward for dealers to calculate their staffing levels when they employed seasonal or part-time staff. Difficulties might also have arisen in allocating turnover to different business activities (particularly where dealers were also involved in other businesses not considered by the survey).

8. Ford considered that it was important to ensure that the sample of firms surveyed was representative, particularly where valid data were limited to a small number of firms. Our analysis of dealership staffing levels was based on 231 dealerships, or less than 4 per cent of the UK total. The position was even worse in relation to our analysis of dealership costs, where our sample of only 81 dealerships represented at most 1.4 per cent of all UK dealers.

Differences in operating environment

9. Ford said that our regressions had failed to include all the relevant variables which determined staffing levels and costs. Differences in dealers' operating environments would give rise to dispersion in observed operating costs and staffing levels for reasons that had nothing to do with relative efficiency. In particular, Ford's Customer Marketing Area strategy carried out local assessments of dealer viability, taking into account local conditions, mixes of business (for example, dealers serving more fleet customers might have lower staffing costs per unit of turnover) and population demographics (for example, dealerships serving an affluent area might be expected to sell a greater proportion of higher-valued cars than those operating in a poorer area). There would also be considerable differences between areas in, for example, land costs and wage costs. Optimal dealer size would vary between areas (with national coverage being an important strategic objective, even if certain dealers were based in higher cost areas). In our cost regression, dealers facing high costs owing to their operating environments were characterized incorrectly as inefficient, and vice versa.

10. Ford said that we claimed to address the need for comparing like with like by stating that small dealerships were compared with small dealerships and large dealerships with large dealerships. We also stated that dealerships which concentrated on a particular mix of business were effectively compared with other dealerships of that type. However, Ford said that our analysis failed entirely to take into account the fact that different dealerships operated in different environments, which could have a material impact on their optimum levels of staffing and costs, and as such failed to compare like with like. This point was demonstrated by the fact that several outlying dealers had told us that they operated in rural areas and had to have a high number of staff to service a large but thinly populated area. In our staffing model such suppliers were regarded as inefficient despite the fact that they operated in environments which required high staffing. We were effectively asserting that such dealers would not exist in a competitive market, notwithstanding the fact that this would compromise manufacturers' geographical representation and customer convenience.

Differences in staff types and service levels provided

11. Ford said that our staff regression made no differentiation between staff employed as regards their wages and the nature of the work they performed. For example, it might have been more cost

effective and efficient to employ one master technician and two junior staff, rather than two master technicians. However, our staff regression would erroneously treat a dealer employing two master technicians as more efficient than one employing only one with two junior assistants.

12. In our model, part-time employees were counted as being equivalent to half a full-time employee. Ford expressed concern that our analysis might have been sensitive to this assumption. We had asserted that the dealership staffing model was not sensitive to significant changes in this assumption, but had provided no evidence to support this view and had failed to define what we meant by 'significant'.

13. More generally, we had provided no evidence that the models were not sensitive to changes in any of the other variables under consideration, or indeed to changes in the model specification.

Differences in staffing policies and service provision

14. Ford said that we had made no allowance for the fact that different manufacturers might simply have had different policies on dealer staffing, designed to be appropriate to their marques. For example, it might have been the case that suppliers such as Jaguar and BMW, as high quality-of-service marques, might have preferred higher dealership staffing levels relative to sales than suppliers such as Ford and Vauxhall. However, if this had been the case, our analysis would simply have led to Jaguar and BMW dealers being regarded as inefficient.

15. Ford said that we had failed to specify general staffing and cost functions which would permit the regression models to reveal the precise form of these functions (for example, the nature of economies of scale) as opposed to the arbitrary and apparently untested restrictions imposed on the regressions (for example, linear models). We had said nothing about whether alternative functional forms were considered. It was possible that the inclusion of logarithmic terms or squared terms as explanatory variables would have had greater explanatory power. The use of a linear model seemed particularly inappropriate when there was a presumption that economies of scale existed. The inclusion of a constant term allowed for economies of scale, but it did so in a very restricted form. All that was permitted was that the relationship between the number of employees and turnover had a positive intercept but thereafter was a linear function. If the true relationship was a curve the fit of the linear model would have been poor. Inclusion of higher powers of the turnover variables might have improved the fit and efficiency of the model. We had wholly ignored Ford's concerns in this regard.

Econometric criticisms

16. Ford said that our diagnostic analysis of its econometric models was virtually non-existent. Diagnostic tests might have revealed whether a model was mis-specified. They should be carried out first on the basis of a general model that encompassed the various economic theories. This should then be simplified to a specific model if statistical tests indicated that such simplification did not undermine its explanatory power and diagnostic tests were passed (this was commonly referred to as a 'general to specific' approach). It was uncontroversial that econometric models could not be assessed solely by reference to the proportion of the variation in the dependent variable, ie staff levels and costs, which was explained by the variation in the explanatory variables, for example turnover. (This was the R^2 statistic cited with the regressions.)

17. Ford was concerned that we had declined to provide it with the data on which our regression analyses were based, because we could not preserve confidentiality, even if the names of the dealers surveyed were deleted. This had severely constrained Ford's ability to comment on the regression models.

18. Ford considered that there were three points raised in our analysis which strongly suggested that our regression models were fundamentally mis-specified and flawed:

- (a) The difference between predicted and actual staff levels generally increased as the number of employees increased. (This phenomenon was referred to as heteroskedasticity, which strongly suggested that the model was mis-specified.)

- (b) We had indicated that nine large dealerships (ie under 4 per cent of the 231 surveyed) would account for over 40 per cent of our estimated staff reduction, and two large dealerships (ie under 2.5 per cent of the 81 surveyed) for 23 per cent of our estimated reduction in staff costs. Ford said that it was standard practice for such outliers to be excluded from regression analyses as they might have had a disproportionately large impact on the regression results, particularly where such observations might have been attributable to inconsistent or unrepresentative data (which was a particular issue in the present case). In a regression analysis, every observation would affect the specification of the regression model. If certain observations were inaccurate the specification of the regression model itself could be materially affected. Ford referred us to academic work by Maddala which indicated that inaccurate observations did not merely cancel one another out. We had provided no evidence to support our assertion that the results of the regression analysis were not sensitive to such potential data problems.
- (c) Ford noted that the staff costs regression found the presence of economies of scale, whereas the dealership costs regression and the chart of turnover per employee against number of employees found no evidence of economies of scale. Accordingly, there were inconsistencies in our evidence.

Dynamic analysis

19. Ford observed that the dynamic competitive process could not be assessed by reference to observations derived from a single snapshot in time. We had implicitly assumed that any dealer inefficiency would not be eroded over time. Indeed, the whole purpose of Ford's benchmarking of dealers in terms of costs and customer service was to provide the higher cost and less consumer-focused dealers with focused feedback as to the areas of their business which could be improved. In addition, less profitable or less effective dealers were prone to takeover by more efficient rivals (which might be individual undertakings or dealer groups). Manufacturers clearly had every interest in ensuring that their dealer networks were efficient, as otherwise they would lose market share to rivals which could offer lower-priced cars and deliver higher levels of customer satisfaction, and would exert pressure on inefficient dealers to improve their performance. Thus, over a period of time, dealers could be expected to leapfrog one another, so that an individual dealer appeared relatively inefficient at one time and more efficient at another.

20. Moreover, it was important to note that dealers' staff levels and costs could not be instantly varied in response to changes in market conditions (for example, changes in sales owing to market growth or decline or market share changes, or changes in costs, because of the adjustment costs of, for example, hiring and firing) that dealers faced in changing the scale of their operations. More generally all businesses' performance varied year on year, and their success needed to be judged over time. Accordingly, any snapshot analysis could not judge whether the outliers simply happened to have been fortunate or unfortunate over the period, or were consistently over- or under-performing. Thus, only a longer-term study, covering several years, would show whether certain firms were consistently under-performing and could rightly be deemed to be inefficient. The data provided in the study provided no means of distinguishing whether or not this was the case, and therefore the question as to whether inefficiency existed could not be said to have been answered in the affirmative. We had noted that data for other years were not available, although this did not, in Ford's view, indicate that our snapshot analysis could be relied upon to assess what was very much a dynamic process. We had also noted that we had no reason to believe that the year we had analysed was different from any other, or that the results were significantly affected by sudden changes in activity levels. We provided no evidence to support this.

21. Ford said that we had stated that notwithstanding the limitations of our models, manpower productivity comparisons were widely used in broad-brush efficiency comparisons. Ford was not aware of such studies being widely used. In particular, Ford noted that our studies fell considerably short of the standards required by OFWAT when using multiple regression analysis for comparative efficiency studies.

22. To conclude, Ford considered that we had failed to provide any reliable evidence that the system of SED led to inefficiencies which would not exist in some (unspecified) benchmark competitive market.