

emphasized on Figure 1, which represents the estimated average variable costs (AVC) and marginal costs (MC) for the sample mean company in 1996⁶⁵ and highlights a trend decreasing with the level of output⁶⁶. So far as *LRS* are concerned⁶⁷, the estimate, 1.86, implies a sub-optimal scale with respect to the long-run equilibrium. On the whole, these results highlights the existence of unused capacity and support the conjecture that local monopoly is the relevant organization in the industry, at least for medium-sized firms⁶⁸.

Table 3. Technology characteristics evaluated at the mean of the data (average firm)*

Returns to scale		Elasticity with respect To commercial speed [β_{SP}]	Rate of Hicks neutral technological change [- β_τ]
Short-run [$1/\beta_y$]	Long-run [($1-\beta_k$)/ β_y]		
1.9519 (0.0579)	1.8604 (0.0289)	-0.2352 (0.0372)	0.0137 (0.0046)

* Estimated asymptotic standard errors are given in parentheses.

The estimated frontier cost elasticity with respect to the average speed of the network in Table 3 bears out our insights about the influence on the production process of the specific environmental conditions characterizing the area where the service is provided. Increasing speed of LPT vehicles by 10 percent permits to reduce the level of operating costs for the average firm by about 2.3 percent. This result underlines the importance of appropriate public policies concerning the local traffic regulation.

⁶⁵ Year 1996 represents the average period of observation in our sample.

⁶⁶ To predict the trend of AVC and MC presented in Figure 1, only the level of output has been let to vary across the sample (from the smallest value, 33 millions of places*travelled-kms, up to 1,409,919 millions), all the other variables (input prices, capital stock and commercial speed) remaining unchanged at the average firm values.

⁶⁷ We can evaluate the long-run returns to scale by applying the algorithm first suggested by Caves et al. (1981) and indicated in Table 3.

⁶⁸ In fact, short- and long-run scale economies have been calculated at all production levels of the sample (with the other variables fixed at the average firm values) and increasing *SRS* and *LRS* are observed at all data points. Since the cost elasticity with respect to output does not depend on the starting production level in the preferred frontier model (the quadratic term for output, β_{yy} , is specified to be zero), the value of *SRS* is constant throughout the sample and equal to 1.95. The estimate of *LRS*, on the contrary, depends on the output through the cost elasticity with respect to capital (in which $\beta_{yk} = 0.05$) and decreases from 2.81 for the lowest production level (corresponding to Sondrio ASM in 1993) to 1.57 for the highest production level in the sample (corresponding to Torino ATM in 1994).