

A calibration of the retail impact of Electronic Shelf Labels (ESL)

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Abstract

Electronic price display technologies like Electronic Shelf Labels (ESLs) offer unprecedented capabilities to the retailer in terms of managing prices and price changes. Nevertheless, their adoption and use in large supermarket retail has been neither widespread nor uniform. Industry personnel often point to the rather hefty capital outlay as a reason for this hesitance. This calls into question tradeoffs between the costs and benefits of ESLs for both the retailers and the consumers. Casual accounts of the technology suggest ESLs significantly decrease the variable costs and lead times associated with changing prices. These may afford additional degrees of freedom to the retailer to engage in effective demand and customer preference discoveries. The likely retail savings, procedural efficiency and value addition thus generated are argued to eventually parlay into consumer benefits in the form of better prices and offers. No doubt, spurred by this, some states in the U.S. have even passed pricing laws that exempt retailers from more stringent pricing requirements if they adopt the ESL technology. Yet, few systematic studies exist that calibrate the scale and scope of such retail savings and estimate the impact on customers and retailers. In this paper we first present some empirical data to describe the magnitude of such savings in the context of a specific grocery supermarket. Second, we summarize results from a couple of empirical studies that have attempted to calibrate the impact on consumers. We then attempt to calibrate the impact of ESL technologies on retailers by considering point of sale data in a couple of supermarket chains that implemented the ESL technology. Lastly, we explore possible drivers of the impact. The results show that while the impact on customers could be contextual, there are significant benefits to retailers to offset the large capital outlays. These retail benefits accrue both in terms of savings as well as revenues. We discuss some key strategy and policy issues that follow from these results.