

WEB APPENDIX

A Control Function Approach to Endogeneity in Consumer Choice Models

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We obtained information on households' television choices, the characteristics of households, and the prices and attributes of the cable franchise serving the household's geographic area. This information comes from two sources, the Forrester Technographics 2001 survey and Warren Publishing's 2001 Television and Cable Factbook. The Forrester survey was designed to be a nationally representative sample of households. It asks respondents about their ownership and use of various electronic and computer-related goods. To these data we match information about cable franchises from Warren Publishing's 2001 Factbook, which is the most comprehensive reference for cable system attributes and prices in the industry.

To minimize sampling error in market shares, we restricted our analysis to markets where there are at least 30 respondents in the Forrester survey. This screen yields 300 cable franchise markets with a total of almost 30,000 households. We randomly choose 172 of these 300 markets, so as to reduce the number of constants that needed to be estimated. From these 172 markets, we randomly selected 11810 households, oversampling those households from smaller markets (again, to minimize sampling error). These 11810 households are used in the estimation with weights equal to the inverse of their probability of being sampled.

As stated in the body of the paper, the alternatives in the discrete choice model are:

expanded basic cable, premium cable (which can only be purchased bundled with expanded basic), Direct Broadcast Satellite, and no multi-channel video (i.e., local antenna reception only). In the Forrester survey, respondents reported whether they have cable or satellite, and the amount they spend on premium television. We classified respondents as having premium if they reported that they have cable and spend more than \$10 per month on premium viewing, which is the average price of the most popular premium channel, HBO. We classified respondents as choosing expanded basic if they reported that they have cable and they spend less than \$10 per month on premium viewing.

The survey provides various demographic characteristics, including family income, household size, education, and type of living accommodations. It also includes an identifier for the household's television market, which can be used to link households to their cable franchise provider.

The cable franchise market of each surveyed household was matched to cable system information from Warren Publishing's 2001 Television and Cable Factbook. The attributes we include are the channel capacity of a cable system, the number of pay channels available, whether pay per view is available from that cable franchise, the price of basic plus expanded basic service, and the price of premium service. We also obtain from the Factbook the number of over-the-air channels available in the franchise market. Finally, for the price of satellite, we use \$50 per month plus an annual \$100 installation and equipment cost.

