

# The Price Effects of a Large Merger of Manufacturers: A Case Study of Maytag-Whirlpool

## Web Appendix

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### DATA APPENDIX

This section describes the product characteristics available in the NPD data and used as controls in specification 5. For dishwashers, we have dummy variables indicating if the product is stainless steel, has a stainless steel look, is black, has some other color, is not digital, is energy star certified, has a stainless steel interior, has 1-4 cycles, has 5 cycles, has 6 cycles, has sound control, and is portable.

For refrigerators, we include dummy variables indicating if the product is stainless steel, has a stainless steel look, is black, is some other color, has an ice and water dispenser in the door, has crisper and meat drawers, is energy star certified, has an ice maker, has wire shelves, and has a water filtration system. We also include 8 depth dummies, 7 height dummies, 14 capacity dummies, and 5 width dummies.

For clothes washers, we include dummy variables indicating if the product is stainless steel, black, some other color, is pre-stacked or stackable, has a soil sensor, has a load sensor, has between 700 and 1000 RPMs, and 8 dummies indicating number of cycles and 3 dummies indicating capacity. We do not include an indicator for front-loading washers because this indicator was collinear with the other controls we used. Recall, we focus on washers produced by Maytag and Whirlpool, which were not large manufacturers of front loading washers.

For clothes dryers, we include dummy variables indicating if the product is stainless steel, black, some other color, has a delicate cycle, has a drop down door, has a dryer rack included, is more than 27 inches in width, is gas powered, and 3 capacity dummies, 7 number of program dummies, and 7 temperature dummies.

For freezers, we include variables indicating if the product is stainless steel, has a defrost drain, has an ice maker, has a light, has a lock, has baskets, is a chest, and 9 size dummies. We also include indicators of whether the freezer has 3, 4, 5, or 8 shelves.

For ovens, we include dummy variables indicating if the product is stainless steel, has no cleaning option, is electric, has a convection fan, is a double oven, has a microwave, 4 capacity dummies, and 2 width dummies.

For cooktops, we include dummy variables indicating if the product is stainless steel, is black, has an electronic timer, has an electric coil, has a mechanical timer, and 2 width dummies.

For ranges, we include dummy variables indicating if the product is stainless steel, has a stainless steel look, is black, has some other color, includes a convection oven, includes a microwave, is double conventional, has electronic controls and timer, has a mechanical timer, has an electric coil, has sealed burners, has electronic ignition, is a slide in range, and 4 capacity dummies and 4 width dummies.

ADDITIONAL TABLES

TABLE B1—COMPARISON OF ESTIMATED PRICE EFFECTS RELATIVE TO COOKTOPS USING SKU FIXED EFFECTS AND PRODUCT CHARACTERISTICS

	<u>Dishwashers</u>		<u>Dryers</u>		<u>Refrigerators</u>		<u>Washers</u>	
	Yes	No	Yes	No	Yes	No	Yes	No
Post*Whirlpool	0.0432 (0.0228)	0.0415 (0.0234)	-0.0292 (0.0308)	-0.0298 (0.0314)	-0.0196 (0.0280)	-0.0209 (0.0283)	-0.0277 (0.0365)	-0.0282 (0.0365)
Post*Maytag	0.0327 (0.0211)	0.0324 (0.0216)	0.0332 (0.0199)	0.0327 (0.0206)	-0.0310 (0.0432)	-0.0316 (0.0434)	0.0167 (0.0251)	0.0176 (0.0257)
SKU Fixed Effects	Yes	No	Yes	No	Yes	No	Yes	No
Product Characteristics	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1392	1392	1449	1449	2025	2025	1275	1275
Number of SKUs	153	153	179	179	231	231	155	155

Notes: Estimated on the set of products that were sold before and after the merger. Standard errors in parentheses allow for arbitrary heteroskedasticity and serial correlation within an SKU. Calculated on data from April 2005 through September 2008.

TABLE B2—COMPARISON OF ESTIMATED PRICE EFFECTS RELATIVE TO FREEZERS USING SKU FIXED EFFECTS AND PRODUCT CHARACTERISTICS

	<u>Dishwashers</u>		<u>Dryers</u>		<u>Refrigerators</u>		<u>Washers</u>	
	Yes	No	Yes	No	Yes	No	Yes	No
Post*Whirlpool	0.120 (0.0360)	0.105 (0.0331)	0.0557 (0.0374)	0.0433 (0.0345)	0.0866 (0.0391)	0.0663 (0.0348)	0.0575 (0.0420)	0.0466 (0.0382)
Post*Maytag	0.109 (0.0353)	0.0979 (0.0327)	0.121 (0.0343)	0.110 (0.0314)	0.0698 (0.0422)	0.0511 (0.0372)	0.106 (0.0366)	0.0975 (0.0330)
SKU Fixed Effects	Yes	No	Yes	No	Yes	No	Yes	No
Product Characteristics	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1088	1088	1145	1145	1721	1721	971	971
SKUs	121	121	147	147	199	199	123	123

Notes: Estimated on the set of products that were sold before and after the merger. Standard errors in parentheses allow for arbitrary heteroskedasticity and serial correlation within an SKU. Calculated on data from April 2005 through September 2008.

TABLE B3—COMPARISON OF ESTIMATED PRICE EFFECTS RELATIVE TO OVENS USING SKU FIXED EFFECTS AND PRODUCT CHARACTERISTICS

	<u>Dishwashers</u>		<u>Dryers</u>		<u>Refrigerators</u>		<u>Washers</u>	
	Yes	No	Yes	No	Yes	No	Yes	No
Post*Whirlpool	0.0268 (0.0320)	0.0196 (0.0323)	-0.100 (0.0452)	-0.102 (0.0446)	-0.0392 (0.0324)	-0.0433 (0.0307)	-0.0656 (0.0444)	-0.0667 (0.0424)
Post*Maytag	0.0196 (0.0311)	0.0165 (0.0314)	-0.0388 (0.0376)	-0.0413 (0.0367)	-0.0491 (0.0491)	-0.0516 (0.0477)	-0.0228 (0.0358)	-0.0205 (0.0348)
SKU Fixed Effects	Yes	No	Yes	No	Yes	No	Yes	No
Product Characteristics	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1088	1088	1145	1145	1721	1721	971	971
Number of SKUs	120	120	146	146	198	198	122	122

Notes: Estimated on the set of products that were sold before and after the merger. Standard errors in parentheses allow for arbitrary heteroskedasticity and serial correlation within an SKU. Calculated on data from April 2005 through September 2008.

TABLE B4—COMPARISON OF ESTIMATED PRICE EFFECTS RELATIVE TO RANGES USING SKU FIXED EFFECTS AND PRODUCT CHARACTERISTICS

	<u>Dishwashers</u>		<u>Dryers</u>		<u>Refrigerators</u>		<u>Washers</u>	
	Yes	No	Yes	No	Yes	No	Yes	No
Post*Whirlpool	0.0299 (0.0170)	0.0284 (0.0173)	-0.0339 (0.0298)	-0.0349 (0.0301)	-0.0143 (0.0271)	-0.0160 (0.0271)	-0.0341 (0.0347)	-0.0351 (0.0346)
Post*Maytag	0.0168 (0.0163)	0.0164 (0.0165)	0.0285 (0.0168)	0.0275 (0.0171)	-0.0257 (0.0416)	-0.0266 (0.0416)	0.0104 (0.0211)	0.0105 (0.0213)
SKU Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Product Characteristics	Yes	No	Yes	No	No	Yes	No	Yes
Observations	2072	2072	2129	2129	2705	2705	1955	1955
Number of SKUs	213	213	239	239	291	291	215	215

Notes: Estimated on the set of products that were sold before and after the merger. Standard errors in parentheses allow for arbitrary heteroskedasticity and serial correlation within an SKU. Calculated on data from April 2005 through September 2008.