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RESEARCH ARTICLE

INFORMATION DISCOVERY AND THE LONG TAIL OF MOTION PICTURE CONTENT

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Appendix A

To show how the DVD sales for movies are affected by the intensity of their broadcast, we estimate specification (1) with total number of times a movie is shown during its broadcast window as the treatment variable. The movies in our sample were broadcast, on average, 35.4 times in the 30 week-long broadcast window (standard deviation = 24.8, min = 1, max = 108). Table A1 reports the resulting coefficient estimates, which shows that the DVD sales for a movie increase with the intensity of its broadcast.

Table A1. Estimates for DVD sales

Dependent Variable: Log(DVD sales)	Coefficient Estimates (Robust cluster corrected std. errors)
Blackout period dummy	0.132*** (0.05)
Number of movie broadcast	0.002** (0.001)
N	17194 (314 movies)
R^2	0.947

***Statistically significant at the 1% level (two-sided test).

**Statistically significant at the 5% level (two-sided test).

Appendix B

One might worry that our observed broadcast window effect is mainly due to differences in decay rates of popular versus less popular movies (i.e., flatter decay rates of less popular movies as compared to faster decay rates for popular movies). We test for this possibility by only taking observations for the pre-broadcast window period and randomly assigning a placebo "broadcast" treatment to the movies prior to their actual broadcast. We can then use specification (1) to test whether we see any increase in DVD sales due to this artificial treatment infused in our

data. Table B1 reports these coefficient estimates. We find a statistically insignificant coefficient estimate for the placebo treatment effect, suggesting that the treatment effect that we observe in our data is not merely due to systematically different decay patterns for the movies in our sample. We also estimated the effect of the placebo treatment applied between 1 to 5 weeks before the broadcast window and find similar results. By placing the placebo treatment right before the actual treatment, we better compare the effects of the placebo and actual treatment.

Table B1. Estimates for Placebo Treatment Effect on DVD Sales

Dependent Variable: Log(DVD sales)	Coefficient Estimates (Robust cluster corrected std. errors)
Placebo treatment dummy	-0.005 (0.042)
N	7452
R^2	0.967

Appendix C

If consumers are forward-looking, and take upcoming pay-cable broadcasts into account when deciding whether to purchase DVDs, we would expect to see a decrease in DVD sales just before the broadcast window. To test for this possibility, we take the pre-broadcast window data for our sample of movies and put up a pre-window indicator variable (D^{prewnd}) equal to 1 for the last one, two, or three weeks before the broadcast window and zero otherwise. We then run the following specification:

$$Log(S_{it}) = \alpha_i + \beta_{prewnd} \times D_{it}^{prewnd} + \delta_{oscar} \times D_{it}^{oscar} + \sum_t \delta_t \times D_{it}^t + \sum_{calwk} \delta_{calwk} \times D_{it}^{calwk} + \varepsilon_{it}$$

Table C1. Estimates for Forward-Looking Consumer Behavior

Dependent Variable: Log(DVD sales)	Coefficient Estimates (Robust and cluster corrected std. errors)		
	One Week pre-window	Two Week pre-window	Three Week pre-window
Pre-window dummy	0.022 (0.035)	-0.017 (0.02)	-0.032 (0.03)
N	8879 (314 movies)	8879 (314 movies)	8879 (314 movies)
R^2	0.964	0.964	0.964

Table C1 reports the resulting insignificant coefficient estimates for the pre-window dummy variable for one-, two-, and three-week pre-windows, showing no evidence of an unusual decline in DVD sales before the beginning of the broadcast window and thus no evidence that forward-looking behavior is impacting our results.

Appendix D

To check for the possibility that a proportionately higher number of themed movies enter the broadcast window during particular holiday seasons, we compute the genre-wise percentages of movies entering the broadcast window in each calendar month of the year and report these figures in Table D1.

Table D1. Genre-Wise Percentage Breakup of Monthly Movie Broadcast						
	Action	**Comedy**	**Drama**	**Family**	**Horror**	**Others**
JAN	12%	30%	35%	2%	7%	14%
FEB	18%	29%	21%	11%	11%	11%
MAR	14%	50%	14%	9%	9%	5%
APR	29%	50%	14%	0%	7%	0%
MAY	14%	14%	14%	21%	14%	21%
JUN	20%	40%	20%	10%	0%	10%
JUL	16%	42%	16%	6%	3%	16%
AUG	11%	25%	39%	7%	7%	11%
SEP	3%	24%	34%	10%	7%	21%
OCT	7%	25%	46%	7%	11%	4%
NOV	16%	31%	31%	6%	0%	16%
DEC	8%	36%	40%	4%	4%	8%

From Table D1, we find that a higher proportion of romantic comedies enter the broadcast window in seven months of the year versus its corresponding value in month February. Likewise, we find that a higher proportion of horror movies enter the broadcast window in at least two months of the year as compared to October. In all, we do not find clear evidence of systematic release of themed movies based on the holiday seasons in our data. This is likely because, while these movies are timed to enter *theaters* during a particular holiday month, the lag between the theatrical window and the broadcast window for the entire studio's output deal is not timed to correspond to an even-year increment after the theatrical broadcast.