

Piracy and Demands for Films:

Analysis of Piracy Behavior in French Universities

Marc Bourreau
David Bounie
Patrick Waelbroeck
ENST

May 2006

Preliminary and incomplete draft

1 Introduction

Do movies face serious competition from free illegal copies available on the Internet? Is Divx “quality” good enough to compete with originals? Box office sales have slumped over the past years. But sales of DVDs have exploded over the last 5 years. Demand for movies can be separated in four segments: theaters, DVD purchase, DVD rentals, pay and Free TV. The reduction in attendance at movie theaters is part of a long term trend that has seen the percentage the population that goes weekly to movie theaters drop from 60% in 1940s to 9% in the beginning of this century, due to the strong competition of home entertainment. Although piracy could still explain part of this trend, some industry analysts attribute the recent drops in the number of box office tickets to the shortening of the time window between a movie appearance at the box office and its release in DVD format. For some titles, this window has decreased from 6 months to less than 3 months. This factor is also reflected in the revenues generated from DVDs that represented on average 59% of a film revenue in the first quarter of 2005 compared to 48% in the same period in 2004 according to Edward Jay Epstein ("Hollywood's death spiral: the secret numbers tell the story," Slate magazine, July 2005).

There are several reasons to think that movie piracy has a different nature than music piracy. First, people listen to musical CDs several times and each listening requires little attention. Indeed, people listen to music while jogging, reading, and traveling. Watching a video DVDs or going to a movie theater is a full-time activity. Secondly, music is an experience good for which the sampling effect is important: people like to listen to short samples of songs of an album before purchasing the CD. Because few people watch the same movie several times, this sampling effect is probably much weaker for movie consumption and word-of-mouth seems more important. Thirdly, music files can be efficiently transferred from one computer to another using portable storage devices, CD-

Rs or P2P networks. Burning DVDs and downloading movies from P2P network is more costly, more time-consuming and/or results in lower quality (because of the lack of subtitles, choice of language, direct access to a scene for compressed movie files). Finally, music producers generate revenues from mainly a single support (CD), while film producers generate revenues from the box office, DVD purchases, DVD rentals and TV programming.

The literature on piracy of digital products points to an overall negative effect of piracy on movie demand. According to Peitz and Waelbroeck (2006), the positive effect of piracy can arise from network externalities, informational externalities or indirect appropriation. Except for indirect appropriation which is also debatable, there is little evidence of the existence of network externalities in movie consumption and we already argued that sampling is probably limited for movie piracy. There is still a case for positive informational externalities if people who copy a film give a positive word-of-mouth to friends with high willingness to pay for films or offer DVDs as gifts. Movie piracy has no effect on demand if people who illegally copy DVDs or download films from the internet would not have purchased the original anyway. We thus expect that piracy has either a slight positive effect on demand or a negative effect.

The purpose of this article is to identify which segments of the demand for movies has suffered the most from internet piracy. There are several reasons to believe that the different demand segments should be affected by digital piracy in different ways. First, watching a compressed film on his or her computer does not provide the same experience as going to a movie theater, especially for blockbusters for which special effects are difficult to reproduce on a small computer screen or for rare movies that can take a very long time to download. Secondly, some persons enjoy doing social activities such as going to the movie theaters while others prefer to stay quiet at home. Internet piracy does not seem to be good substitute to the social activity for the former, while it seems to be a good alternative to renting a DVD for the latter.

2 Data

We administered an anonymous online survey during March-April 2005. Students, professors and administrative staff from more than 31 French Universities and Grandes Ecoles were involved with a total of 620 answers. Three fourth of the respondents are students.

Table 1. Demographics

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>
Female	0.41	
Date of birth	1977.25	9.60
Student	0.75	

Professor	0.16
Administrative staff	0.10
Monthly income less than 300	0.26
Monthly income 300-900	0.31
Monthly income 900-1500	0.18
Monthly income 1500-3000	0.14
Monthly income more than 3000	0.09

Monthly income includes discretionary income

2.1 Demand segments

We asked the respondents how frequently they go to a movie theater, purchase or rent a DVD or watch a movie on television: never, rarely, several times a year, several times per month, several times per week.

Table 2. Movie theaters and DVD purchases

Movie theaters	<i>DVD purchases</i>					
	Never	Rarely	Year	Month	Week	Total
Never	6	4	3	0	0	13
	46.2	30.8	23.1	0.0	0.0	100.0
	2.6	2.3	1.8	0.0	0.0	2.1
Rarely	19	13	8	2	1	43
	44.2	30.2	18.6	4.7	2.3	100.0
	8.4	7.5	4.9	3.9	16.7	6.9
Year	128	102	74	22	1	327
	39.1	31.2	22.6	6.7	0.3	100.0
	56.4	59.0	45.4	43.1	16.7	52.7
Month	61	47	67	24	3	202
	30.2	23.3	33.2	11.9	1.5	100.0
	26.9	27.2	41.1	47.1	50.0	32.6
Week	13	7	11	3	1	35
	37.1	20.0	31.4	8.6	2.9	100.0
	5.7	4.1	6.8	5.9	16.7	5.7
Total	227	173	163	51	6	620
	36.6	27.9	26.3	8.2	1.0	100.0
	100.0	100.0	100.0	100.0	100.0	100.0

Table 3. Movie theaters and DVD rentals

Movie theaters	<i>DVD rentals</i>					
	Never	Rarely	Year	Month	Week	Total
Never	8	3	1	1	0	13

Overall the movie demand segments are strongly correlated for theater and DVD experience, less so for movie theaters and movies on television.

2.2 Digital piracy

We asked several questions related to digital piracy: the frequency, the type of piracy (P2P, intranet, physical exchanges), the number of movie files stored on the computer, the type of movies they mainly look for (French, American or other) and piracy behavior (keep pirated movie files or not, view pirated movie several times or only once, movie sharing and sampling). In Tables 5 to 8, we tabulated the frequency of piracy and the intensity of the different demand segments. Table 5 indicates that there is some substitution between theater attendance and piracy as more than 35 percent of those who go to movie theaters several times per year or per month frequently download movies (several times per month or per week). However this substitution is limited for those who never or rarely go to movie theaters. In Tables 6 and 7, the substitution is more pronounced, as people who never or rarely purchase or rent DVDs frequently obtain digital movies illegally.

Table 5. Movie theaters and piracy

Movie theaters	<i>Piracy</i>					
	Never	Rarely	Year	Month	Week	Total
Never	4	1	1	4	3	13
	30.8	7.7	7.7	30.8	23.1	100.0
	0.7	0.2	0.2	0.7	0.5	2.1
Rarely	23	6	6	3	5	43
	53.5	14.0	14.0	7.0	11.6	100.0
	3.7	1.0	1.0	0.5	0.8	6.9
Year	102	35	74	67	49	327
	31.2	10.7	22.6	20.5	15.0	100.0
	16.5	5.7	11.9	10.8	7.9	52.7
Month	69	33	38	38	24	202
	34.2	16.3	18.8	18.8	11.9	100.0
	11.1	5.3	6.1	6.1	3.9	32.6
Week	9	3	9	8	6	35
	25.7	8.6	25.7	22.9	17.1	100.0
	1.5	0.5	1.5	1.3	1.0	5.7
Total	207	78	128	120	87	620
	33.4	12.6	20.7	19.4	14.0	100.0
	33.4	12.6	20.7	19.4	14.0	100.0

Table 6. DVDs and Piracy

<i>Piracy</i>	
---------------	--

Movie theaters	Never	Rarely	Year	Month	Week	Total
Never	68	24	46	48	41	227
	30.0	10.6	20.3	21.2	18.1	100.0
	11.0	3.9	7.4	7.7	6.6	36.6
Rarely	57	26	38	29	23	173
	33.0	15.0	22.0	16.8	13.3	100.0
	9.2	4.2	6.1	4.7	3.7	27.9
Year	58	18	37	34	16	163
	35.6	11.0	22.7	20.9	9.8	100.0
	9.4	2.9	6.0	5.5	2.6	26.3
Month	22	9	6	8	6	51
	43.1	17.7	11.8	15.7	11.8	100.0
	3.6	1.5	1.0	1.3	1.0	8.2
Week	2	1	1	1	1	6
	33.3	16.7	16.7	16.7	16.7	100.0
	0.3	0.2	0.2	0.2	0.2	1.0
Total	207	78	128	120	87	620
	33.4	12.6	20.7	19.4	14.0	100.0
	33.4	12.6	20.7	19.4	14.0	100.0

Table 7. Rent and piracy

<i>Piracy</i>						
Movie theaters	Never	Rarely	Year	Month	Week	Total
Never	95	31	50	56	43	275
	34.6	11.3	18.2	20.4	15.6	100.0
	15.3	5.0	8.1	9.0	6.9	44.4
Rarely	24	18	21	25	13	101
	23.8	17.8	20.8	24.8	12.9	100.0
	3.9	2.9	3.4	4.0	2.1	16.3
Year	52	19	43	23	21	158
	32.9	12.0	27.2	14.6	13.3	100.0
	8.4	3.1	6.9	3.7	3.4	25.5
Month	33	8	11	16	8	76
	43.4	10.5	14.5	21.1	10.5	100.0
	5.3	1.3	1.8	2.6	1.3	12.3
Week	3	2	3	0	2	10
	30.0	20.0	30.0	0.0	20.0	100.0
	0.5	0.3	0.5	0.0	0.3	1.6
Total	207	78	128	120	87	620
	33.4	12.6	20.7	19.4	14.0	100.0
	33.4	12.6	20.7	19.4	14.0	100.0

2.3 Piracy behavior

In Table 8, we tabulate the frequency of piracy and the different means of acquiring digital movie files. Table 8 reveals that people who rarely get pirated films mainly obtain them from physical exchanges, while those getting movies files on a regular basis use the internet, the intranet and physical exchanges. Professional hackers who belong to the TopSite community are also the frequent pirates.

Table 8. Piracy technology

<i>Frequency</i>	<i>P2P</i>	<i>Top sites</i>	<i>Intranet</i>	<i>Exchanges</i>
Rarely	20	1	13	53
	25.6	1.3	16.7	68.0
Year	71	3	44	89
	55.5	2.3	34.4	69.5
Month	72	10	64	68
	60.0	8.3	53.3	56.7
Week	51	16	60	46
	58.6	18.4	69.0	52.9
Total	216	30	181	256

Table 9 describes the number of pirate movies available to the respondents. The distribution shares the characteristics of power laws or distributions with heavy tails: 70% have less than 15 movies, while 10 % have more than 100 movie files or copies.

Table 9. Stock of pirated movies

<i>Piracy stock</i>	<i>Freq.</i>	<i>Percent</i>	<i>Cum.</i>
0	213	34.35	34.35
1-5	124	20	54.35
6-15	98	15.81	70.16
16-30	62	10	80.16
31-50	34	5.48	85.65
51-70	16	2.58	88.23
71-100	16	2.58	90.81
101-500	44	7.1	97.9
More than 500	13	2.1	100
Total	620	100	

Table 10. Piracy and consumption behavior

<i>Variable</i>	<i>Mean</i>
-----------------	-------------

Keep more than half	0.217742
Watch several times	0.314516
Discover new actors/directors	0.482258
Induce new purchases	0.309677
Search American movies	0.235484
Search French movies	0.017742

Table 11 describes the effect of piracy on movie consumption. There is a clear perception that piracy is decreasing the number of times people watch a movie on TV or from a rented DVD, while the effect is not as clear on DVD purchases and is even positive for theater attendance.

Table 11. Influence of piracy of consumption

	<i>Theaters</i>	<i>DVDs</i>	<i>Rentals</i>	<i>TV</i>
Increase	17.32	14.78	4.96	4.96
decrease	6.59	14.53	22.58	22.58
Same	76.1	70.69	72.46	72.46
Total	100	100	100	100
# Obs.	410	406	403	407

3 Econometric analysis

In order to test the effect of digital piracy on the demand for movies we ran four ordered Probit regressions that explain the intensity of each demand segment by a set of control variables and the piracy variables in a set of reduced form equation. For each demand segment we test the joint significance of the coefficients associated with the piracy variables. The p-value of the likelihood ratio test are respectively .915 for movie theaters (we do not reject at 5%), .952 DVD purchases, .796 for DVD rentals (we do not reject at 10%) and .95 for movies on television. Thus piracy has the most significant effects on the purchase of DVDs and on movies on television, less so for movie theaters and DVD rentals. These joint tests hide the fact that the coefficients of piracy variables have different signs for the different demand segments. For movie theaters, people who get their movie files for top sites belong or are close to professional hacker organizations and can get film even before their official release date at the box office. This translates into a statistically negative effect of this form of piracy on movies attendance. Piracy has a negative effect on DVD purchases and intranet piracy seems to be the most negative factors. A low intensity of piracy also reduces demand for DVDs. With respect to DVD rentals, piracy also reduced the number of times people go to DVD rental stores. We find a very negative effect of piracy from people who mainly look for French movies on rentals of DVDs. Finally, piracy reduces the frequency of consumptions of movies on television, although the effect is not highly significant.

3.1 Theaters

	<i>Coef.</i>	<i>Std. Err.</i>	<i>z</i>	<i>P>z</i>
ADSL	0.041	0.136	0.300	0.763
Cable	-0.316	0.225	-1.410	0.160
Intranet	-0.067	0.211	-0.320	0.750
Internet work	0.230	0.246	0.930	0.350
Internet time	-0.011	0.010	-1.110	0.265
Radio or TV show	0.236	0.120	1.960	0.050
Magazine	0.823	0.162	5.090	0.000
Club membership	0.425	0.261	1.630	0.104
Movie site	0.515	0.115	4.480	0.000
DVD/VHS player	0.056	0.171	0.330	0.743
Home cinema	0.117	0.124	0.940	0.347
Divx player	0.004	0.132	0.030	0.975
Female	-0.048	0.110	-0.430	0.664
Age	-0.013	0.009	-1.400	0.161
Status_prof	0.034	0.210	0.160	0.873
Status_admin	-0.381	0.223	-1.710	0.088
Income_900	0.251	0.128	1.960	0.050
Income_1500	0.477	0.159	3.000	0.003
Income_3000	0.189	0.204	0.930	0.354
Income_6000	0.604	0.274	2.200	0.028
theater_general_review	0.415	0.113	3.660	0.000
theater_specialized_review	0.253	0.153	1.660	0.097
theater_preview	-0.060	0.119	-0.500	0.617
theater_online_wom	-0.023	0.125	-0.190	0.853
theater_ads	0.009	0.108	0.090	0.930
theater_offline_wom	0.472	0.143	3.300	0.001
theater_other_info	0.448	0.197	2.280	0.023
theater_no_info	0.460	0.288	1.590	0.111
theater_pass	1.598	0.177	9.020	0.000
Purchase_video_compare	0.079	0.199	0.390	0.693
Purchase_video_bonus	0.042	0.134	0.310	0.755
Purchase_video_filmreview	-0.423	0.164	-2.570	0.010
Purchase_video_videoreview	-0.195	0.211	-0.920	0.356
Purchase_video_internetpreview	0.309	0.232	1.330	0.183
Purchase_video_viewerreview	-0.134	0.248	-0.540	0.590
Purchase_video_customerreview	-0.056	0.263	-0.210	0.832
Purchase_video_wom	0.127	0.129	0.980	0.325
Purchase_video_otherinfo	-0.055	0.175	-0.310	0.754
Purchase_video_noinfo	-0.017	0.134	-0.130	0.896
Rent_video_subscription	0.025	0.106	0.240	0.811
TV subscription	-0.034	0.136	-0.250	0.800
TV pay per view	-0.236	0.208	-1.140	0.256
Piracy_rarely	0.093	0.197	0.470	0.635
Piracy_year	0.209	0.204	1.020	0.306
Piracy_month	0.153	0.225	0.680	0.497

Piracy_week	0.138	0.253	0.550	0.584
Piracy_p2p	0.033	0.135	0.250	0.806
Piracy_topsites	-0.605	0.244	-2.480	0.013
Piracy_intranet	-0.128	0.141	-0.910	0.365
Piracy_exchange	-0.159	0.130	-1.220	0.224
Piracy_americanmovie	0.070	0.129	0.540	0.587
Piracy_frenchmovie	0.248	0.388	0.640	0.522
Piracy_keep	0.258	0.138	1.870	0.061
Piracy_repeatwatch	-0.028	0.130	-0.220	0.827
Piracy_share_never	0.076	0.130	0.580	0.561
/cut1	-1.135	0.443		-2.004
/cut2	-0.285	0.434		-1.136
/cut3	1.820	0.439		0.959
/cut4	3.720	0.460		2.817

3.2 DVDs

	<i>Coef.</i>	<i>Std. Err.</i>	<i>z</i>	<i>P>z</i>
ADSL	0.105	0.140	0.750	0.454
Cable	0.139	0.234	0.590	0.552
Intranet	0.148	0.225	0.660	0.511
Internet work	0.526	0.274	1.920	0.055
Internet time	-0.014	0.010	-1.310	0.191
Radio or TV show	0.021	0.122	0.170	0.862
Magazine	0.080	0.162	0.490	0.623
Club membership	-0.050	0.247	-0.200	0.839
Movie site	0.183	0.120	1.520	0.128
DVD/VHS player	0.402	0.220	1.830	0.068
Home cinema	0.410	0.124	3.310	0.001
Divx player	0.150	0.132	1.140	0.256
Female	-0.132	0.115	-1.150	0.252
Age	0.008	0.009	0.820	0.415
Status_prof	0.110	0.216	0.510	0.610
Status_admin	0.217	0.224	0.970	0.333
Income_900	-0.121	0.135	-0.900	0.369
Income_1500	0.044	0.164	0.270	0.791
Income_3000	0.254	0.213	1.190	0.234
Income_6000	0.164	0.282	0.580	0.561
theater_general_review	-0.124	0.117	-1.060	0.291
theater_specialized_review	-0.160	0.160	-1.010	0.315
theater_preview	-0.180	0.125	-1.430	0.152
theater_online_wom	-0.001	0.130	-0.010	0.995
theater_ads	-0.111	0.113	-0.990	0.323
theater_offline_wom	-0.122	0.149	-0.820	0.411
theater_other_info	0.066	0.201	0.330	0.742
theater_no_info	-0.809	0.332	-2.430	0.015

theater_pass	0.318	0.161	1.980	0.047
Purchase_video_compare	0.513	0.191	2.680	0.007
Purchase_video_bonus	0.374	0.126	2.970	0.003
Purchase_video_filmreview	0.910	0.158	5.770	0.000
Purchase_video_videoreview	1.035	0.202	5.120	0.000
Purchase_video_internetpreview	0.608	0.220	2.760	0.006
Purchase_video_viewerreview	0.464	0.233	1.990	0.047
Purchase_video_customerreview	0.783	0.249	3.140	0.002
Purchase_video_wom	1.314	0.131	10.010	0.000
Purchase_video_otherinfo	1.274	0.170	7.500	0.000
Purchase_video_noinfo	1.930	0.145	13.300	0.000
Rent_video_subscription	0.002	0.109	0.020	0.983
TV subscription	0.177	0.138	1.280	0.200
TV pay per view	-0.091	0.210	-0.430	0.666
Piracy_rarely	-0.446	0.205	-2.170	0.030
Piracy_year	-0.397	0.213	-1.860	0.062
Piracy_month	-0.346	0.234	-1.480	0.139
Piracy_week	-0.185	0.263	-0.700	0.482
Piracy_p2p	0.143	0.142	1.010	0.311
Piracy_topsites	0.125	0.251	0.500	0.620
Piracy_intranet	-0.274	0.152	-1.800	0.072
Piracy_exchange	-0.034	0.138	-0.240	0.808
Piracy_americanmovie	0.262	0.136	1.940	0.053
Piracy_frenchmovie	0.506	0.404	1.250	0.211
Piracy_keep	-0.004	0.143	-0.030	0.976
Piracy_repeatwatch	0.219	0.138	1.580	0.114
Piracy_share_never	0.156	0.137	1.140	0.256
/cut1	1.822	0.473		0.896
/cut2	3.159	0.482		2.214
/cut3	4.458	0.490		3.497
/cut4	5.757	0.525		4.727

3.3 DVD rentals

	<i>Coef.</i>	<i>Std. Err.</i>	<i>z</i>	<i>P>z</i>
ADSL	0.224	0.135	1.660	0.097
Cable	0.249	0.219	1.140	0.255
Intranet	-0.367	0.219	-1.680	0.093
Internet work	0.215	0.247	0.870	0.384
Internet time	0.001	0.010	0.120	0.901
Radio or TV show	-0.014	0.117	-0.120	0.906
Magazine	0.379	0.157	2.410	0.016
Club membership	0.528	0.242	2.180	0.029
Movie site	0.292	0.113	2.580	0.010

DVD/VHS player	0.570	0.200	2.850	0.004
Home cinema	0.135	0.121	1.120	0.264
Divx player	0.147	0.129	1.130	0.257
Female	0.140	0.109	1.280	0.199
Age	0.002	0.009	0.190	0.850
Status_prof	-0.331	0.215	-1.540	0.123
Status_admin	-0.344	0.225	-1.530	0.127
Income_900	0.256	0.128	2.000	0.045
Income_1500	0.482	0.157	3.070	0.002
Income_3000	0.295	0.205	1.440	0.150
Income_6000	0.551	0.280	1.970	0.049
theater_general_review	0.068	0.111	0.610	0.539
theater_specialized_review	-0.211	0.152	-1.390	0.165
theater_preview	0.038	0.117	0.320	0.746
theater_online_wom	-0.095	0.123	-0.770	0.440
theater_ads	0.016	0.106	0.150	0.881
theater_offline_wom	0.220	0.148	1.490	0.137
theater_other_info	0.193	0.194	0.990	0.320
theater_no_info	-0.452	0.319	-1.410	0.157
theater_pass	-0.315	0.161	-1.950	0.051
Purchase_video_compare	0.292	0.194	1.510	0.132
Purchase_video_bonus	0.107	0.130	0.820	0.414
Purchase_video_filmreview	0.067	0.158	0.420	0.673
Purchase_video_videoreview	-0.076	0.205	-0.370	0.713
Purchase_video_internetpreview	-0.095	0.235	-0.400	0.686
Purchase_video_viewerreview	-0.218	0.261	-0.830	0.404
Purchase_video_customerreview	-0.421	0.272	-1.550	0.122
Purchase_video_wom	-0.139	0.127	-1.090	0.274
Purchase_video_otherinfo	0.269	0.165	1.630	0.103
Purchase_video_noinfo	0.055	0.132	0.420	0.676
Rent_video_subscription	1.080	0.104	10.420	0.000
TV subscription	-0.225	0.134	-1.680	0.092
TV pay per view	0.237	0.197	1.200	0.231
Piracy_rarely	-0.268	0.195	-1.370	0.169
Piracy_year	-0.194	0.204	-0.950	0.340
Piracy_month	-0.345	0.226	-1.530	0.127
Piracy_week	-0.309	0.253	-1.220	0.221
Piracy_p2p	-0.126	0.135	-0.930	0.352
Piracy_topsites	0.176	0.243	0.730	0.468
Piracy_intranet	0.037	0.140	0.270	0.790
Piracy_exchange	0.196	0.132	1.480	0.138
Piracy_americanmovie	0.050	0.128	0.390	0.695
Piracy_frenchmovie	-1.329	0.598	-2.220	0.026
Piracy_keep	-0.166	0.138	-1.210	0.228
Piracy_repeatwatch	-0.005	0.132	-0.040	0.967
Piracy_share_never	-0.002	0.131	-0.020	0.985
/cut1	1.545	0.443		0.676
/cut2	2.096	0.446		1.221
/cut3	3.050	0.450		2.167

/cut4	4.219	0.468	3.301
-------	-------	-------	-------

3.4 TV

	<i>Coef.</i>	<i>Std. Err.</i>	<i>z</i>	<i>P>z</i>
ADSL	-0.056	0.127	-0.440	0.659
Cable	0.203	0.213	0.950	0.342
Intranet	-0.129	0.196	-0.660	0.510
Internet work	-0.072	0.231	-0.310	0.754
Internet time	0.020	0.010	2.000	0.046
Radio or TV show	0.454	0.114	3.990	0.000
Magazine	0.117	0.152	0.770	0.443
Club membership	0.175	0.241	0.730	0.468
Movie site	-0.099	0.106	-0.940	0.349
DVD/VHS player	0.314	0.160	1.970	0.049
Home cinema	-0.110	0.116	-0.950	0.344
Divx player	0.235	0.124	1.900	0.057
Female	0.285	0.102	2.790	0.005
Age	0.012	0.009	1.330	0.185
Status_prof	-0.132	0.201	-0.660	0.512
Status_admin	0.154	0.213	0.720	0.470
Income_900	-0.130	0.118	-1.100	0.272
Income_1500	0.062	0.148	0.420	0.676
Income_3000	-0.109	0.193	-0.560	0.573
Income_6000	-0.152	0.261	-0.580	0.560
theater_general_review	-0.079	0.104	-0.750	0.452
theater_specialized_review	-0.193	0.142	-1.350	0.176
theater_preview	0.105	0.110	0.950	0.340
theater_online_wom	0.006	0.115	0.050	0.960
theater_ads	0.078	0.100	0.780	0.438
theater_offline_wom	0.026	0.132	0.200	0.844
theater_other_info	-0.083	0.185	-0.450	0.655
theater_no_info	-0.219	0.269	-0.810	0.416
theater_pass	-0.122	0.154	-0.790	0.430
Purchase_video_compare	-0.237	0.191	-1.240	0.214
Purchase_video_bonus	0.301	0.127	2.360	0.018
Purchase_video_filmreview	0.384	0.156	2.460	0.014
Purchase_video_videoreview	0.006	0.197	0.030	0.975
Purchase_video_internetpreview	0.014	0.221	0.070	0.948
Purchase_video_viewerreview	0.297	0.238	1.250	0.212
Purchase_video_customerreview	-0.770	0.250	-3.080	0.002
Purchase_video_wom	0.111	0.122	0.920	0.360
Purchase_video_otherinfo	-0.119	0.163	-0.730	0.466
Purchase_video_noinfo	0.083	0.124	0.670	0.505
Rent_video_subscription	0.187	0.099	1.890	0.059

TV subscription	0.488	0.131	3.730	0.000
TV pay per view	0.217	0.199	1.090	0.276
Piracy_rarely	-0.496	0.184	-2.700	0.007
Piracy_year	0.022	0.191	0.120	0.907
Piracy_month	-0.153	0.210	-0.730	0.467
Piracy_week	-0.206	0.234	-0.880	0.381
Piracy_p2p	-0.104	0.124	-0.830	0.405
Piracy_topsites	-0.182	0.226	-0.810	0.420
Piracy_intranet	0.054	0.130	0.410	0.680
Piracy_exchange	0.211	0.121	1.750	0.080
Piracy_americanmovie	0.160	0.120	1.330	0.184
Piracy_frenchmovie	0.821	0.365	2.250	0.025
Piracy_keep	-0.011	0.128	-0.080	0.934
Piracy_repeatwatch	-0.054	0.121	-0.450	0.655
Piracy_share_never	0.172	0.121	1.420	0.155
<hr/>				
/cut1	-0.340	0.412		-1.149
/cut2	0.127	0.412		-0.681
/cut3	0.697	0.412		-0.111
/cut4	1.892	0.415		1.078

4 Conclusion

Contrary to what movie producers are claiming, internet piracy seems to have little negative effect on theater attendance in our sample of people from the university community. The strongest effect of piracy is on DVD purchases and rentals. We would like again to stress that our sample is very specific. Nevertheless, if confirmed by other studies, our results suggest that the DVD segment suffers the most from internet piracy and that on the contrary the movie theater segment could be able to generate stable or increasing revenues even in a world of illegal file-sharing. New business models such as internet movie on demand could also be able to generate revenues from people who mainly rented DVDs in the past and who have switched to the convenience of watching pirated movies.