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Spanish director Pedro Almodóvar and actress Penélope Cruz. 20 October 2006
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Domestic Demand for Spanish Cinema: The Popularity of Star Film Directors as Determinant for Theatre Attendance

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This master thesis is dedicated to all Spanish film makers who keep producing Spanish cinema in spite of all adversities. I would like to thank my supervisor Hans Abbing for his patience and confidence until the end of the project and my second reader Jan Berend Langenberg for his valuable comments. Thanks to Kristien Werck for her help with understanding econometrics. Special thanks also to my husband Ángel for his endless support and encouragement. Finally, thanks to my daughter Lucía and to my whole family in Spain for their love.

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1. Introduction

The film industry is undergoing deep changes at the turn of the 21st century. Technological advances in the treatment of audiovisual products and the expanding network effect of the internet are reshaping the map. The distribution and exhibition sectors are the first to feel the impact of such changes.

Cinema researchers relate the worldwide continuing decline in cinema attendance to new consumption habits surrounding the audiovisual sector. One wonders whether traditional economic theory for the demand of cultural products is able to account for this new situation. Current economic theory around the movie industry explains that the demand for the cinema is extremely uncertain and the movie industry[1] is a risky terrain. These statements are associated to the idea that every movie is a combination of unique factors and that rational consumers will choose the optimal combination.

Uncertainty also exists in the Spanish cinema industry. The year 2008 showed a worrying fall in the number of cinema spectators compared with the previous year. The press blames the low performance of Spanish movies on the absence of works by star directors and the lack of quality in the average Spanish films together with the impact of widespread film piracy. This pessimistic view contrasts with the ongoing prestige that Spanish cinema enjoys inside and outside the local boundaries.

Up to now, studies of demand for the Spanish cinema have accounted for attendance fluctuations by means of standard household consumption variables, such as ticket price and consumer income. However, quality factors influencing demand have not been considered for analysis. Directors are partly responsible for a movie's quality output. Hence, a possible impact of star directors on cinema attendance is linked to those quality factors affecting demand.

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[1] Some authors, like Cameron (2003:114), distinguish between cinema industry and film industry, the former caring about production, distribution and exhibition of motion pictures in film theatres; the latter creating many products that are not shown on cinema screens but on other windows, such as video or television. However, this distinction is not locus communis in the majority of literature used for analysis. The present study uses the terms cinema industry, motion picture industry, movie industry and film industry as synonyms.

The role of stars and their impact on demand is explained by Rosen's (1981) economic theory of stardom. The theory states that small differences in talent take to large differences in success and in gains. Willingness to pay for the star's performance also rises so that stars may charge higher prices for their performance and they will attract more consumers.

However, some Hollywood analysts like De Vany and Walls (1999) reject the theory of stardom in praise of the extreme uncertainty of demand for the cinema. They allege the impossibility to make an accurate prediction of what the revenues for a film will be before the audience decides its fate on the theatres.

Back to the context of Spanish cinema, Rosen's theory of stardom may explain the power of star directors to increase attendance rates. The hypothesis to test is that popularity of star film directors does influence theatre attendance in the domestic market for Spanish movies.

In order to test the hypothesis I estimate a model of demand function which combines standard demand variables for household consumption together with quality related variables having to do with cinema consumption. The popularity of directors is measured by their presence on the internet. The advantage of using such proxy is the translation of popularity into a cardinal scale, which facilitates the statistical quantitative approach to the matter.

The analysis is carried out over a data set of hundred best seen movies in Spain between 2004 and 2008. The methods used are correlation analyses followed by multivariate regression analysis of several linear and non linear models.

The analysis does not limit itself to the influence of the director's popularity on cinema attendance but also tests the influence of other intervening quality related variables such as cast popularity and genre. The presence of powerful substituting products is investigated even though it will not appear in the final operating model due to lack of data. The increasing threat of piracy for the film industry is also explored but not included in the final model either, due to methodological limitations explained in the corresponding section.

The study begins with a close up of the present situation in the Spanish film industry in Chapter 2, which focuses on the context of the local Spanish market and gives a comparative overview with the European Union film market as a whole. It followed by a theoretical approach to the economics of cinema and an explanation of the theory of stardom, which is

driving the analysis in Chapter 3. Chapter 4 states the hypothesis. The method for the analysis is explained in Chapter 5. Chapter 6 introduces data analysis and results. The study finishes with conclusions and hints for further research in Chapter 7.

2. The Spanish film industry

Between 1990 and 2008 names like Pedro Almodóvar, Antonio Banderas, Penélope Cruz and Javier Bardem are well known in the international film scene. These film professionals enjoy popularity inside and outside the Spanish borders. Apparently, Spanish cinema is enjoying a prosperous phase.

International awards have been bestowed to directors such as Fernando Trueba (Oscar for Belle Époque in 1994); Pedro Almodóvar (best director in Cannes and Oscar to best foreign film for Todo sobre mi madre in 1999; Oscar to best original script for Hable con ella in 2002); and also to actors like Penelope Cruz (best secondary actress Oscar for Woody Allen's Vicky, Cristina, Barcelona in 2008) and Javier Bardem (best secondary actor for No country for old men in 2007). Francis Ford Coppola has worked with two Spanish actresses, Maribel Verdú and Carmen Maura, in the cast of his film Tetro (2009). Cannes 2009 festival featured the works of three Spanish directors in its official main section, Pedro Almodóvar, Isabel Coixet and Alejandro Amenábar. Within the Spanish boundaries, local audience seems to be as interested in the latest American hit, as in the newest movie by Alejandro Amenábar.

The Spanish cinema industry has experienced a boost in the last 20 years (1990s -2000s) sheltered by the prosperous economic climate prior to 2008 financial crash. The situation has been partly enhanced by the Spanish government through several ministerial laws[2] which protect the industry and provide for generous subsidies[3]. Recently born film schools keep preparing future professionals in big cities like Madrid or Barcelona, whilst Spanish film festivals are organized in numerous cities around the world. Even a modest festival in a small

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[2] Law for the Cinema published in the Spanish Official State Bulletin 'Ley 55/2007, de 28 de diciembre, del Cine', (BOE) Boletín Oficial del Estado 29/12/2007 <http://www.boe.es/boe/dias/2007/12/29/index.php>, accessed 23 May 2009.

[3] Memory for official subsidies for the cinema can be found online in the official webpage of the Spanish Ministry of Culture 'Memoria de ayudas a la cinematografía', Spanish Ministry of Culture <http://www.mcu.es/cine/MC/MAC/index.html>, accessed 23 May 2009.

city in Holland (Spanish and Portuguese Film Festival in Delft[4], where I volunteer for the organizing committee) manages to perform continuing successful editions.

All efforts, though, seem futile when yearly low figures for box office revenue and attendance of Spanish films are shown. Outside the film milieu, the press complaints that Spanish cinema relies on just a handful of well-known directors; the rest of productions seem not to match people's tastes or are accused of showing bad quality. Film producers and cinema professionals claim that venue attendance should not be considered as the only reference for the health of the Spanish film industry. Apparently, home cinema practices (watching films on television, DVD player or the computer) together with film piracy (i.e. illegal copying and downloading) are becoming serious competence as substitutes for film theatre attendance.

Underneath these matters lays the issue that films are complex products and demand for the cinema is extremely uncertain.

2.1. The Spanish cinema in the domestic film market

2.1.1. The Spanish film market in the year 2008

Spanish cinema lost a million and a half spectators in Spain in the year 2008. According to an official report from the Spanish Institute for Cinematography and Audiovisual Arts ('Boletín informativo 2008: películas, recaudación, espectadores', Instituto de las Ciencias y de las Artes Cinematográficas, ICAA, 2008[5]) there were a total of 14.359.230 spectators watching Spanish movies in the year 2008, while it reached 15.795.434 spectators in 2007. This means 1.436.000 less spectators with reference to the previous year.

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[4] Spanish and Portuguese Film Festival in Delft, <http://www.festiberico.net>, accessed 23 May 2009

[5] 'Boletín informativo 2008: películas, recaudación, espectadores' (Information Bulletin 2008: Films, Revenue, Spectators) is the publication by which the Institute of the Cinematography and the Audiovisual Arts of the Spanish Ministry of Culture presents the annual balance of the cinematography in Spain. It covers the scopes of production, distribution, exhibition and commercialization in the year 2008.

The figures of the year 2008 for the film theatre exhibition market were inferior to those obtained in the previous year. The total number of spectators, both for domestic and foreign films in 2008 reached only 107.9 million; 7.70% down with respect to the 116.9 million spectators in 2007. The number of spectators of Spanish cinema in 2008 showed a similar situation, going down from 15.7 million in 2007 to 14.3 million in 2008, which means 8.92% less visitors.

The total box-office revenue obtained in 2008 was also inferior to that obtained in 2007, collecting 619.2 million Euro against 643.7 million of the previous year (4% less revenue). The revenue obtained by the Spanish cinema in 2008 also decreased, with 81.6 million Euro against 86.7 million of year 2007 (6% less revenue).

With regard to the market size, the Spanish cinema registered in 2008 a market share of 13.3% against 13.5% of year 2007 (see Table 1.1.). The highest share in 2008 corresponded to films from the United States, with 71.5% share. Spanish cinema came in the second place with 13.3%; with a better performance than the rest of European films that were exhibited, which only covered 12.85%. European cinema altogether represented 26.15% of the total, experiencing a strong decrease in comparison with the 30.3% of the previous year. The U.S. cinema grew stronger while the European cinema made a worse performance.

Composition of the exhibition film market in Spain in the year 2008		
Country	Spectators	Market share
U.S. films	77.100.364	71.51%
Spanish films	14.359.230	13.31%
E.U. films (excluding Spanish films)	13.837.420	12.85%
Films from other nationalities	2.516.245	2.35%
Total spectators 2008	107.813.259	

Table 1.1. Composition of the exhibition film market in Spain in the year 2008. Figures from 'Boletín informativo 2008' ICAA (2008:56)

The decrease in attendance for Spanish titles made a contrast with the increase in production. In 2008, 173 films were shot, a figure close to the 172 films produced in 2007. Among the 173 long features produced in 2008, 108 are fiction films, 55 are documentary and 10 are

animation films; number of documentary and animation films is steadily increasing in the previous five years.

After the publication of the Information Bulletin 2008, cinema experts pointed at several reasons for the decrease in attendance for Spanish productions in the domestic market. Pedro Pérez the president of the 'Federación de Asociaciones de Productores Audiovisuales' (Association Federation of Audiovisual Producers, FAPAE) mentioned to the press that the loss of spectators might be due to negative effects of piracy and to the absence of Spanish blockbusters in 2008 (SERVIMEDIA, 2009).

During the 2008 Goya Award Ceremony, which is the Spanish equivalent to the American Oscars of the Academy, Ángeles González Sinde the president of the Spanish Academy for the Cinematographic Arts and Sciences ('Academia de las Artes y las Ciencias Cinematográficas de España') also pointed at illegal downloading from the Internet as a threat to the industry (González-Sinde in the press, 2009). Some journalists mentioned that success of Spanish cinema solely depends on superstar directors, with the average film showing bad quality or presenting topics which do not attract Spaniards (Vera in the press, 2009).

However, low box office revenue or attendance is not a sign of poor performance of the industry per se; complete life cycle of a motion picture is long and the production, distribution and exhibition chain in the movie industry is complex.

Chisholm (2003) describes the whole creation and commercialization process for a movie in the major U.S. market. The first stage is production, which subdivides in development (acquisition of the rights to a story, contacting talent agents, arranging financing and hiring a scriptwriter), production (pre-production, production and post-production arrangements); and marketing (market research, advertising, foreign distribution strategy and auditing for revenues and costs of the complete production stage).

After production, the movie enters the distribution phase. Distributors promote films and supply them for theatre exhibition, firstly in the domestic theatrical market and then in foreign theatrical markets. Exhibitors decide which movie to show on which screens. The exhibition stage spreads and extends afterwards through several 'windows' that are likely to come in the

following order: pay-per-view, worldwide home video, pay television, foreign television, network television, and syndication[6] (Chisholm, 2003: 309).

The sequence in windows for exhibition obeys to principles of profit maximization and opportunity costs. Back in 1980, more than 50% of revenues for a U.S. film came from theatre exhibition operations; by 1995 theatre sources dropped half to 25% of the total revenue for a film (Vogel, 1998 in Chisholm, 2003).

The distribution market operates by economies of scale. Chisholm (2003:311) explains that studios incur in large fixed costs to establish a large enough distribution system; once it is established and maintained, marginal costs for distributing a film will be relatively small. Hence, the distribution market consists of few major distributors operating on a large scale.

Gil (2007) describes the scenario for movie distribution and exhibition in Spain. There is a weak link between Spanish movie production and distribution sectors. This is so because production relies mainly on subsidies and it is not entirely dependent on the films' commercial performance. Distributors obtain their movies both through foreign distributors and from local production companies.

There are cases of distributors who own their own theatres for exhibition, while others work independently. Distributors choose optimal run for their movies only on those theatres of their own. Independent exhibitors rely on more sources of revenue than the box office only (such as concession sales or third party advertising). Total revenues from those diverse sources play a role in deciding about the movie's running time on screen, which in turn is determinant for the film's attendance and box office performance (De Vany, A. and W.D. Walls, 1999). Thus, profitability and success of a movie in the long run may relatively differ from performance in

[6] In broadcasting, syndication is the sale of the right to broadcast radio shows and television shows to multiple individual stations, without going through a broadcast network. It is common in countries where television is scheduled by networks with local affiliates, particularly in the United States. In the rest of the world, however, most countries have centralized networks without local affiliates and syndication is less common, although shows can also be syndicated internationally. Broadcast syndication. 'Broadcast syndication', <Wikipedia www.wikipedia.com>, accessed 12 June 2009.

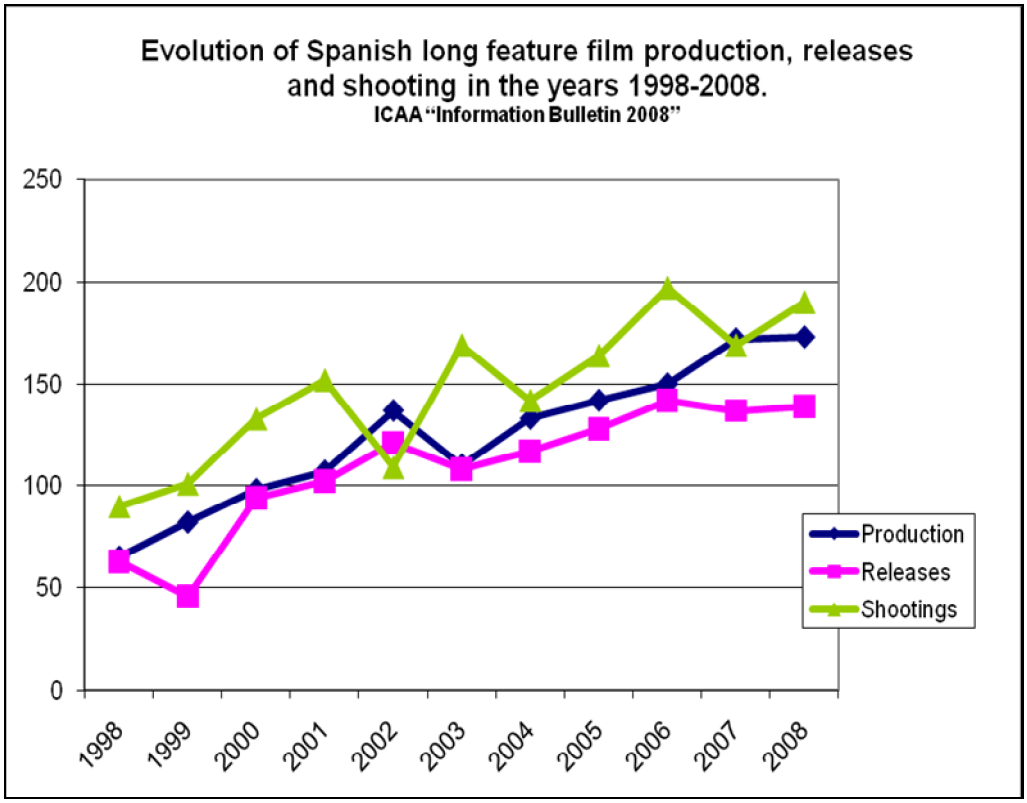
early distribution and exhibition stages. Nevertheless, signals at the beginning of the chain are likely to influence later decisions in the commercialization process.

All things considered, one question is posed: where does recent prestige and popularity for Spanish cinema come from? A glance back to the evolution of the Spanish film industry in the decade 1998-2008 may give a clue.

2.1.2. The Spanish film market between 1998 and 2008

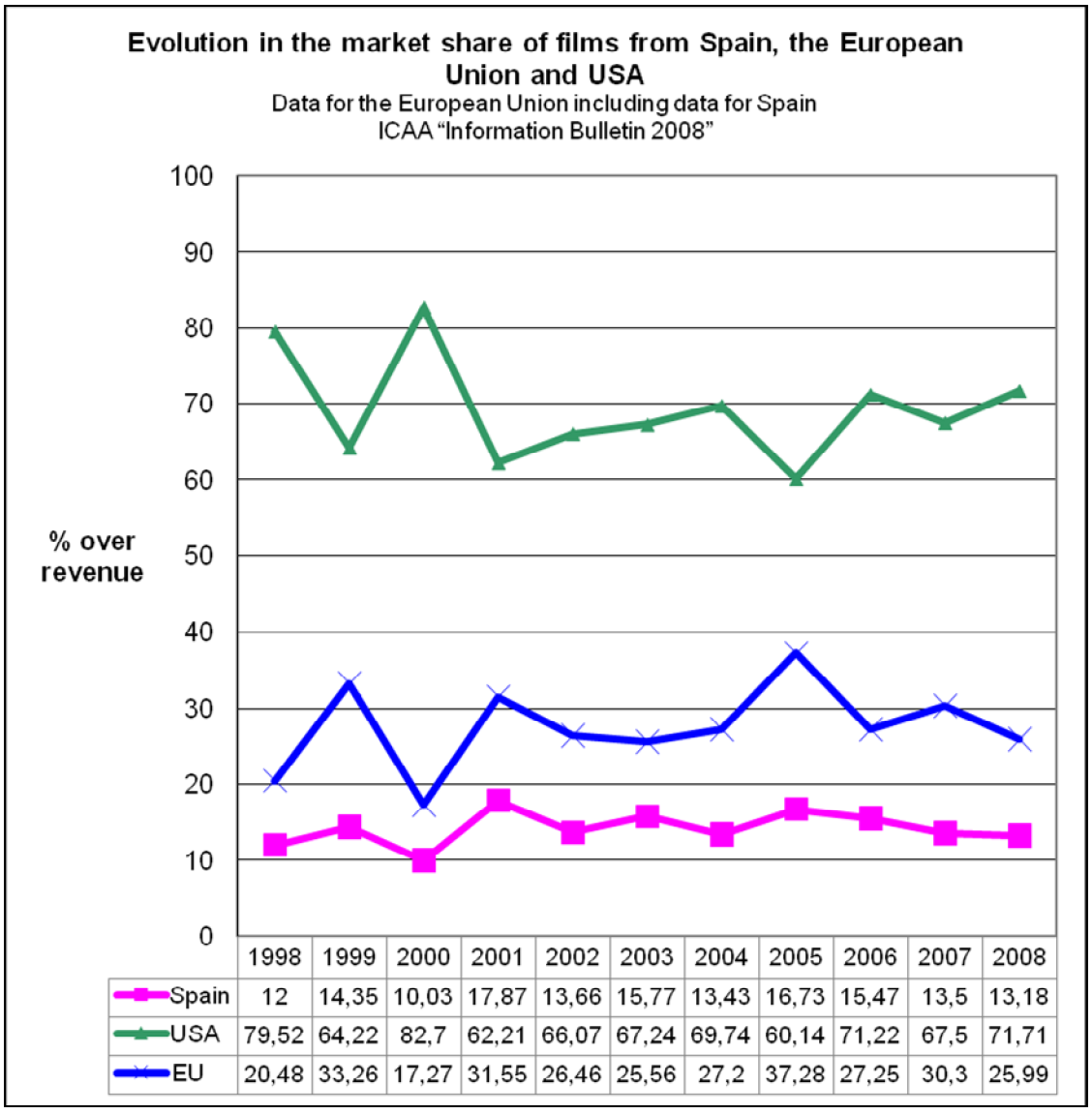
Performance of Spanish films in production, distribution and exhibition stages yields better results in 2008 as compared to those from 1998.

Graph 2.1. evidences how production has doubled, probably thanks to ongoing government subsidization.



Graph 2.1. Evolution of Spanish long feature film production, releases and shooting in the years 1998-2008. Figures from 'Boletín informativo 2008' ICAA (2008:2)

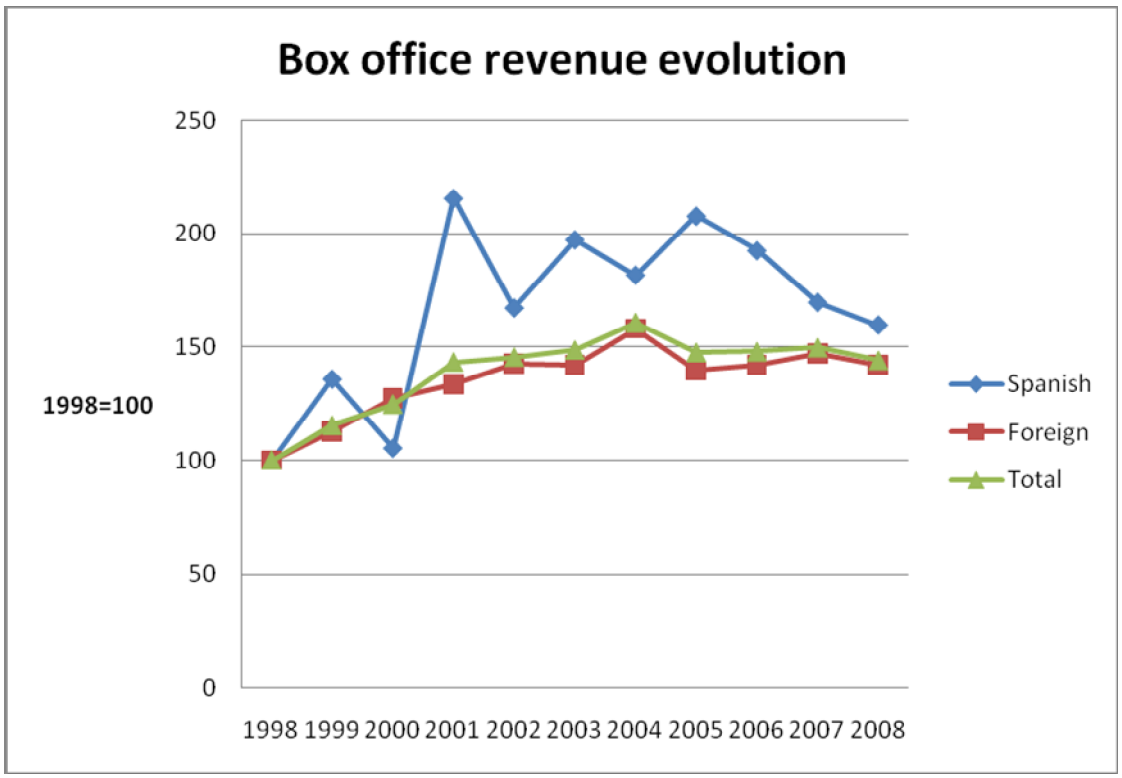
Concerning distribution, the market share for Spanish titles along the ten year period keeps a relatively steady path (see Graph 2.2.). Yearly fluctuations are due to blockbusters: Spanish blockbusters expanded the market share in years 2001, 2003 and 2005; inversely, U.S. hits in 2000, 2004 and 2008 played down Spanish revenue.



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Spain	12	14,35	10,03	17,87	13,66	15,77	13,43	16,73	15,47	13,5	13,18
USA	79,52	64,22	82,7	62,21	66,07	67,24	69,74	60,14	71,22	67,5	71,71
EU	20,48	33,26	17,27	31,55	26,46	25,56	27,2	37,28	27,25	30,3	25,99

Graph 2.2. Evolution in the market share of films from Spain, United States and the European Union in the period 1998-2008. Figures from 'Boletín informativo 2008' ICAA (2008:12)

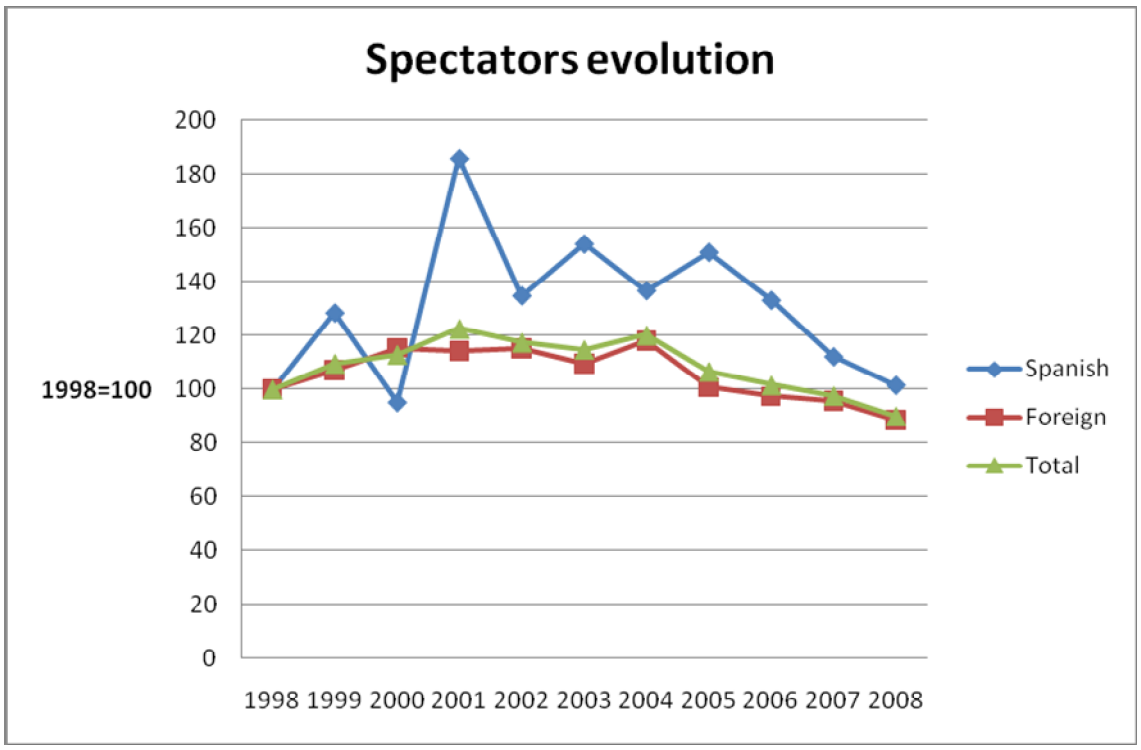
In relative terms, Spanish movies performed better than foreign movies in the evolution of box office revenue (see Graph 2.3).



Graph 2.3. Index graph for the box-office revenue evolution of the Spanish film exhibition market 1998 – 2008[7].

Once again Spanish films attracted a higher number of spectators than films from other nationalities between 1998 and 2008 (see Graph 2.4.). But the figures have not been so good in the last three years. Still, the optimistic impression is counter effected by the overall decrease in number of film spectators in the years 2004-2008 affecting films from all nationalities, including Spanish films.

[7] Figures in the Graph 2.3. have been adjusted with year 1998=100. Data about box office revenue come from the website of the Spanish Ministry of Culture 'El cine y el video en datos y cifras. Evolución', (ICAA) <http://www.mcu.es/cine/MC/CDC/Evolucion/MercadoCine.html>, accessed 5 April 2009.



Graph 2.4. Index graph for the Evolution of spectators figures in the Spanish film exhibition market 1998 – 2008[8].

Cameron (2003:115) attributes the continuing decline in worldwide sales in cinema theatres to emerging substitutes and new consumption habits surrounding the audiovisual sector. Internet and the development of information technology have altered the market for communication, leisure and entertainment. The roles of traditional agents in this sector are experimenting constant changes. Major cinema studios are bound to come to terms with information technology companies in order to reshape the exhibition and distribution of films in different audiovisual media.

The Spanish exhibition sector is preparing for technical advances to come. Major venues are experimenting with the adaptation of showrooms to digital screening systems but these early steps are taken cautiously. All interested parties are waiting for a convenient agreement in the

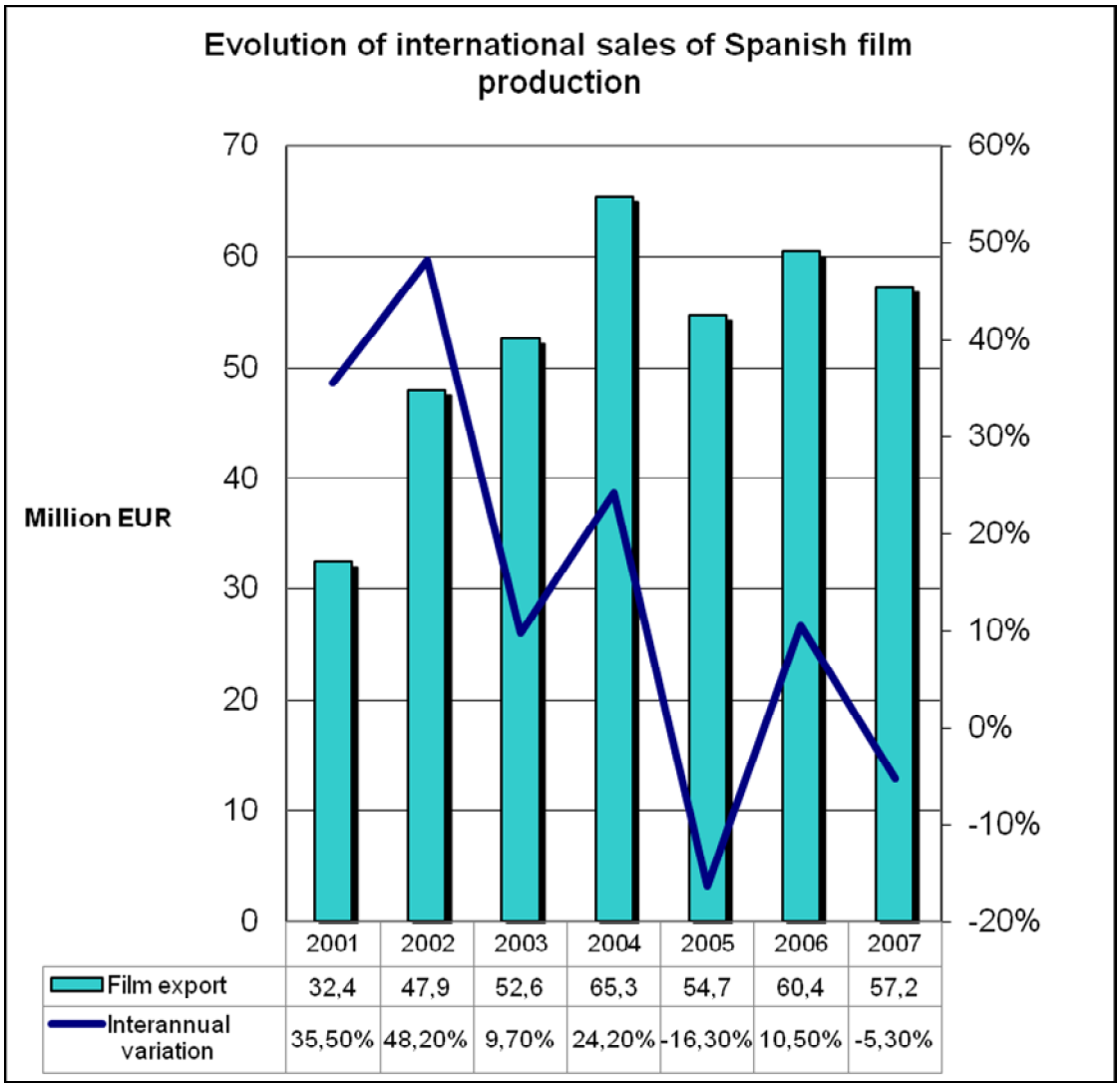
[8] Figures in the Graph 2.4. have been adjusted with year 1998=100. Data about spectators' numbers come from the website of the Spanish Ministry of Culture 'El cine y el video en datos y cifras. Evolución', (ICAA) <http://www.mcu.es/cine/MC/CDC/Evolucion/MercadoCine.html>, accessed 5 April 2009.

distribution of the necessary investment that will adapt existing methods to the new technology ('Boletín informativo 2008' ICAA, 2008:57).

2.2. Spanish cinema in the European Union film market

As mentioned before (see section 2. The Spanish film industry) Spanish cinema between 1990 and 2008 enjoys a good reputation abroad and keeps harvesting international awards and recognition.

From the economic perspective, Spanish film export to the world has increased in the period 2001-2007 (see Graph 2.5.).



	2001	2002	2003	2004	2005	2006	2007
Film export	32,4	47,9	52,6	65,3	54,7	60,4	57,2
Interannual variation	35,50%	48,20%	9,70%	24,20%	-16,30%	10,50%	-5,30%

Graph 2.5. Evolution of international sales of Spanish film production. Figures from 'Memoria 2007', FAPAE

As part of the European Union film market, the performance of the Spanish market presents a contrast between high levels of production (among the leading ones in the EU) and poor results for admission levels.

According to provisional figures for 2008 from the European Audiovisual Observatory[9] (press release 'EU film production reached record high in 2008', Strasbourg, 11 May 2009), the film market in the whole European Union in the year 2008 experienced an increase in production, reaching a record of 1145 feature films, 112 more than in 2007. On average, European production levels have grown by 7.1% since 2004. Among the 27 European Union countries France, Germany, Spain and Italy lead production activity.

Market share for European films in 2008 was 28.4%, close to 28.6% in 2007 and above previous years' level. Market share for US films remained stable at 63.2%. Co-productions with the United States Mamma Mia! (by Phyllida Lloyd) and Quantum of Solace (by Marc Forster) topped the European charts, these followed by French (12.6%), Italian (3.6%), German (3.5%), UK (2.2%) and Spanish (1.4%) productions (see Table 1.2.).

Market share for European films and US films in the European Union between 2004 and 2008					
Country	2004	2005	2006	2007	2008
France	8.6%	9.2%	10.6%	8.4%	12.6%
United Kingdom	4.5.%	3.9%	2.8%	6.1%	2.2%
Italy	2.2.%	2.9%	3.0%	3.8%	3.6%
Germany	4.3%	3.2%	4.8%	3.8%	3.5%
Spain	2.4%	2.3%	2.8%	2.1.%	1.4%
Other EU	2.7%	3.1%	3.9%	4.6	5.0%
Total EU	24.6%	24.6%	27.9%	28.6%	28.4%
United States	67.3%	60.2%	63.4%	63.2%	63.2%

Table 1.2. Market share for European films and US films in the European Union between 2004 and 2008 (2008 figures provisional). Source: European Audiovisual Observatory – LUMIERE database

[9] The mission of the European Audiovisual Observatory's mission is to gather and distribute information on the audiovisual industry in Europe. It was set up in December 1992 by the Council of Europe. Major activities of the Observatory are contributions to conferences, the publication of a Yearbook, newsletters and reports, the compilation and management of databases and the provision of information through the Observatory's Internet site (http://www.obs.coe.int)

Cinema attendance in the European Union slightly increased by 0.5% in 2008 (924 million admissions). High admission figures in France contributed significantly to avoid a second year of decline after the 1.3% drop in total EU figures in 2007.National attendance levels in France and Germany were the highest thanks to the success of local films such as Bienvenue chez les Ch'tis (by Dany Boon) and Astérix aux Jeux Olympiques (by Langmann, Thomas and F. Forestier) in France and Keinohrhasen (by Til Schweiger) and Die Welle (by Dennis Gansel) in Germany.

The list of top 20 European films by admissions in 2008 for the whole European Union is dominated by French and UK films in the top 5 positions. There are no Spanish productions in the top list of 2008.

Admissions increased in the majority of EU countries (18 out of 27) and declined in 9 of them. Countries with high admission figures were France (+6.7%), Germany (+3.2%), United Kingdom (+1.1%), Poland (+3.4%) and Denmark (+8.9%). The Netherlands registered an increase of 2.0% with respect to the previous year (see Table 1.3.).

Countering the growing tendency, Spanish and Italian markets shrank significantly in 2008, Spain showing a decline in attendance for four consecutive years (see section 2.1. The Spanish cinema in the domestic film market for an analysis of the situation).

Cinema attendance in some EU countries (2004 – 2008 prov.)						
Country	2004	2005	2006	2007	2008	% change 2008/2007
France	195.70	175.48	188.79	177.73	189.71	6.7%
United Kingdom	171.25	164.69	156.56	162.43	164.22	1.1%
Italy	116.34	105.55	106.11	116.40	111.63	-4.1%
Germany	156.71	127.32	136.68	125.43	129.40	3.2%
Spain	143.93	127.65	121.65	116.93	107.81	-7.8%
Poland	33.40	23.61	32.02	32.65	33.75	3.4%
Denmark	12.79	12.19	12.60	12.12	13.20	8.9%
The Netherlands	23.05	20.63	23.39	23.06	23.51	2.0%
Total EU est.	1012.9	898.9	931.6	919.8	924.2	0.5%

Table 1.3. Cinema attendance in some EU countries (2004 – 2008 prov.) Source: European Audiovisual Observatory_ LUMIERE Database

2.3. Home cinema practices and film piracy

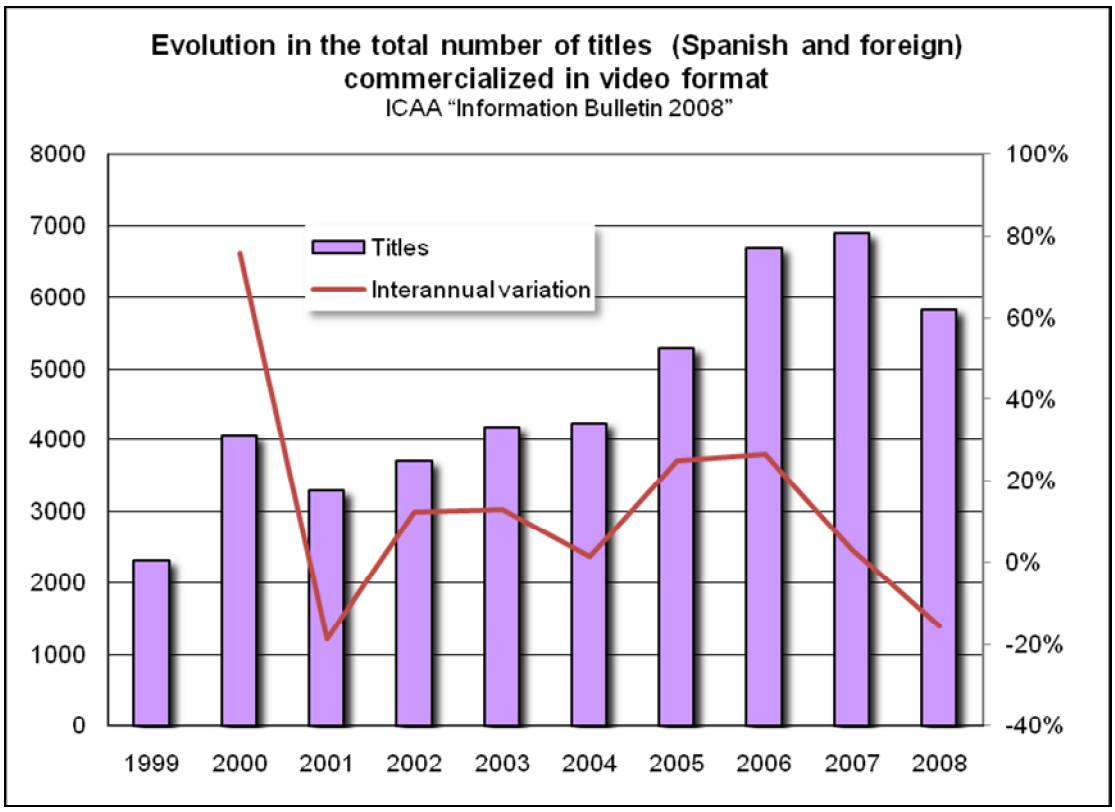
2.3.1. Home cinema in Spain

A survey about habits of cultural consumption in Spain in the year 2006-2007 revealed that 11.2% spectators wouldn't go to the cinema because they would prefer to watch a movie at home (either on television, video player or personal computer).

As far as the market for films in video format is concerned, during the period 1999-2008 the market experienced an increase in the number of new titles commercialized (in different video formats: VHS, DVD and Blue Ray[10]).

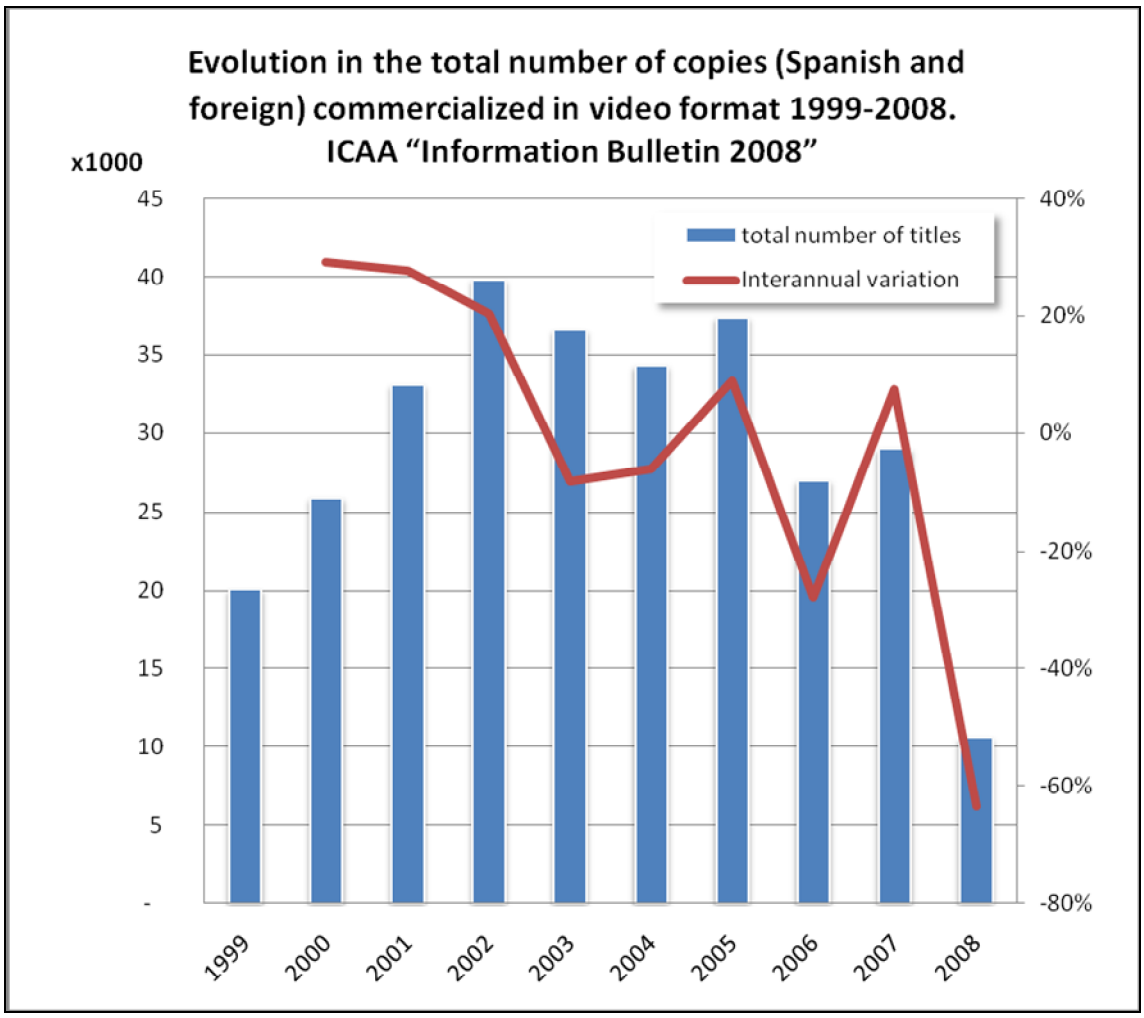
[10] "Blu-ray, also known as Blu-ray Disc (BD), is the name of a next-generation optical disc format. The format was developed to enable recording, rewriting and playback of high-definition video (HD), as well as storing large amounts of data." Blue-Ray Disc, <http://www.blu-ray.com/info/>, accessed 13 June 2009.

However, Graph 2.6. shows that in year 2008 the number of titles available fell significantly. The consumers had a lesser choice of new titles available in video format.



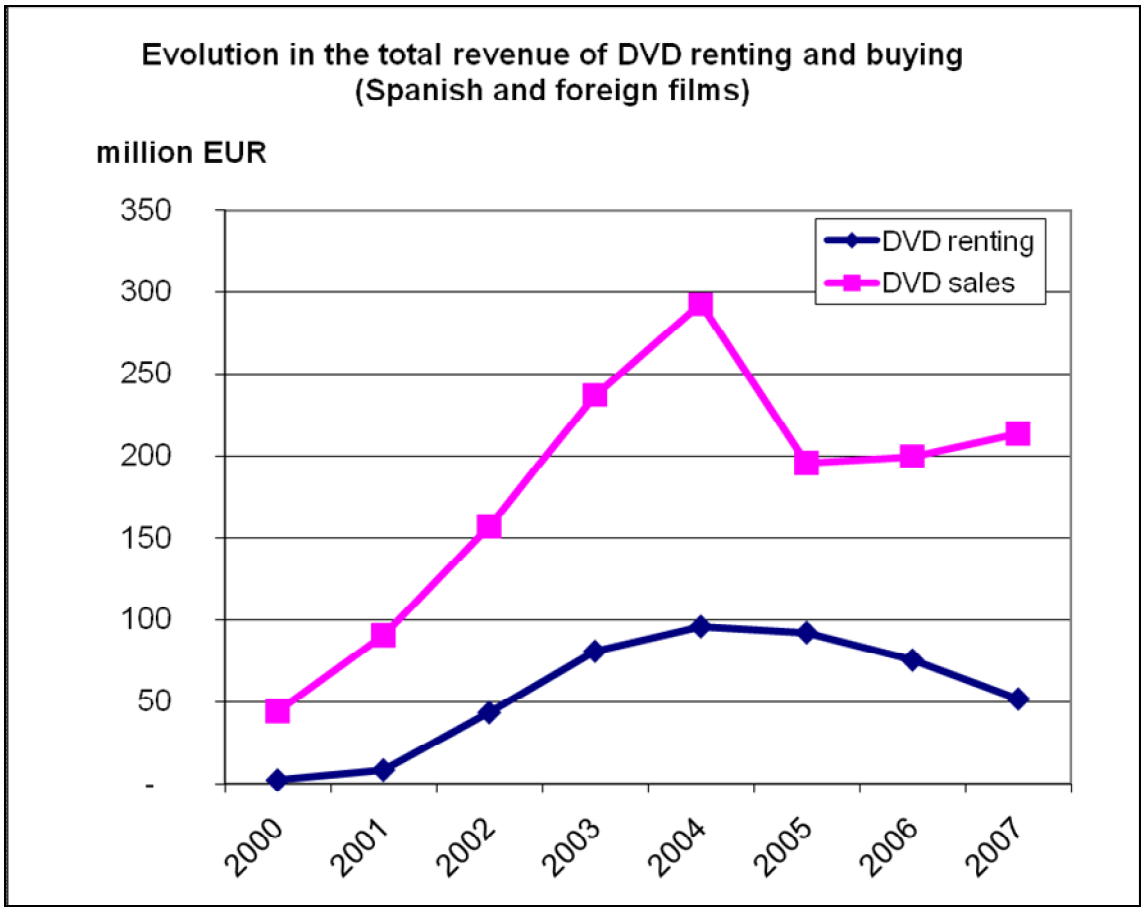
Graph 2.6.: Evolution in the total number of titles (Spanish and foreign) commercialized in video format 1998-2008. Figures from 'Boletín informativo 2008' ICAA (2008:4)

Not only the number of titles but also the number of copies commercialized in video format experienced a dramatic decrease in the year 2008. Figures dropped from nearly thirty thousand copies commercialized in 2007 to around ten thousand copies brought into the market in 2008 (see Graph 2.7.).



Graph 2.7: Evolution in the total number of copies commercialized (Spanish and foreign) in video format 1999-2008. Figures from 'Boletín informativo 2008' ICAA (2008:2)

With respect to DVD sales, a report from the Spanish Videographic Association[11] (UVE "Online Report 2005") warned that already between 2004 and 2005 the DVD sales dropped by 24% and DVD renting had been steadily decreasing from 2004 onwards (see Graph 2.8.).



Graph 2.8. Evolution in the total revenue of DVD renting and buying (Spanish and foreign films) 2000-2007. Figures from 'Online Report 2007', Unión Videográfica Española (UVE)

To sum up, fewer titles and fewer copies are available for consumption in video format and the market is losing profitability. Reasons could be found in the increasing power of competitors such as illegal selling of DVD copies and internet film downloading, both legal and illegal.

[11] The Spanish Videographic Association is a professional association created in 1991 by the Spanish top videographic companies representing 90% of the distribution sector.

2.3.2. Digital piracy in the film industry

An important consequence of the technological advance in the audiovisual market is the threat of piracy. Huge losses in the distribution and exhibition markets have torn the issue into a hot topic for the film industry. Unfortunately, methodological limitations impede to include a variable for piracy in the present study (see later section 5.5.8. Variables not used). Nevertheless, its growing importance deserves a close look into the matter both worldwide and in the context of the Spanish film market.

In 2005 the Motion Picture Association of America (MPAA, 2005) estimated in more than $3 billion annually the potential losses in worldwide revenue due to film piracy. Usual methods to estimate the effects of movie piracy over the box office revenue try to predict what would have been the revenue for a movie in absence of piracy. In a study about the effects of film piracy on box office revenue of an American movie, De Vany and Walls (2007) warn that these forecasting methods violate the 'nobody knows principle' about cinema demand (Goldman, 1983)[12]. This principle is based on the fact that it is impossible to make an accurate prediction of what the revenues for a film will be before it is shown on screens.

In order to respect this principle, the authors approach an analysis of the effects of movie piracy by using direct observable data and rejecting a forecasting method. They estimate a statistical model to test the effects of piracy on the dynamics of box office revenue during the course of the film's run.

De Vany and Walls describe how piracy damages the life cycle of a movie from different angles. Firstly, it is difficult for the film industry to absorb the losses caused by piracy, since only a few hits compensate for a majority of non profitable movies; when the revenues for

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[12] De Vany, A. and W. D. Walls (2007:292) explain the statement: 'Screenwriter William Goldman's (1983) famous statement that "nobody knows anything" about how a movie will turn out at the box office has been verified and rigorously developed as the stable Paretian hypothesis by a variety of authors. Goldman's statement has been refined and restated by Richard Caves as the "nobody knows principle": "That is, producers and executives know a great deal about what has succeeded commercially in the past and constantly seek to extrapolate that knowledge to new projects. But their ability to predict at an early stage the commercial success of a new film project is almost nonexistent" (Caves, 2000:371).'

those hits are diminished because of piracy, they are no longer in position of counter effect the poorer performance of other products.

Secondly, losses in early revenue of a film are magnified in the following windows of distribution for the product. Traditionally, the release strategy for a movie is adapted to the international market based on the performance of the movie in its country of origin. Nowadays, the industry is not able to adapt release strategies to initial revenue performance because box office figures are not reliable as indicators of demand preferences. Studios try to avoid the problem by making domestic and international release of major movies simultaneously.

Thirdly, the exhibition market suffers a distortion in the number of sources of supply, which is artificially increased by pirate 'exhibitors'. The film is available in many more windows than those initially designated by legal exhibitors. Consumers may choose from a much wider range of suppliers in order to watch a movie. Consequently, alternative pirate supply reduces revenue from theatres. This affects the natural process of a movie's running time in theatres. The usual method for determining how long a movie will run on a theatre has to do with weekly revenues. A decline in revenue takes a movie out of the theatre, excluding it from a prospective extension of the running contract and occasionally pestering future contracts with other exhibitors.

In the fourth place, the demand side may react negatively to a low performance in the box-office ranking, persuading movie-goers not to watch a certain film.

Summarizing, 'a pirated movie will play off more rapidly and lose revenue at an accelerated rate during its run.' (De Vany and Walls, 2007:294).

The empirical model estimated by De Vany and Walls relate the change in revenues of a film to the number of Internet sites with a pirate copy available and the week of the run. The findings of the search for pirate site availability show that 'the power of the Internet to expand supply is enormous. The Internet sites made the movie available throughout the world even though it had only been released to theaters in the US, UK, Spain, and Argentina. The pirate supply was almost as large as the legitimate supply on opening week (and was available two weeks before the opening) and surpasses the legitimate supply in most weeks during the early (high revenue) weeks of the run.' (ibid., 2007: 298)

The study was only performed with one single movie and it was limited to an initial seven weeks' run. The authors complain that the sample of movies in the study is not large enough. Nevertheless, the results show a positive relation between the decline in weekly box-office revenue and the number of pirate sites available for movie downloading before and during its run.

An ambitious latter analysis about film piracy was undertaken in 2008 by Walls with the purpose of increasing empirical knowledge of film piracy worldwide. According to the Motion Picture Association of America (MPAA, 2005) 'Notable hubs for optical disc piracy in Asia-Pacific include China, Malaysia and Taiwan. China's piracy rate is among the highest in the world, at 95% and has increased in recent years. Russia is also a hotbed of commercial pirate operations. Video piracy is the main source of piracy in Latin America and within this region Brazil is the largest market.' (Walls, 2008:626)

Walls investigated economic and sociological factors having to do with film piracy levels in 26 countries (including Spain).The variables used were cost of enforcing property rights, per-capita income, level of collectivism in the society and internet usage rates.

Early theoretical studies on software piracy found that the optimal way to combat piracy from a supplier level is to reduce prices (Png and Chen, 1999 in Walls, 2008:625). Another usual anti piracy method is to develop copy protection technologies for retail copies; however, this method has two major draw backs: first, technologies are easily worked around by most computer users (Perry, 2005 in Walls, 2008:627) and secondly, the most important source of internet pirate movies is copies from inside the industry, which are used for pre-screening and marketing purposes (Byers et al., 2003 in Walls, 2008:627). Low cost for the adjudication of property rights is also recommended as an anti-piracy method. The owner will only reinforce the protection of the product if the cost is relatively low.

The first hypothesis in the study expects piracy to increase in countries with higher costs for enforcing property rights. Secondly, pirate movies are substitute products not only for the original film but also for other forms of low-cost entertainment. From this perspective, Walls's second hypothesis presumes that levels of piracy should be inversely related to level of income: the higher the income, the lower piracy levels. The third hypothesis deals with collectivism in society. The expectation is that more collectivist societies with usual sharing of

resources would have higher levels of piracy at a lower cost. The fourth hypothesis has to do with internet both as a source for piracy and as a competing source of substituting entertainment. Better infrastructure and higher rate of internet usage could either empower piracy or work against it.

Walls's findings show that piracy, as expected, increases with rising cost of property rights and in collectivist societies; but income is statistically unrelated to levels of film piracy; and surprisingly, piracy is decreasing with higher levels of internet usage, what relates to the belief that internet is also a provider of audiovisual entertainment products that are substitutes of film piracy (Walls, 2008:629).

The problem with this worldwide analysis by Walls is that countries render extreme differences between observations, for instance in aspects like per-capita income and internet usage. To avoid misleading results, the author further recommends circumscribing the analysis to each separate country, where a combination of empirical testing with in depth knowledge of local markets and institutions would perhaps be inspirational for adequate anti-piracy policy making.

2.3.3. Film piracy in Spain

Film piracy in Spain is usually mentioned as a main cause of the decline in film theater attendance (González-Sinde, 2009). As mentioned before, lack of data and methodological limitations make it impossible to include a variable for piracy in this study (see section 5.5.8. Variables not used). However, it seems necessary to explain at least the mechanisms by which piracy affects the film industry.

The growing menace of piracy in Spain is in principle related to higher levels of internet use in the country. The use of the internet keeps growing in Spain. The International Intellectual

Property Alliance (IIPA[13]) gives some figures about internet use in the country for the year 2008: 'There are approximately 25.6 million Internet users in Spain, amounting to 63% of the population (a significant increase from the 2007 statistics of 22.8 million Internet users and 55%, according to www.Internetworldstats.com). Some 51% of households (7,700,000) have broadband access (that is an estimated 17 million users) which represents a growth of more than 1 million connections and an 11% increase in number of users from the previous year.' ('Special 301 Country Report_ Spain ', IPAA, 2008)

From among the audience that stays at home to watch a movie on the computer, very few choose to watch a Spanish title. Only 0.9% of the 100 top downloaded movies from HispaShare.com[14], one of the most popular portals for free film downloading in Spain, were Spanish movies (Rodríguez, D. in the press,2009). This is a low percentage in comparison with the 13.31 % market share of spectators for Spanish movies in theatres.
Results for Spain in the afore mentioned cross country analysis of movie piracy by Walls (2008) are close to mean values in the observation sample; there is no clear indicator among those chosen by the researcher (i.e. cost of enforcing property rights, per-capita income, level of collectivism in the society and internet usage rates) by which Spain would stand out in a global context.

However, data for piracy in the year 2008 placed Spain at the head of countries in the Organization for Economic Co-operation and Development (OECD) for illegal downloading:

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[13] The International Intellectual Property Alliance (IIPA) 'is a private sector coalition, formed in 1984, of trade associations representing U.S. copyright-based industries in bilateral and multilateral efforts working to improve international protection and enforcement of copyrighted materials and open up foreign markets closed by piracy and other market access barriers. IIPA's seven member associations are: the Association of American Publishers (AAP), the Business Software Alliance (BSA), the Entertainment Software Association (ESA), the Independent Film & Television Alliance (IFTA), the Motion Picture Association of America (MPAA), the National Music Publishers' Association (NMPA) and the Recording Industry Association of America (RIAA)'. 'Description of the IIPA', International Intellectual Property Alliance <http://www.iipa.com>, accessed 15 June 2009.

[14] Hispashare' is based on peer-to-peer or P2P technology, which allows private users to exchange computer files. In the year 2008 P2P technology was not illegal in Spain but it had already been subject to several trials in an effort to illegalize it. Hispashare <http://www.hispashare.com/>

2,000 million music files, 350 million media files (film and video) and 50 million video games; that means, 2 out of 10 illegal internet downloads in Europe occurred in Spain[15].
In the same year 2008 the IIPA recommended that Spain be placed by the U.S. Trade Representative government agency (USTR) on the Watch List of countries 'that deny adequate and effective protection for intellectual property rights or deny fair and equitable market access for persons that rely on intellectual property protection' ('Special 301 Report on Copyright Protection and Enforcement', IIPA, 2004[16]).

IIPA country report for Spain in 2009 mentions that the Spanish government is making some effort against street piracy (sales of pirate DVDs) but there is a legal void concerning internet piracy; this uncertainty prevents police from taking any specific actions against this form of piracy. The report also calls for intensive campaigns of public education, because there is no clear conscience among the population that digital piracy is an illegal act (IIPA, 2004 'Special 301 Country Report, Spain).

In 2006 Ricard Gil made a preliminary analysis about piracy in Spain concerning the film industry and the musical industry. Gil describes the structure of the film industry in Spain in comparison with other countries, mainly, in comparison with that in the United States.

The film industry works through three main types of agents: producers, distributors and exhibitors. The United States is one of the biggest film producers in the world and among its films there are lots of blockbusters. In that country, production and distribution are vertically integrated, which means that both operations take place inside the same company; such is the case for Warner Brothers or Universal. Usually, distributors create branches in other countries in order to control the foreign exhibition of their films. In Spain around 80% of released films are from foreign origin and among them, around 70% come from the U.S. As a consequence,

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[15] 'Boletín NRed, Coalición de Creadores e Industrias de Contenidos, 2' (Bulletin NRed, Coalition of Content Creators and Industries) November 2008 (FAP) Federación para la Protección de la Propiedad Intelectual <http://www.fap.org.es/boletin.asp>, accessed 15 June 2009.

[16] Spain has been included on USTR Watch list from 1989 through 1994, in 1999, 2000 and 2008. 'Special 301 submission _Appendix E: Historical Summary Of Selected Countries' Placement For Copyright-Related Matters On The Special 301 Lists_ Spain', IPAA, <http://www.iipa.com/pdf/2009SPEC301HISTORICALSUMMARY.pdf>, accessed 15 June 2009

there is no such close relation between producers and distributors and many Spanish distribution companies deal only with foreign film import activities.

Gil (already mentioned in section 2.1.1.) relates this lack of vertical integration to the weakness of Spanish film production sector, which survives thanks to governmental protective actions like subsidization and market share restrictions. Thus, producers in the Spanish film industry are not entirely dependent on distributors and exhibitors for their continuation; and inversely, distributors and exhibitors do not rely completely on the performance of Spanish film products. Under such structure, the impact of film piracy in Spain is not so strong on the production stage, but it mainly goes against distributors and exhibitors, that is, against distribution companies, theatre exhibitors and home cinema retailers.

There is an additional difference between the impact of piracy over Spanish movies versus the impact of piracy on American hits. Even though there is little empirical observation of piracy of Spanish movies, I assume that pirate supply for a Spanish film in the early weeks of its running time is far below the availability of pirate copies of U.S. blockbusters in the same release period. Further research could highlight whether the effect of piracy over Spanish movies is stronger in the theatre exhibition stage than in subsequent exhibition windows, such as pay-per-view or home video retailing.

In such scenario, the situation could well be positive for the Spanish film production sector in terms of growth, quality and recognition, but adverse for the distribution and exhibition sectors, which suffer the combined effects of demand uncertainty and piracy.

To sum up the situation, the comments in the press that Spanish cinema is performing poorly are not responding to a true analysis of the current context for the Spanish motion picture industry. Those comments are solely based on the situation of the theatre exhibition sector, which is a fraction of the whole movie industry. Moreover, the exhibition sector is undergoing deep changes influenced by numerous and diverse external factors. Star directors are just one part in the film industry engine; are they to blame for major fluctuations in cinema attendance? In order to try an answer to this question, we will take a close look at the economic theory that surrounds the movie industry.

3. Theoretical framework

3.1. Demand uncertainty in the movie industry

Whenever a person decides to watch a movie, several constrains determine her decision as consumer of a cultural product. Standard utility functions for household consumption include objective variables such as price, consumer income, price of substitutes or even time as traditional determinants. In addition to those objective aspects, subjective issues arise when the consumer asks herself: 'am I going to like this film?' or even 'is it a good film?'

Demand for the cinema is extremely uncertain and the movie industry is a risky terrain. Films are complex products, each film being a unique combination of characteristics. Consumers of a film may know of its quality in advance thanks to expert opinions from critics and reviews in the press, or thanks to other people's comment. However, consumers will ultimately know about quality of a film only after watching it, after experiencing it.

3.1.1. Accounting for quality in studies of demand for cultural goods

Some cultural products reflect qualitative characteristics in their price. In the case of the performing arts, a concert of a well reputed musician will charge higher prices than a concert played by an average quality performer. The case for products of cultural industries and specifically for the film industry is different because the entrance ticket for a nickelodeon will be the same, no matter which film is shown. If there is variation on the price, it is for reasons such as discounts or special offers. Hence, price does not account for quality by itself; other parameters must be considered.

A theoretical analysis may start by bringing along studies of demand for the performing arts, specifically, studies of demand for the theatre, since some output characteristics are similar to those of the cinema (for instance, plot, cast, director and genre.) In analyzing demand for the theatre several authors like Throsby (1990) or Werck and Heydenls (2007) are aware of the importance of qualitative characteristics or output characteristics of the cultural product as determinants for the decision making process of consumers. Of course, the difficulty lies in producing measurable and objective variables out of those qualitative characteristics.

Throsby ('Perception of quality in demand for the theatre', 1990) reminds economists of the importance of quality judgments in decisions relating to the production and consumption of the arts. In his opinion, economists should not discuss aesthetical issues but rather search for systematic qualitative components in decision making processes.

He considers quality as a multidimensional concept, meaning that quality is susceptible of being broken down into several measurable components. He invokes a pluralist approach, which benefits from the combination of speculative disciplines, like philosophy and aesthetics, together with social sciences such as psychology and sociology, the latter more concerned with behavioural aspects of artistic response. The pluralist approach combines objective and subjective components in demand and utility functions.

Throsby materializes the idea of a pluralist approach searching for systematic quality components that affect the decision making processes of companies, consumers and funding bodies. Throsby applies his systematic method onto quality components in demand for the theatre in Australia, with objective criteria like the source material (date, known playwright or author); and subjective criteria like benefits to the art field (innovation) or benefits to the society (education, enlightening). However, it is still difficult for the author to make a clear objective measurement of those subjective criteria and he justifies by simply stating that 'many facets of quality can be specified without measurement' (1990:66). What is more, his study is limited to quality factors while some significant standard variables, such as consumer income, are left out.

Werck and Heyndels also analyze demand for the theater in their article 'Programmatic choices and the demand for Flemish theatre' (2007). They review previous demand studies of the performing arts and conclude that many of them are based on the traditional model of household consumption (see, for instance, Moore 1966), which uses standard variables, such as ticket price, price of substitutes and income. Some other analyses incorporate quality as a factor suspected to influence demand. Those studies either regard quality as one-dimensional or as multi-dimensional.

Among the ones in the one-dimensional group, Krebs and Pommerehne (1995) define quality by opposing popularity to 'highbrowness' (related to high culture). Others include the ratings by experts assuming they will have an influence on demand (Kelejian and Lawrence, 1980).

For those regarding quality as multidimensional, the concept is broken down into several components (that is the case in the theatre study by Throsby, 1990 that has just been reviewed in this essay.) Multidimensional characterization of quality follows the lines of Lancaster's (1966) new consumer theory of the total experience. The multidimensional approach allows for incorporating both objectively determinable output characteristics and subjective quality assessments by experts. All characteristics should be measurable.
Every single performance is a combination of all factors and rational consumers will choose the optimal combination. Taking this into account, a suitable study of demand should include all possible influencing variables, both related to standard household consumption and to quality factors.

The study by Werck and Heyndels is an example of quality treated as multidimensional in reference to demand in Flemish subsidized theatres. Authors were surprised about the fact that, even though the Flemish theatre had gained a strong reputation over the previous two decades (see Van den Dries, 1996), attendance had declined. They go back twenty years before and make a comparison between repertoires at the time and current repertoires. They extract five characteristics that describe changes in the performances' qualitative output: original language, age of the playwright, adaptation, cast size and innovation. Programs showed changes in those variables with respect to repertoires of twenty years before. Therefore, it was plausible that those variables had some influence in the demand. They reckon, however, the difficulty of depicting a complete qualitative scenario of a performance.

3.1.2. Cultural goods as experience goods

The multidimensional approach to quality in demand functions used by Throsby and Werck ultimately relies on Lancaster's new consumer theory and the concept of total experience applied to the art's consumption.
Lancaster's article 'A new approach to consumer theory' (1966) breaks away with the traditional theory that goods are the direct object of utility and instead, explains consumer's behavior as moved by the characteristics of the good, these being the ones which derive a certain utility. The main ideas in the theory assume first, that goods do not derive utility by themselves but by their characteristics; second, that a good generally possesses more than one characteristic and that many characteristics will be shared by more than one good; thirdly, that a combination of goods may possess different characteristics from those of each good taken

separately (1966:134). The model enables multidimensional approach to understanding consumer's behavior. In situations involving risk the author recommends using multiple characteristics to better analyze individual behavior (1966:148).

Few years after Lancaster, studies by Nelson (1970) on information and consumer behavior for consumers' goods focused on quality differences. Nelson mentioned experience versus search attributes of goods. His analysis refers to consumers' goods in general but experience and search attributes also apply to cultural goods. He complains that economists have not developed a systematic analysis of consumer quest for information about quality differences. Information about quality is in his opinion more expensive to acquire than information about the price. 'For any good, the consumer has a choice between searching or experimenting to obtain information about the good's qualities.' (1970:317). The most obvious procedure for the consumer to obtain info abut quality is by searching. However, Nelson considers experience a simple alternative to search as long as the price of the good is low enough. Furthermore, advice will be used more for purchase of experience goods than search goods, and the more guidance the lower the frequency of purchase.

Contemporary to Nelson, Akerloff (1970) addresses the question of quality uncertainty and asymmetrical information as factors influencing the market mechanism. Akerloff reclaims quality as one of the most important aspects of uncertainty (others being, for instance, rate of return). The best procedure to know about quality of a product is by way of experiencing. After experience, the estimate about quality is more accurate than the original estimate, what results in a situation of asymmetrical information. The situation might derive in dishonest behavior by the party with the more accurate estimate about quality of a good. Looking at the movie industry, the situation may compare with the privileged a priori information that producers and critics have about a movie and the way they transmit it to the audience.

Akerloff mentions guarantees in the case of durable goods and brand-name goods as institutions that counteract the effect of quality uncertainty. Brand-name goods give the consumer both a guarantee and an opportunity of retaliation by avoiding future purchases if quality does not meet expectations. In the case of cultural goods and more specifically, in the movie industry, production companies, directors and even actors of reputation might work as an equivalent for brand-name goods. Assuming that brand-name attribute, film directors would play a role in attracting or repelling future consumption of their films.

3.1.3. Cultural goods as information goods

Back to the idea of what influences a consumer in the decision of watching a film, the social circle definitely has a say in it. Treated as information goods, demand uncertainty for cultural products can relate to network effects and with shifts in information cascades.

Among the many definitions for the term 'information', there is one which refers to it as 'any data that can be stored' (Your Dictionary, 2009). Michael Hutter gives a definition of information economy by saying that it 'serves the needs of citizens for telecommunication services, education, entertainment, and infinite varieties of information, either stored in libraries or delivered in real time.' (2003:263) Art and culture activities contribute to the supply of information goods, such as books, audio and video files and events.

Information economy may be defined by opposition to traditional economy. Traditional economy explains production and consumption as individual distinct units. However, the information economy relies on shared mechanisms of production and consumption, strongly influenced by the network where they take place. Regarding consumption, Hutter (2003) identifies three important effects of networking: network externalities, community effect and social contagion effect.

Network externality is a change in the benefit that an agent derives from a good when the number of other agents consuming the same good changes (Liebowitz and Margolis, 1998). Thus, the more participants in a network, the higher the utility derived from taking part in it. Communication media (from traditional telephone to video conference) are all affected by network externalities.

The community effect is reinforced through the use of internet. Internet communities feed from individuals who share and contribute content together with other users. A psychological process of feedback and acknowledgement gives the impression that preferences are somehow internalized by the community, which helps building a reputation of the contributors. In some cases, content contribution blurs the distinction between producer and consumer. Hutter (2003) also comments on how local traditional communities (such as neighborhoods or universities) are trespassed by the effect of global reaching communities. The third effect, called social contagion effect explains why situations of quality uncertainty foster communication among individuals as a means to determine preferences. These

preferences change and shift with the introduction of any new information in the context. It makes social contagion effect ephemeral and extremely sensitive to innovation.

In relation to this problem, Bikhchandani, Hirshleifer and Welch (1992) connect demand uncertainty with information cascades. They state that information cascades give an explanation both for uniform behavior and for drastic changes in it, such as fads. The mechanism of information cascades usually explains the fragility of mass behaviors. They say that "small shocks [in the information chain], can frequently lead to large shifts in behavior" (1992:993), with the introduction of new information showing the fragility of a cascade.

Another explanation of shifts in demand is given by Kretschmer, Klimis and Choi (1999). The authors talk about demand reversal in cultural industries related to socio-psychological network effects: 'a product becomes the product to be seen but as more and more people consume it, the network externalities may turn negative. Once too many people enter a particular fashion, it ceases to be a fashion anymore.' (1999:64). The shift is based on the action of two competing psychological drives: individuality and novelty versus conformity and traditionalism. Both are necessary to keep demand going, if one is absent the sway comes to an end (Sapir, 1937, in Kretschmer et al. 1999:64).

3.2. Accounting for quality in demand studies for the cinema

In spite of the fact that success of a film is subject to uncontrollable network effects and information cascades, already in the 80s several authors began to wonder about the determinants of success for movies.

Considering the difficulty of accounting for quality in a film, most studies looked at experts' opinion and box office receipts in search for a clue about what makes a movie a hit (for instance, Hirschman and Pieros, 1985). However, it is often the case when critics' reviews go opposite to audience choices. In extremis, audience is said to be influenced by marketing and publicity (Ginsburgh and Weyers, 271), whereas film experts may be suspect to obey political or economic reasons (ibid. 275). Let see what evidence about the relationship between experts' opinion and consumers' preferences can be found in the literature.

Hirschman and Pieros (1985) give short-term indicators of success in the form of professional reviews, awards and box office data. The study finds a negative correlation between opinion of film critics (reviews and awards) and audience's preferences in terms of box-office results.

Smith and Smith (1986) analyze validity of determinants for success by comparing types of awards for movies over time (four decades) and conclude that the characteristics of successful films change overtime. They ask for further research on empirical models to define film's characteristics which suit consumer demand.

Ginsburgh and Weyers (1999) also stress the importance of time as a proof of consistency in judgments from both experts and consumers. They test consistency between short- and long-run evaluations from both experts and consumers: for experts, they seek agreement between immediate awards and later best movie lists or ratings; for consumers, they check agreement between box office receipts and later (television) broadcasting frequency, assuming that broadcasting programming reflects audience's tastes. Their results show that consumers' preferences are more consistent over time than critic's opinion. The authors also confront consistency between experts and consumers' criteria. In the short run, consumers and experts agree since award-winning pictures achieve high box office receipts. In the long run, though, their opinions differ because there is no association between television broadcasts and best movie lists. Ginsburgh and Weyers end up invoking Lancaster and the fragmentation of a work of art into quantifiable characteristics as a possible way to explain quality.

3.3. Determinants for box office performance

There are wide and varied examples of empirical research about the determinants of films' box office performance. From among them, I bring up an analysis of the Spanish market performed by Fernández and Baños in 1999 and a study from Bagella and Becchetti (1999) about Italian cinema, which focuses on the influence of human factors on box office performance.

Fernández and Baños (1999) are the first authors to empirically explain the decline in cinema attendance in Spain between 1968 and 1999. They make a cointegration analysis using highly aggregated data. Their findings show that cinema in Spain is a luxury good and that demand for the cinema is elastic with respect to price. They also show the negative influence of television on attendance.

The aim of their paper is to study the main factors driving cinema attendance in Spain. They write an individual demand function for cinema in terms of average attendance per inhabitant and year. They expect cinema demand to be positively affected by income and the price of substitutes and negatively influenced by the price of cinema, the price of complementary goods and the influence of TV and video.

The study presents a main drawback, though. They accept quality as a significant determinant for cinema attendance but refuse to include it in the analysis. They defend this option based on the difficulty of finding a unit of standard quality for the sample period and on the assumption that in a time series the distribution between bad and good movies might be very similar each year so that quality would be more or less homogeneous for the whole period (1999: 61).

They conclude that the decrease on cinema attendance in Spain from 1968 to 1992 is the result of a continuous increase in ticket price and a change in the consumers' preferences, motivated to some extent by the increase in television programming.

Bagella and Becchetti (1999) examine determinants of box office performance for movies produced in Italy between 1985 and 1996. They build a demand function which focuses on several aspects: first, the popularity of director and cast (which they call 'human inputs'); second, the impact of state subsidization; third, marketing capacity of production houses; fourth, the relative success of genres.

They assume that human input have a non linear correlation to total admissions and that the interaction between the popularity of director and cast generate additional positive externalities on movie performance. With regard to subsidization, they expect subsidized films to perform lower than the rest of movies because of lower popularity of cast and director.

Several econometric estimates are performed for linear and non linear models; plus, they test the effects of an additional factor for interaction between director and cast popularity. Their results show that popularity of director and cast affects box office performance in non linear models and that the interaction factor between them has a positive impact on total admissions.

With regard to the other hypotheses tested they find out that subsidization has no relevant effect on the mean of the dependent variable and that only one production company has a positively significant impact on attendance. Finally, the positive and significant effect of the genre comedy on total admissions seems to tell about the taste of Italian cinema goers (Bagella and Becchetti, 1999:246).

The Italian authors bring out the issue of the importance of human factors in the success of a film. The next section examines the literature about the effect of talent and stardom on success.

3.4. The superstar phenomenon

By writing the article 'The Economics of Superstars' economist Sherwin Rosen (1981) started an economic approach to the phenomenon of stardom. He investigated 'The phenomenon of Superstars, wherein relatively small numbers of people earn enormous amounts of money and dominate the activities in which they engage.' (1981: 845) He mentions realms like show business, arts and letters and sports where the phenomenon is well known but warns that examples can be found in several of the professions, such as authors of academic textbooks (!).

Rosen made an effort to explain how small differences in talent take to large differences in success and in gains. He assumed that there are differences in quality from artist to artist and that those differences are subject to quantification. One way of quantification focuses on differences in income between star performers and average performers. Another measurement explores differences in success between stars and non stars: stars are assumed to attract to more consumers. They link utility maximization to star's productions. Rosen assumes that 'All buyers maximize utility and cannot improve themselves by purchasing from another seller.' (ibid. 846) Rosen further assumed that willingness to pay for the star's performance also rises.

Rosen's model initiated a line of research of special interest for the performing arts and the cinema industry, where star system plays a significant role.

The broad scope of Rosen's theory was narrowed for the creative industries by Caves (2000). With the music industry as an example, Caves assumes that 'Buying a ticket for the established

star does not guarantee a good show, but the chances are substantially higher.' (2000:74). He explains that stars are in the position to ask for a higher price for their products than mediocre or unknown artists do. In cases of undifferentiated price, such as price for cinema tickets in the film industry, stars will attract more consumers (ibid. 73).

Rosen's theory of stardom has been criticized for several reasons, though. Schulze (2003) makes a comment on the limitations of a model which disregards product differentiation and monopolistic competition models. Shulze posed clear limits to the power of stardom by the arrival of close competitors, as well as by the variety and volatility of consumers' tastes.

From a different point of view, Rosen did not explain, either, the mechanisms that give rise to a star. MacDonald (1988) tried to solve the matter in a model with two periods. Once a performance takes place, the result is shown to all parties interested. Good results open the way for the second period performance. The advantage creates a gap between experienced artists with good first-period results and newcomers, benefiting the rising of a star.

Further analysis by Moshe Adler completes the depiction of the phenomenon of stardom from the demand side. His article 'Stardom and Talent' (1985) describes the learning process required by consumers to built up an artist specific consumption capital. Several economists have tested the addictive effect of art consumption and the fact that art consumption marginal utility increases with the ability to appreciate art (see, for instance, Stigler and Becker, 1977). Artist specific consumption capital also increases by discussion with other consumers, thus creating positive network externalities. A massive network effect may turn an artist into a star in what is known as a snowball effect.

The application of the theory of stardom to the film industry has been leaded by the Hollywood analyst Arthur De Vany. De Vany carried out several demand studies in search for determinants of box-office performance in an extremely uncertain and risky business. Together with W. D. Walls he wrote an article in 1999 entitled 'Uncertainty in the Movie Industry: Does Star Power Reduce the Terror of the Box Office?' The article is a comprehensive analysis of the relations and behavior of determinants for success in a vast sample of 2000 American motion pictures. Their conclusions reject stardom as a truly significant determinant for box-office and audience performance. Instead, these authors claim the well known statement in the demand for cultural products that 'nobody knows' and conclude that 'The real star is the movie' (1999:285).

Their analysis of Hollywood exhibition market shows the statistical reality of an uncertain industry. Box-office revenues are in asymptotical Pareto distribution and the probability distribution of outcomes has infinite variance. De Vany and Walls identify the distribution of box-office revenues as a Lévy stable distribution process. They prevent about the type of events to be expected in such processes:

Lévy stable distributions have a 'heavy' upper tail and may not have a finite variance. Theoretically, the skewed shape of the Lévy distribution means there is no natural scale or average to which movie revenues converge. Movie revenues diverge over all possible values of outcomes. The far-from-normal shape of the Lévy probability distribution of box-office revenue and its infinite variance are the sources of Hollywood's 'terror of the box office'. Success is tied to the extremal events, not the average; the average is driven by the rare, extremal events. The movie business is not 'normal' because outcomes do not follow a normal probability distribution. There are no formulas for success in Hollywood. (De Vany and Walls, 1999:286)

The complexity of the film products makes them extremely sensitive to information cascades and network effects that are unpredictable. The usual strategies of Hollywood producers, like screen booking, budgeting, marketing, hiring star directors and actors, all rely on previous experience. De Vany and Walls warn that it is a wrong strategy because, once the movie is released there is no conventional wisdom capable of predicting the outcome. The fate of a movie is ultimately and inevitably in hands of the audience.

All in all, these Hollywood researchers try to predict the probability of occurring events using risk and continuation analyses. They work on running times and survival functions for films, extending their analysis to the relation between budget, profit and returns [17]. They also test the influence of star directors and actors in their functions. The results show that movies with

[17] A study path based on released strategies, running times and survival strategies for motion pictures is out of the scope of the present analysis about Spanish films. Further notice to this respect and with regard to the mapping of the Spanish film industry can be found in Gil ('Revenue Sharing Distortions and Vertical Integration in the Movie Industry', 2007).

stars stochastically dominate movies without stars in terms of box-office gross (De Vany and Walls 1999:296); stars also increase the median of the returns distribution so that they make the distribution less skewed (ibid. 1999:300). However, they refuse attributing these results to star power but rather to the fact that movies with stars usually enjoy advantages such as larger budgets and wider releases.

The continuation analysis associates longer running time with hit movies. For this reason, De Vany and Walls state again that the ultimate decision comes from the audience and no amount of star power, budget or promotion is as important as the consumer's choice in order to make a movie a hit. Their example is El Mariachi, the movie by Robert Rodríguez. Counting only on a small budget and an unknown cast, the film became a hit and enjoyed extremely long running time. The audience choice helped keeping the movie on screen and increased the profit.

In conclusion, these American authors list a number of significant factors for a movie's performance, factors such as budget, marketing, screen booking, running time and presence of star directors and actors. Nevertheless, none of these factors by themselves can predict a result.

4. Hypothesis

The aim of the research is to test Rosen's theory of stardom in the Spanish film market. Specifically, the influence of star film directors on theater attendance for movies produced in Spain in the period 2004-2008.

I intend to test the following hypothesis:

Popularity of star film directors on the Internet does influence theatre attendance in the domestic market for Spanish movies.

As mentioned before, Rosen (1981) assumed that there is a correlation between quality and stardom. By virtue of this, small differences in talent take to large differences in success and in gains. Rosen also assumed that higher quality in cultural products brings along more utility for the consumer. Previous satisfactory performances of the star raise the probability of a good choice for the consumer. So to say, consumers would prefer to pay for a star's product with an expected quality, rather than for a product by an unknown artist of unknown quality. Consequently, willingness to pay for stars' performances rises.

The current film industry in Spain shelters a few renowned régisseurs, like Oscar- winning Pedro Almodóvar or the young talent Alejandro Amenábar. Inevitably, these masters are made responsible for the good or bad health of Spanish cinema, not only with respect to quality and international prestige, but also in relation to economic results. Yearly attendance and box-office revenues seem to breathe along with their inspiration.

Nevertheless, an empirical test of the influence of Spanish star film directors on theatre attendance has not been done yet. It is important to test such influence in order to prove it or forget it as a reason to justify the ups and downs in domestic theatre attendance for Spanish films.

In an effort to give a quantifiable proxy to the idea of stardom, I assume that star directors are more popular than average directors. Following the theory of stardom, popular directors would attract more consumers to the theatres, since consumers would be better willing to pay

for their films. Their movies have a quality difference that increases their sales; quality as perceived by consumers, which may differ from quality judged by experts.

Keeping in mind the idea that demand for the cinema is uncertain and films are complex products, I start by checking the correlation between attendance and director's popularity and then continue checking further correlations. Actors being stars, the theory of stardom could also apply for them, so I check the correlation between cast popularity and attendance. Other factors, such as genre, are tested as well.

After this initial approach, I complete the analysis by modeling a demand function for Spanish cinema attendance. The function follows models with a combination of standard and non standard variables, the latter accounting for subjective aspects having to do with cinema consumption. The demand function is tested against several multivariate regression models, both in linear and non linear ways. The regression estimates will show whether the director's popularity or any of the other factors in the model have a significant impact on film theatre attendance.

5. Research method

5.1. Methods for analysis of the role of stars as determinants for film success

Previous studies use varied statistical approaches in search for an explanation of the role of stars as determinants for box office performance and attendance patterns to film theatres.

Wallace, Seigerman, and Holbrook (1993) use regression models to analyze the relationship of actors and actresses to film rentals. Stars are associated with positive or negative residuals.

Prag and Casavant (1994) estimate film rental in a function which includes production costs and a quality index based in experts' rating and star power. They conclude that these variables are significant only when advertising costs are omitted.

Albert (1998) uses stars as film type markers for the consumers. He develops a theory of consumer film choice based on past information on similar films. The star becomes a marker of successful film types. The author justifies Hollywood attitude that it is best to produce films of the type which already was a success and that actors are significantly associated with previously successful films by the consumers. Albert uses a similar procedure to test directors and screenwriters as film type markers but the results are not as consistent as with actors.

Ravid (1998) explores information for quality signals in film features. Nowadays, stars work as free agents[18]. Their salary reflects their market value and they are expected to capture most of their added value. Their cachet acts as a signaling for the quality of the project. However, the conclusion of the analysis is that stars play no role in the financial success of a film.

De Vany and Walls (1999) identify the dynamics of box office revenue and audience as Lévy stable distribution processes, meaning that their variance is infinite and that there is no natural average to converge to. Their test for the influence of star directors and actors in their functions shows that movies with stars stochastically dominate movies without stars in terms

[18] Until the 1950s, the studio system ruled in Hollywood and stars signed long-term contracts to make successive films with just one studio (Ravid, 1998:464).

of box-office gross (ibid., 296); stars also increase the median of the returns distribution so that they make the distribution less skewed (ibid., 300). However, I mentioned before that they refuse to attribute these results to star power and they rather point to the fact that movies with stars usually enjoy advantages such as larger budgets, better screenwriters and wider releases.

Bagella and Becchetti (1999) estimate several econometric models to test the impact of ex ante[19] popularity of directors and cast of actors on box office revenue and daily admissions. They build up a quadratic human input interaction factor representing the effects of interaction between director's popularity and cast popularity. The model which includes this interaction factor is the one that better fits their data. Their results show that theatre performance for movies produced in Italy is influenced by this quadratic interaction factor between director's popularity and cast popularity.

The main concern of the present study about Spanish cinema is on director's popularity and the superstar effect as a determinant for cinema attendance. In line with what others have done, I aim to perform a multiple regression analysis of secondary data with attendance as dependent variable and several explanatory variables to build up the model function[20].

I estimate linear and non linear regression models to test the impact of directors' popularity on movie theatre attendance. Similarly to Bagella and Becchetti, one of the models includes a term for quadratic interaction between director's and cast's popularity.

Since statistical correlation does not imply causation (Aldrich, 1995) a significant correlation between attendance and star directors might be due to the influence of other variables, too. Hence, besides directors' popularity I have also explored the impact of other factors on a film's theatre performance, factors such as cast popularity and genre. More intervening variables probably have to do with cultural consumption habits of Spaniards, especially, with the

[19]In the study of Bagella and Becchetti (1999) ex ante popularity refers to popularity of director and cast prior to the release date of the movie.

[20] In the statistical sciences one of the objectives of regression analysis is 'to test hypotheses about the nature of the dependence between variables_ hypotheses suggested by the underlying economic theory' (Gujarati, 1999:117)

preference for close substitutes like American hit films, or with increasing home cinema practices (like DVD consumption or internet film downloading, both legal and illegal). These options have also been investigated.

5.2. Operationalization of stardom

The problem of measuring stardom and popularity has been approached differently by researchers. Previous studies normally use experts' opinion or hit lists as a way to make stardom operative. Most studies take directors and actors together in their stars' lists. In all cases, the proportion of directors is substantially inferior to the amount of actors in the lists. In the literature, De Vany and Walls (1999:292) give their list of stars based on Premier's magazine annual listing of the 100 most powerful people in Hollywood or on James Ulmer's list of A and A+ people in Hollywood.

Bagella and Becchetti (1999, 240) construct an index of actors' cast and director ex ante popularity (ex ante meaning before the film is on the screen) by giving the average of an independent judgment of three influential movie critics writing for Italian newspapers. Ravid (1998: 469) provides with an index that characterizes cast as 'stars', 'just actors', or 'unknowns'. He uses three sources to build up the categories in the index: actors awarded with Hollywood Academy Oscar; list of actors participating in movies with top gross profits in the prior years; and actors appearing in American references for movies (Maltin's 1994 movie and video guide plus Katz' 1994 film encyclopedia). Smith and Smith (1986) use Hollywood Academy Awards as human input quality indexes.

Prag and Casavant try two methods. First, they simply use a dummy variable to categorize films with or without a star. Second, they construct an index to categorize cast as rising star, falling star, established star and no star. They obtain similar results with both constructions. Surprisingly, though, they only refer to their 'knowledge of films and movie stars to construct this variable.'(1994:220)

Wallace, Seigerman, and Holbrook (1993:5) use a list of actors appearing in Quigley's annual poll of the top box-office revenues, as reported by Screen World (1989). Actually, that list aims to highlight the star power of top 'money-making' actors, also called 'bankable' actors. They use zero-one dummy variables for the stars appearing in films in the top hit list.

Albert (1998:257) uses no index to identify stars but instead takes for granted that actors leading the cast for the yearly twenty film ranking in his data set are all stars. His data set came from the list 'Big Rental Films of the Year in the US and Canada' appearing in the 'Yearly Anniversary' issue of the magazine Variety.

However, the sole use of experts' opinions as a measure of popularity is a risky choice because professional opinion may walk away from consumers' tastes and choices. Caves (2000:178) explains that in the market for cultural goods critics arise in a situation of symmetrical lack of information: consumers don't know about quality of the product, just like producers don't know about consumers' tastes. According to Caves, critics have the presumed advantage of neutrality and objectivity. They are supposed to provide an independent opinion about the quality of a product (in this case about the quality of a film) that wouldn't be credible from the producer, who would eventually puff the product. At the same time, they are believed to internalize prospective consumer's tastes. However, both assumptions might fail because critics' opinions are often not reliably aligned to consumer's tastes and their independence may be compromised with payola practices.

Holbrook and Addis (2008) perform a study about the dichotomy between artistic recognition and market performance, as two independent and uncorrelated aspects of motion picture success. They identify artistic excellence with industry recognition, which can be measured by evaluations made in the form of awards and ratings, both by professionals or by the general public; in contrast, the market performance of a film is measured by box office and video rentals, which the authors assume is related to the level of buzz among the audience, i.e. to the tendency of consumers to recommend a product to others. The results show that marketing strategies tend to be a positive influence over popular buzz, whereas evaluation is negatively influenced by marketing clout. In the estimation of regression models, Holbrook and Addis use three film websites[21] as a source of information for the measurement of their evaluation and buzz variables. The differentiation between both variables is that evaluation takes film rating (both from experts and from consumers) as measurement, while popular buzz is measured by the number of reviews about a film.

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21 Holbrook and Addis's measures of evaluation come from www.imdb.com, www.movies.yahoo.com, and measures of popular buzz from www.rottentomatoes.com.

The authors are aware that their study is limited to just three websites as sources of their main variables. They suggest that further research 'should examine the role of additional information sources such as those found on Internet blogs or in collections of critiques compiled by professional experts' (Holbrook and Addis, 2008:104).

In my study about demand for Spanish cinema I also use the internet as a source of information for the construction of the director's and cast popularity variables in the regression model.

Following Holbrook and Addis final advice, I use Google search engine as a compiling source of information with the assumption that it eventually includes most of information sources: from consumers blogs, ratings and comments, to professional reviews and industry awards, through varied media coverage with its bite of marketing clout.

In my analysis, the popularity of film directors is measured by their 'presence' on the internet, specifically by the results of a Google search for each director in the pages of Google Spain[22]. A Google search yields a number of results or hits, that is, a number of web pages where the target term appears. The advantage of such a method is the possibility of making the variable operational as a cardinal scale, which facilitates the statistical quantitative approach to the matter. The risk of circularity in the discourse is not evident, since the search for a director's name gathers references with or without connection to a specific film: the director is a self standing entity. The search results include all kind of comments about the person: personal or professional, real or fictitious, positive, negative or neutral, altogether creating an aura of popularity around the character.

The method of internet search is used as a comparison of popularity among film directors. The purpose of this research is to detect if differences in 'popularity' among directors translate into significant differences for attracting audience. Nevertheless, creating artificial buzz for a blockbuster may or may not work at the box office.

[22] A primary Internet search was done using a site named Web Important People. The Wip List gives a popularity rating for famous characters based on their visibility on the internet, i.e. based on the number of references about them on the internet. The search was not finally used for constructing the variable because the Spanish version of the page lacked rating for many of the film directors appearing in the data set.

From a different perspective, the method allows for a contrast between two expressions of people's behavior: Internet may reflect people's tastes and opinions with respect to directors while audience figures show their choices as consumers and their willingness to pay for a Spanish movie on the theatre.

One more consideration about the internet search method has to do with the time factor. Popularity at a certain point in time not only depends on director's recent activity but also on what he or she has done lately. Hence, I assume that the Google search is an aggregation of popularity for the previous career of the director.

5.3. Construction of the data set

The initial data set comprises a list of one hundred Spanish movies, the best seen movies between 2004 and 2008. The list is built up with twenty top movies per year (2004, 2005, 2006, 2007 and 2008). The yearly ranking of best seen movies is annually released by the Institute of Cinematography and Audiovisual Arts of the Spanish Ministry of Culture[23]. The list appears in the official 'Boletín informativo 2008: películas, recaudación, espectadores', ("Information Bulletin: Production, Distribution and Exhibition", ICAA, 2008).

The data set has been adjusted to inflation rates and to population growth rates in Spain in the observed period. All figures are constant with respect to the year 2008. That makes it a cross sectional data set.

The choice for the five year period 2004-2008 responds to two reasons having to do with the use of the internet in Spain: first, the growing use of the internet as a source for audiovisual services and entertainment; and second, internet's increasing importance as a magnifier of network effects. Ten years ago (back to 1998) piracy was not yet considered a serious threat to

23 The computerization system of box offices in the venues of the whole country transmits weekly revenue and audience figures to the Spanish Ministry of Culture.

the film industry[24]; it was impossible to find a Spanish movie to download from the internet; and the average Spanish citizen had no clear idea what Google was.

Specific information regarding the characteristics of every film comes from the online film database of the Spanish Ministry of Culture[25].

Co-productions

Co-productions with more than 40% of Spanish share are included in the list. Co-productions with less than 40% Spanish participation have been left out of the analysis; consequently, twelve movies have been left out the set, making a total of 88 entries for films in the operational data set.

Foreign directors of co-productions with more than 40% of Spanish participation are included in the set together with their films. Their popularity in Spain may also influence the performance of the movie. For example, Woody Allen is included in the set as director of the co-production film Vicky, Cristina, Barcelona, which has 50% Spanish and 50% United States' share.

Film information

The data set has been made using secondary data from the files of the official Ministry's database. I have selected the following information for each movie: year, film title and release date, number of spectators, box-office revenue, director, cast, genre and country.

The year is generally notated according to the release date. Nevertheless, in the case of movies with release date in November and December, the Ministry includes them in the information bulletin of the following year, because most of the commercial life of the movie takes place in

[24] 'Special 301 Report_Special Mention Countries', IIPA 2003, includes Spain mainly as a hotspot for music piracy; film piracy is not mentioned yet and internet piracy appears solely related to videogame market. Year 2004 already mentions film piracy in Spain. However, figures refer to the film industry as a whole, with no disaggregation for foreign and domestic products.

[25] 'Base de Datos de Películas Calificadas' ('Online film database'), Spanish Ministry of Culture <http://www.mcu.es/bbddpeliculas> , accessed 16 June 2009

the following year. For example, the movie El Cid: La leyenda by José Pozo released in November 2003 appears in the movie ranking for 2004.

The budget of the movies is not available in the Ministry's files nor was it possible to find it anywhere else as that information is not usually open to the public in Spain.

5.4. Econometrical model

In order to test how human input, specifically how the director's popularity affects demand for a movie, I estimate a regression model explaining total attendance per title using an operational data set of the 88 best seen Spanish movies[26] over the period 2004-2008. I build up the following model:

$$Spect = \bullet_0 + \bullet_1 PTick + \bullet_2 CInc + \bullet_3 DirPop + \bullet 4\ CastPop + \bullet_5 Gnr + u$$

The dependent variable is the total number of spectators per movie (Spect). Explanatory variables are divided in two groups; first, variables for a standard demand function and second, variables pertaining to demand for the cinema.

The group of standard demand variables includes ticket price (PTick) and consumer income (CInc). Other standard variables like population and price of substitutes are not in the final model. The first one, population, does not appear as a separate variable but it is included through the adjustment of number of spectators to the yearly population growth rate (like, for instance, in Fernández and Baños, 1999:61). Price of substitutes has been excluded from the final model due to the difficulty for constructing an adequate proxy for it (see section 5.5.8. Variables not used for an extended comment).

The group of non-standard demand variables aims to reflect some of the qualitative aspects that specifically matter in the demand for film products. This group comprises the following variables: popularity of the director (DirPop), cast popularity (CastPop) and genre (Gnr). A variable for piracy was initially considered for the model but lack of disaggregated data

[26] The initial data set consisting of 100 best seen movies is reduced to 88 films in the operational data set after removing 12 co-productions with low Spanish share (less than 40%). See section 5.3. Construction of the data set; Co-productions.

concerning Spanish film piracy made this variable unsuitable for the final model (see section 5.5.8. Variables not used for an extended comment).

The model completes with the necessary error term (u) to reflect unknown or ungraspable factors affecting the demand function.

5.5. Categorization of variables

5.5.1. Spectators

Figures for spectators correspond to total yearly number of spectators per film as appears on the online film database of the Spanish Ministry of Culture ('Base de Datos de Películas Calificadas', accessed 15 April 2009).

The numbers have been updated according to the growth rate of the Spanish population between 2004 and 2008 to make all figures constant and cumulative to 2008. Population growth rate information comes from the Spanish National Statistics Institute ('Tasa de crecimiento de la población', INE.)

Attendance for the 88 top films goes from the highest 4.515.491 number of spectators of the first film in the ranking El Orfanato by Juan Antonio Bayona (2007), to the lowest 133.894 visitors of El Próximo Oriente by Fernando Colomo (2006).

5.5.2. Ticket price

There are no published data about the ticket price for cinema theatres in Spain in the years 2004-2008. Thus, the average ticket price variable is constructed by dividing total yearly box office revenue-- in constant figures-- by the total yearly number of attendees. This is done, for instance, by Fernández and Baños (1999:59) and Werck (2007:32). The procedure, though, implies certain circularity since number of attendees, i.e. number of spectators, is used already in the model.

The average ticket price is constructed per every year in the data set, so that there is an average ticket price for year 2008, 2007, 2006, 2005 and 2004. Total yearly box office revenue used in the operation is made constant by using inflation rates in Spain from 2004-2008, with data from the Spanish National Statistics Institute online database ('Tasa de inflación', INE.)

Inflation rate in Spain

Year	Inflation	Cumulative 2008=1
2008	4.1%	1,0000
2007	2.8%	0,9720
2006	3.5%	0,9380
2005	3.4%	0,9061
2004	3.0%	0,8789

Table 5.1. Inflation rate in Spain 2004-2008. Figures from 'Tasa de inflación', INE

Average ticket price in constant figures

Year	Average Ticket Price	Average Ticket Price in constant figures
2008	5,77 €	5,77 €
2007	5,71 €	5,87 €
2006	5,42 €	5,78 €
2005	5,35 €	5,91 €
2004	5,15 €	5,86 €

Table 5.2. Average cinema ticket price in Spain 2004-2008.

5.5.3. Consumer income

Consumer income for Spain in the years 2004-2008 corresponds to purchasing-power-parity (PPP) per capita based on gross domestic product (GDP) in constant figures. Data are obtained from The International Monetary Fund, World Economic Outlook Database.

Consumer income in Spain 2004-2008	
Year	PPP per capita GDP for SPAIN, constant prices
2008	15.335,91 €
2007	15.411,02 €
2006	15.130,91 €
2005	14.797,69 €
2004	14.517,67 €

Table 5.3. Consumer income for Spain between 2004-2008. Figures from The International Monetary Fund, World Economic Outlook Database

5.5.4. Director's Popularity

Popularity on the Internet

The Google search was done during a working day (21/04/2009) using Google as search engine and limiting the search to pages of Spain only, thus excluding other pages in Spanish language which belong to different countries. The search included the director's full name (as appears in the files of the Spanish Ministry of Culture film database) within inverted commas plus the word cine (Spanish word for cinema). For example, the search for the director Alejandro Amenábar is: ["Alejandro Amenábar" cine].

Number of hits for directors in the 88 top films goes from the highest 478.000 results of the first one in the ranking, Ángeles González-Sinde (president of the Spanish Academy for the Cinematographic Arts and Sciences), to the lowest 107 results of the last director in the ranking Daniel Monzón Jerez.

I am aware of the limitations of a Google search since some invalid references may get included in the results. Nevertheless, it still works as a comparison between the higher or lower number of references for each director.

Google advance search option only allows retrieving the search back in time for twelve months. In April 2009 there was a Google archive of references only back to April 2008. Thus, it was not possible to delimit exactly the number of references for the five year period.

As mentioned before (see section 5. Research method), I assume that the Google search of 2008 is an aggregation of popularity for what the director has done in the five year period (2004-2008) of the data set.

'Opera prima' and novel directors

There are several 'opera prima's, i.e. the first film of a certain director, in the data set. Since levels of popularity before and after an opera prima are different, I make a distinction between opera prima by an unknown novel director and opera prima by novel directors who were popular characters before the film was released and for other reasons than film directing.

There is the case of an 'opera prima' by a previously popular character. For instance, the director of the movie El camino de los ingleses (2006) is Antonio Banderas, a character that enjoyed previous popularity as an actor. Another example is director Ángeles González-Sinde, who was the president of the Spanish Academy of Cinematographic Arts and Sciences by 2008. Apart from her civil service, she is a film director and script writer. A film of hers (Una palabra tuya, 2008) appears in the 88 top list. For directors like the ones just mentioned, who are popular also due to reasons other than directing, the popularity rating has not been modified as I assume that characters are popular due to all facets and deeds that accompany them.

'Opera prima' by novel directors are included in the set because, even though the director's popularity at the time of the release may not be significant, the popularity of the cast may be influential for attendance. The data have been modified in an effort to avoid this timing trap. Thus, popularity of novel directors equals the number of search hits for the director with the least popularity in the ranking (Daniel Monzón Jerez with 107 results). For subsequent films by the same director, which won't be opera prima any more, the popularity rating corresponds to the Google search of April 2008, just like for any other director.

5.5.5. Cast Popularity

In order to include cast popularity in the model, the reference for the Google search is the name of the first actor appearing in the Ministry's film file[27]. Actor's popularity, in a similar way to director's popularity, is measured by the number of hits found on a Google search for pages in Spain and in Spanish.

The Google search was done during a working day (23/04/2009) using Google as search engine and limiting the search to web pages of Spain only (excluding other pages in Spanish language). The search included the actor's full name (as appears on the files of the Spanish Ministry of Culture film database) with inverted commas plus the word cine, which is the Spanish word for cinema. For example, the search for the actor Javier Bardem is: ["Javier Bardem" cine].

Results for actors in the 88 top films goes from the highest 490.000 hits of the first one in the ranking, the actress Penélope Cruz, to the lowest 8 results of the last actor in the ranking Alberto Yoel García Osorio. The ranking for actors reaches higher top figures than the ranking for directors. Penélope Cruz, the top actress, surpasses the top director in 12.000 more references.

In case of animation movies, wherein there is no human cast, the popularity of cast only has some significance if well-known flesh and blood actors give their voice to animation characters. However, the trigger of an actor's voice is not comparable to the performance of the actor himself. In order to avoid this, the popularity of cast for animation films equals the number of search hits of the less popular actor in the set.

[27] A different calculation for the popularity of the cast may include two or three actors for the construction of the variable. Further development of the model with no time restrictions would allow for a Google search for all them and the construction of an index for cast's popularity.

5.5.6. Genre

The following genres are present on the top 100 film list.

Categorization of genre		
Genre	Categorization	Genres included in the category
ACTION	Default Gnr	ACTION; ADVENTURE
ANIMATION	GnrAni	ANIMATION; KIDS (All animation movies in the data set are kids' movies.)
COMEDY	GnrCom	COMEDY; DRAMATIC COMEDY.
DRAMA	GnrDra	DRAMA; FICTION; BIOGRAPHY; EROTIC; MUSICAL
THRILLER	GnrThr	THRILLER; SUSPENSE; FILM NOIR

Four dummy variables are used to stand for the different genres in the final model. Category 'Action' was used as the default variable.

5.5.7. Error term

Error term u represents all factors which affect the dependent variable but are not included in the model.

5.5.8. Variables not used

Several variables which might be influential in a demand function for the cinema are not included in the model. Those variables are box office revenue, budget, subsidy, price of substitutes, piracy, running time and awards and experts' opinion. The variables are not used for the reasons following in this section.

5.5.8.1. Box office revenue

The demand function could have been modeled in two different ways, with either box-office revenue or attendance figures for the construction of the dependent variable. The model chosen for this analysis uses attendance figures. The dependent variable is called spectators (Spect) because it refers to total yearly number of spectators, with no disaggregation of attendance figures. The choice is made because the study focuses on consumer's preferences and I assume that theatre attendance is an adequate reflection for it. Box-office revenue is subject to factors out of the consumers' reach, like slight variation in prices from venue to venue or price discrimination via discounts and offers.

Nevertheless, box-office numbers are indirectly used for the construction of the average ticket price. The average ticket price variable is constructed by dividing total yearly box office revenue, in constant figures, by the total yearly number of attendees. This is done, for instance, by Fernández and Baños (1999:59) and Werck (2007:32)

5.5.8.2. Budget

Even though budget for film production is known to be an influential variable in the demand function (see, for instance, De Vany and Walls, 1999), this variable is not taken into account in the present analysis because there is no published information about it for Spanish film productions. The only hint about the costs of producing a film in Spain is the construction of an average production cost for a film, calculated with a random sampling of long feature films in the years 2006, 2007 and 2008 (Information Bulletin 2008, ICAA 2008:38).

5.5.8.3. Subsidy

There is open information about the subsidies given to film production in Spain. However, it should be necessary to have data about the whole budget of a movie in order to measure the proportional impact of subsidy. Since this study does not operate with film budgets, subsidy is not used either[28].

[28] See Bagella and Becchetti (1999) for an analysis of the impact of subsidy on theatre admissions.

5.5.8.4. Price of Substitutes

Trying to account for the price of substitutes, I first identify which products are adequate substitutes for cinema attendance and which are their prices. I examine the following options: leisure activities, American hits, DVD renting and buying, legal and illegal internet downloading.

In principle, any leisure activity could play a substituting role for attending a cinema hall. Previous work by Fernández and Baños about demand for Spanish cinema (1997) included in their model a generic leisure price derived from average earning per working hour. However, it yielded no significant results and it was excluded from the final function model. I follow them and exclude the identification of any leisure activity as substitute for cinema attendance.

American hits are clear substitutes for Spanish films. Nevertheless, the price is exactly the same for both goods in Spanish venues, where price discrimination only works on a basis of target groups discounts, such as student discount or pensioner discount. Price discrimination is not related to type or duration of films. Thus, the price of Spanish and American movies being the same, the price of American hits adds little significance to the variable's weigh. It is consequently left out of the model.

DVD is a close substitute for cinema attendance and many movies perform better in DVD distribution circuits than in theatres. Due to the difficulty of finding prices for DVD renting and buying in years 2004-2008, this factor is excluded from the final model.

Fernández and Baños (1997:60) found the same obstacle for their analysis in 1997, when there were no published references for the price of DVDs either. In the case of television and video, which lacked officially published data about price, they tested the significance of three alternative variables. First, they used the price of electrical appliances as a proxy of the price for TV and video sets. Second, they included the number of television sets per 1,000 inhabitants. Third, they used a binary variable to measure availability of TV programs (zero before the appearance of private channels, one for those years with private channels broadcasting) The results were not significant in the first two cases, price of electrical appliances and number of TV sets per inhabitant, but significant and negative in the case of TV

programming. Further on in their analysis, the test of the negative influence of television and video was enabled by means of a shared vector which worked as a proxy for both alternatives; this variable though, was not constructed on any observable data. All in all, Fernández and Baños make an interesting effort in testing the operating capacity of alternatives for substitute products for cinema.

Finally, in 2008 internet downloading stands as a close substitute for cinema attending. Legal downloading for renting or buying films has been available in Spain for several years ago. It began with foreign global servers, like Megavideo. However, local Spanish companies serving both foreign and Spanish titles only started operating recently. Pioneers are Pixbox, which belongs to Terra and Universal pictures, operating since 2006; and Filmtech, which started serving in 2007. Hence, it is not possible to track data about legal downloading of Spanish films back to the year 2004. Illegal film downloading from the Internet is a form of film piracy. It deserves a close look as substituting product for cinema attendance.

5.5.8.5. Piracy

In the literature, De Vany and Walls (2007) investigate the effects of movie piracy on box office revenue of a film during its early running weeks. They estimate a statistical model to test the relation between changes in revenues with the number of Internet sites with a pirate copy available per each week of a movie's running time. These authors make the variable about piracy operational by counting the sites where a movie is available for downloading per every week in the running time. Their data about pirate suppliers were collected for seven weeks of the running time of one major movie, one week before and six weeks after the release date. The method used for counting pirate sites was to send out data crawlers over the Internet to detect sites that had a file of the movie available for downloading. De Vany and Walls prefer site availability of a movie instead of number of downloads, which would complicate the measurement due to the different mechanisms for downloading in every site. The best analysis to match the pattern in the data was a quartile regression of the change in weekly revenue with a quadratic time trend and contemporaneous piracy.

There are several handicaps to use this method in my analysis. First of all, my data are cross sectional; time dimension is not applied due to lack of disaggregated information about revenue during the running weeks of a movie. Secondly, a search of pirate site availability

makes most sense when it is done simultaneously to the release pattern of a movie; an ex post construction, that is, searching for pirate availability of a film long time after the release date loses reliability.

5.5.8.6. Running time

Strategies having to do with patterns of release and running time for a movie are influential for the economic turn out of the product. Some studies include a time factor in their analysis in the form of running weeks (like De Vany and Walls, 1999) and show its impact on changes in the weekly revenue performances.

Other authors point at time in the sense that, for a movie, short-run evaluations and success may be due to heavy marketing (Ginsburgh, 271).Those studies are longitudinal and operate with panel data.

The present study operates with cross sectional data where all figures are made constant; besides, time factor is not reflected in the final model due to absence of published information about running time for Spanish movies in the local exhibition market.

5.5.8.7. Awards and expert's opinion

This analysis aims to test whether popularity levels on the internet have an impact on the preferences of consumers who attend film theatres. My interest is on peoples' choices as consumers, rather than on people's opinion or on expert's opinion (either in the form of awards, reviews or ratings). For a study about the differentiated impact of evaluation versus buzz in the success of a film, see Holbrook and Addis (2008).

6. Data analysis and results

6.1. Descriptive statistics

Descriptive statistics for the main variables in the model appear in Table 6.1.

Descriptive Statistics

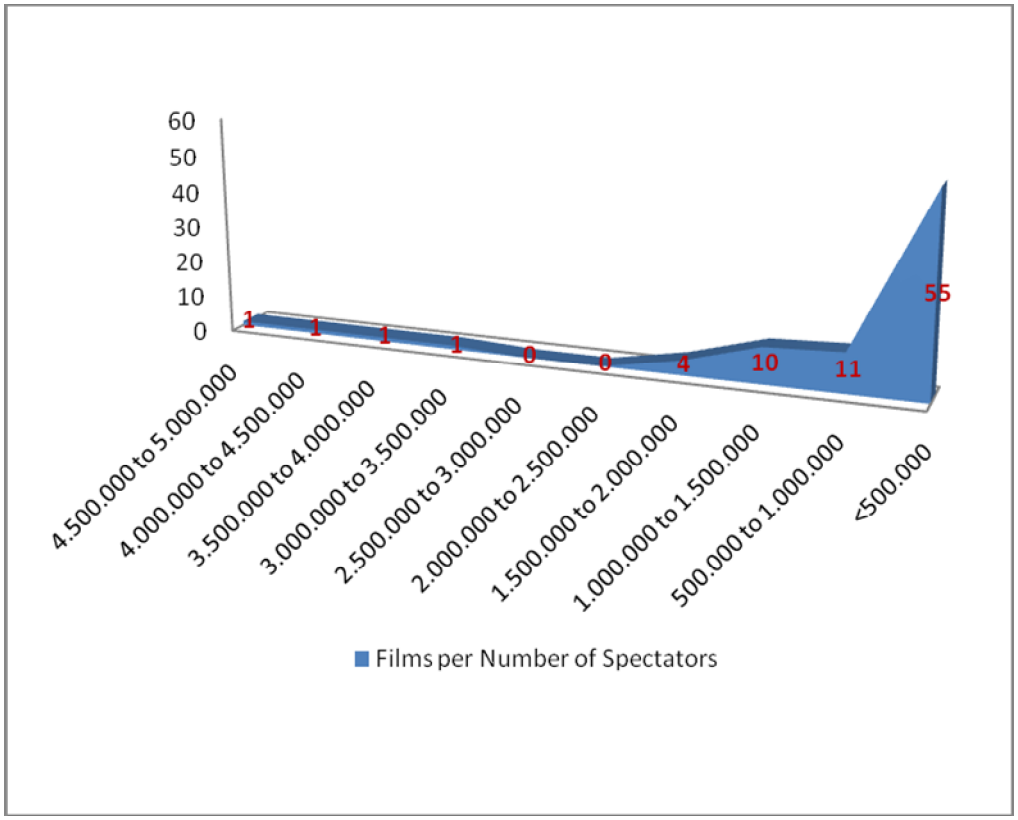
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Spectators	88	133894	4515491	687590,16	850585,495	7,235E11
Director's Popularity	88	107	478000	38234,98	79736,715	6,358E9
Cast Popularity	88	8	490000	49044,98	87056,085	7,579E9
Valid N (listwise)	88					

Table 6.1. Descriptive statistics for the variables 'Spectators', 'Director's Popularity', and 'Cast Popularity'

According to results in previous research (De Vany and Walls, 1999) the probability distribution of outcomes for spectators shows infinite variance. Success is linked to extreme events that drive the average calculations. This situation makes it difficult to give any accurate prediction of outcomes.

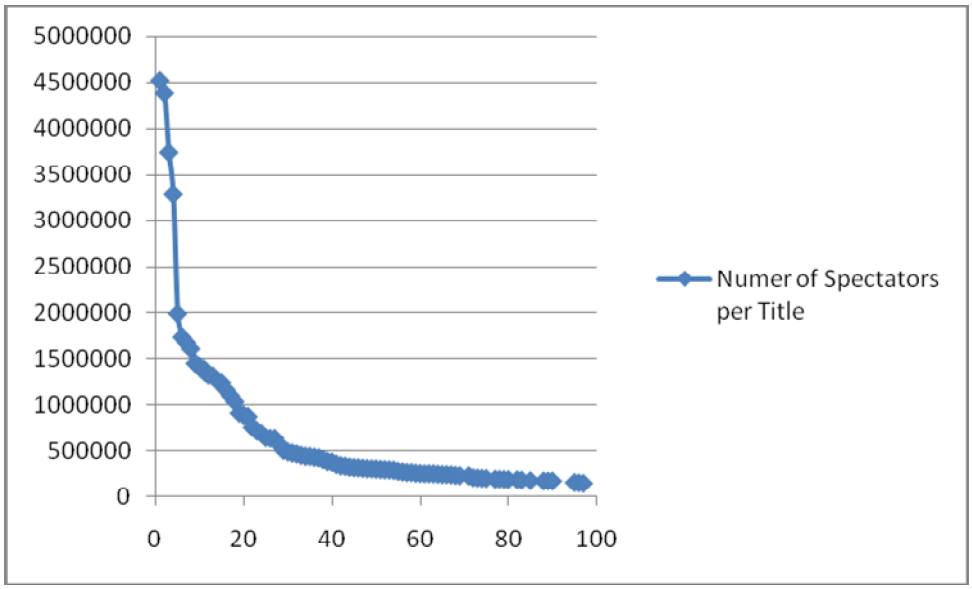
6.2. Distribution analysis of spectators ranking

Also in line with previous research about film theatre attendance (Bagella and Becchetti, 1999) the distribution of the dependent variable 'Spectators' is highly skewed. Graph 6.1. shows the probability distribution of films according to the number of spectators. Extreme values are predominant ones: almost 60% of the movies attract less than five hundred thousand spectators and only 4% titles call for more than three million spectators. The extremely high probability of low theatre performance for a Spanish movie confirms the theory that producing a film is a risky business also in Spain.



Graph 6.1. Area diagram of films per number of spectators.

In Graph 6.2. below the scatter plot for the number of spectators per title shows a highly skewed shape with the probability mass in the lower tail.

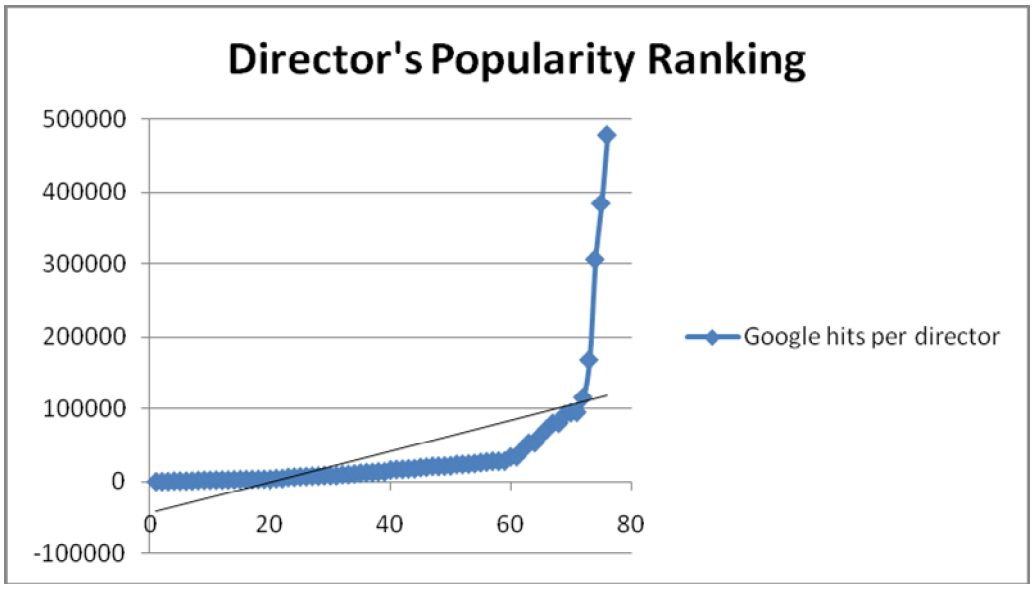


Graph 6.2. Scatter plot of the number of spectators per title

6.3. Distribution analysis of director's popularity

As mentioned before (in categorization of 5.5.4. Director's popularity) The popularity ranking in the data set ranges from the highest 478.000 number of Google search results for the first director in the ranking Ángeles González Sinde, to the lowest 107 results of the last director in the ranking Daniel Monzón Jerez. Around 60% of directors achieve low popularity results, with Google results below twenty thousand; only a bunch of them score above the hundred thousand hits.

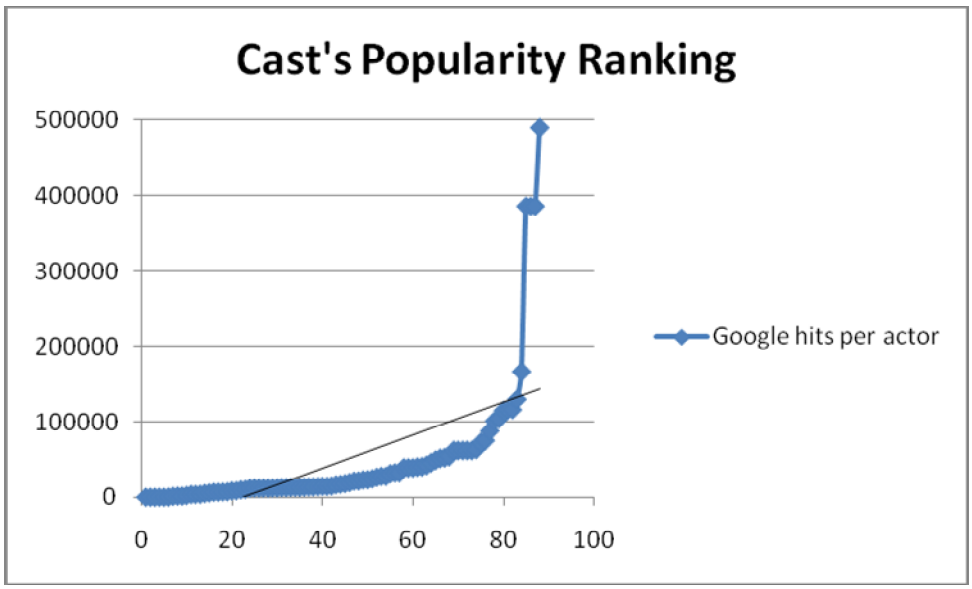
A scatter plot of director's popularity in Graph 6.3. below shows again a highly skewed curve with the mass in the lower tail (similarly to the distribution of number of spectators per film.)



Graph 6.3. Scatter plot of the distribution for director's popularity

6.4. Distribution analysis of cast popularity

The distribution of cast's popularity is even more skewed than that of director's popularity (see Graph 6.4.). This implies that actors achieve larger popularity levels than directors. It is also an indicator of non linear relationship between the dependent variable 'Spectators' and the independent variable 'Cast Popularity'.



Graph 6.4. Scatter plot of the distribution for cast's popularity

6.5. Correlation analyses

Pearson correlation coefficient (r) is used to describe how well a correlation fits the data. It ranges in value from -1 to +1; the closer to absolute values, the more significant is the negative or positive linear slope. The interpretation of a correlation coefficient depends on the context and purposes. In the case of the social sciences, the context is usually complex with multiple complicating factors. In such contexts, Cohen (2003) interpreted a correlation of 0.1 as small, 0.3 as medium and 0.5 as large, either of positive or negative sign. Additionally, correlation coefficients close to 0 point in the direction of non linear relationship between the two variables.

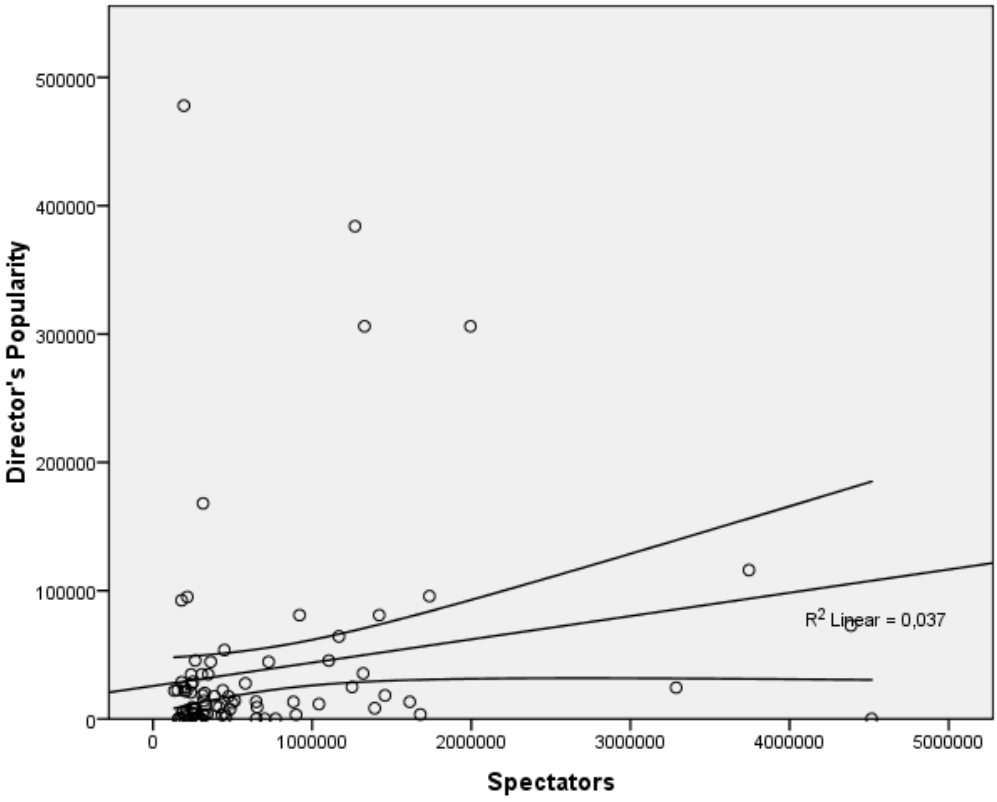
6.5.1. Correlation between director's popularity and number of spectators

The correlation between director's popularity and number of spectators gives a Pearson correlation coefficient (r) of 0.19 which is a small positive correlation (see Table 6.2.). This low value points to a relationship of non linear type between director's popularity and number of spectators. This finding about the non linear relation between popularity and attendance is consistent with previous studies (De Vany and Walls, 1999).

Correlations

		Spectators	Director's Popularity
Spectators	Pearson Correlation	1	,194
	Sig. (2-tailed)		,071
	N	88	88
Director's Popularity	Pearson Correlation	,194	1
	Sig. (2-tailed)	,071	
	N	88	88

Table 6.2. Correlation between director's popularity and spectators' numbers



Graph 6.5. Scatter plot of the correlation between director's popularity and number of spectators.

6.5.2. Correlation between cast popularity and number of spectators

The correlation between cast popularity and number of spectators gives a Pearson correlation coefficient (r) of 0.42 which tells of a medium positive correlation[29] (see Table 6.3.). This finding is consistent with previous studies about the impact of stardom over film theatre performance, either in the form of revenues or spectators (Bagella and Becchetti, 1999).

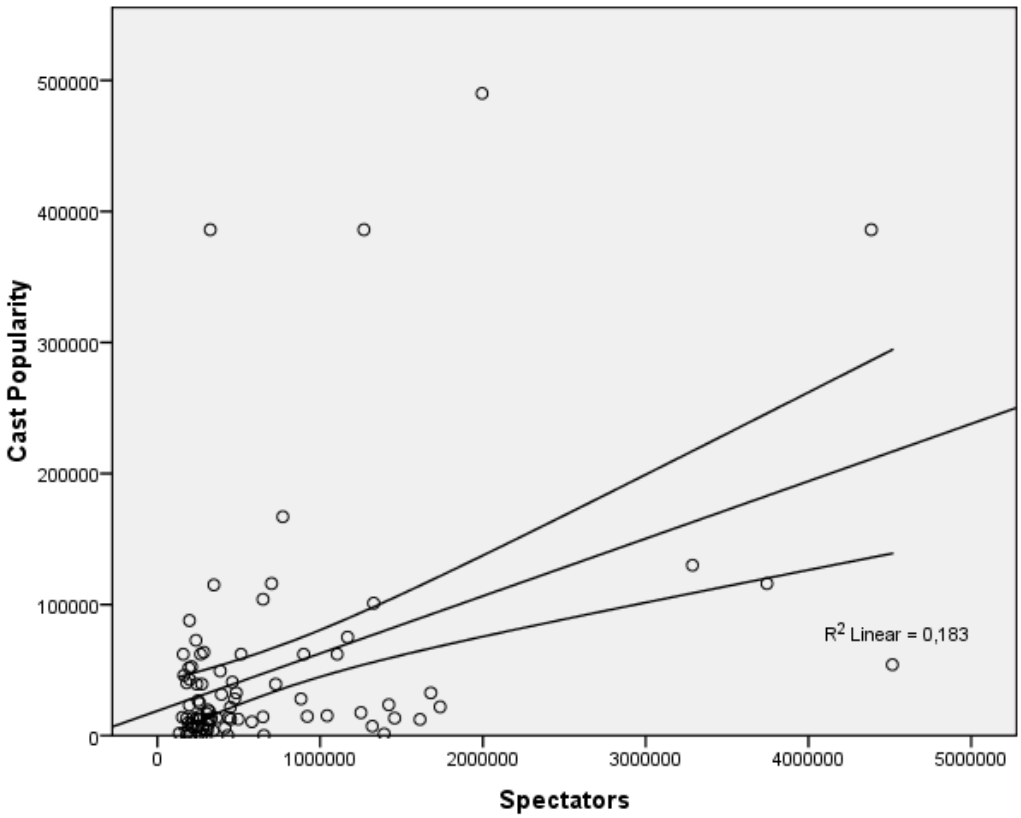
Correlations

		Spectators	Cast Popularity
Spectators	Pearson Correlation	1	,428**
	Sig. (2-tailed)		,000
	N	88	88
Cast Popularity	Pearson Correlation	,428**	1
	Sig. (2-tailed)	,000	
	N	88	88

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6.3. Correlation between cast popularity and spectators' numbers

[29] Cohen (2003) interpreted a correlation of 0.1 as small, 0.3 as medium and 0.5 as large, either of positive or negative sign.



Graph 6.6. Scatter plot of the correlation between cast's popularity and number of spectators.

I bear in mind that correlation does not imply causation. In the case of a cross sectional study, there is no time factor to suggest the direction of cause and effect between the dependent and independent variables[30]. That is why besides this initial test with correlation analyses I also test the behavior of variables in multivariate regression analyses.

6.5.3. Correlation between genre and number of spectators

The genres thriller (Table 6.4.) and comedy (Table 6.5.) have significant impact in spectators' numbers (positive and negative, respectively). Thrillers yield the highest positive impact in attendance in a simple correlation analysis between genre and number of spectators. The other genres (drama, action, animation) have no significant impact on attendance.

[30] The support for direction of causality is stronger in longitudinal studies which have the aid of time factor; cross sectional studies lack this aid.

Correlations

		Spectators	Genre Thriller
Spectators	Pearson Correlation	1	,799**
	Sig. (2-tailed)		,000
	N	88	88
Genre Thriller	Pearson Correlation	,799**	1
	Sig. (2-tailed)	,000	
	N	88	88

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6.4. Correlation between genre thriller and spectators' numbers

Correlations

		Spectators	Genre Comedy
Spectators	Pearson Correlation	1	-,412**
	Sig. (2-tailed)		,000
	N	88	88
Genre Comedy	Pearson Correlation	-,412**	1
	Sig. (2-tailed)	,000	
	N	88	88

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6.5. Correlation between genre comedy and spectators' numbers

6.6. Multivariate regression analyses

The adequacy of multivariate statistical analysis for a demand function comes from the idea that such a technique allows measuring the impact of one variable, while controlling for all other influences. This method is developed by means of logistic regression of variables.

Expected problems in the application of multivariate analysis are the proper selection of variables and the adaptation and suitability of secondary data available. As far as results are concerned, logistic regression estimates the probability of an event occurring. A positive coefficient indicates that the variable increases the likelihood of the event, while a negative coefficient decreases the likelihood. The greater is the absolute value of a coefficient, the stronger the impact of the variable (Gray, 2003:362).

The restrictions imposed by multivariate statistical analyses come from the focus on one variable. In the best case, the procedure would only narrow the results concerning the variable because it is not possible to yield totally reliable conclusions; in the worst case, focusing on one variable could deviate from other significant variables and then yield spurious results. Spurious results are obtained when there is an apparent statistical association between variables, even though the relation is caused by other factors.

Using secondary data can also be very challenging for the researcher, since it requires adapting data from previous studies. Such data may eventually not fit in the estimation model, which risks an adaptation or manipulation of real information. Data may also be insufficient for the adequate construction of variables.

All things considered, the multivariate regression analyses performed with the data set in the present research only aim to be a preliminary approach to the matter of demand for Spanish cinema.

Several regression analyses have been tested for the following statistical models:

(1) Linear regression

$$Spect = \bullet_0 + \bullet_1 PTick + \bullet_2 CInc + \bullet_3 DirPop + \bullet_4 CastPop + \bullet_5 Gnr + u$$

(2) Non Linear regression with quadratic director's popularity

$$Spect = \bullet_0 + \bullet_1 PTick + \bullet_2 CInc + \bullet_3 DirPop^2 + \bullet_4 CastPop + \bullet_5 Gnr + u$$

(3) Non Linear regression with an interaction term 'CombiDirCastPop' representing the interaction between director's popularity and cast popularity

$$Spect = \bullet_0 + \bullet_1 PTick + \bullet_2 CInc + \bullet_3 DirPop + \bullet_4 CastPop + \bullet_5 CombiDirCastPop + \bullet_6 Gnr + u$$

The quadratic models are inspired in the models used by Bagella and Becchetti (1999) for their analysis of Italian cinema.

The results of the linear regression analysis (1) yield a R square value of 0,743 which means that the model fits well with the data set[31] (see Table 6.6.). The coefficients for the linear regression point at cast popularity as the variable with the higher positive significant impact in the dependent variable, i.e. attendance. The impact of director's popularity is not significant and it even yields minimum negative results (see Table 6.6.).

Model (1) Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,862[a]	,743	,717	452678,117

a. Predictors: (Constant), Genre Animation, Director's popularity, Ticket Price, Genre Thriller, Consumer Income, Genre Comedy, Cast Popularity, Genre Drama

b. Dependent Variable: Spectators

[31] The R square value in the linear regression is the proportion of variation explained by model (Noru•is, 2000:449)

Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	8907859,767	4903561,799		1,817	,073
	Ticket Price	-1241125,742	621304,871	-,124	-1,998	,049
	Consumer Income	-107,498	157,676	-,043	-,682	,497
	Director's Popularity	-,326	,697	-,031	-,468	,641
	Cast Popularity	2,019	,663	,207	3,046	,003
	Genre Thriller	2201527,574	301089,546	,861	7,312	,000
	Genre Drama	563222,815	279473,972	,322	2,015	,047
	Genre Comedy	154482,247	275421,069	,089	,561	,576
	Genre Animation	93054,324	321105,392	,028	,290	,773

a. Dependent Variable: Spectators

Table 6.6. Model summary of the linear regression model (1)

The second model (2) non linear regression with quadratic director's popularity adjusts to data set at R squared 0,744 (see Table 6.7.) close to the results in linear regression (1). Despite the quadratic specification for director's popularity, this variable does not yield significant results and remains negative. In contrast, cast popularity is again showing significant positive results.

Parameter Estimates Model (2)

Parameter			95% Confidence Interval	
	Estimate	Std. Error	Lower Bound	Upper Bound
CONSTANT	9084658,522	280405,912	8526413,234	9642903,810
TICKPRICE	-1277926,442	276588,757	-1828572,358	-727280,525
CONSINCOME	-105,572	158,297	-420,717	209,574
DIRPOP	-1,352E-6	322243,038	-641536,607	641536,607
CASTPOPULARITY	2,090	4926968,576	-9808838,858	9808843,038
GENTHRILLER	2195326,171	,650	2195324,877	2195327,465
GENDRAMA	567107,222	,000	567107,222	567107,222
GENCOMEDY	161077,397	,000	161077,397	161077,397
GENANIMATION	94350,612	301955,347	-506796,305	695497,528

ANOVA[a]

Source	Sum of Squares	df	Mean Squares
Regression	8,844E13	10	8,844E12
Residual	1,610E13	78	2,065E11
Uncorrected Total	1,045E14	88	
Corrected Total	6,294E13	87	

Dependent variable: Spectators

a. R squared = 1 - (Residual Sum of Squares) / (Corrected Sum of Squares) = ,744.

Table 6.7. Model summary of the non linear regression model (2) with quadratic specification for director's popularity

The third model (3) non linear regression with an interaction term for director's and cast popularity adjusts to data set at R squared ,760 (see Table 6.8.), better than the previous models (1) and (2). Thanks to the interaction specification, director's popularity yields positive results. One more time, cast popularity presents the strongest positive impact on attendance, which is reinforced by the interaction term.

Parameter Estimates Model (3)

Parameter			95% Confidence Interval	
	Estimate	Std. Error	Lower Bound	Upper Bound
CONSTANT	9336183,260	4782601,915	-185245,743	1,886E7
TICKPRICE	-1344708,441	608218,028	-2555577,518	-133839,363
CONSINCOME	-100,029	153,310	-405,246	205,187
DIRPOP	1,021	,868	-,708	2,749
CASTPOPULARITY	3,421	,884	1,662	5,181
GENTHRILLER	2187131,075	292818,209	1604174,802	2770087,347
GENDRAMA	564605,906	271765,781	23561,799	1105650,014
GENCOMEDY	140147,367	267851,704	-393104,413	673399,148
GENANIMATION	91529,139	312439,927	-530490,974	713549,252
COMBIDIRCAST	-9,902E-6	,000	-1,816E-5	-1,641E-6

ANOVA[a]

Source	Sum of Squares	df	Mean Squares
Regression	8,944E13	10	8,944E12
Residual	1,511E13	78	1,937E11
Uncorrected Total	1,045E14	88	
Corrected Total	6,294E13	87	

Dependent variable: Spectators

a. R squared = 1 - (Residual Sum of Squares) / (Corrected Sum of Squares) = ,760.

Table 6.8. Model summary of the non linear regression model (3) with the interaction term between director's and cast popularity

Despite the high values of R square for all the estimated models, the distribution of residuals shows that the model suffers some limitations. These probably have to do with the lack of information about some independent variables, like running time and price of substitutes, which may be influential in a demand function for the cinema.

Summing up the results of the data analyses the linear bivariate correlations point at cast popularity and genre thriller as positively significant parameters. Surprisingly, comedy shows a negative significant correlation with spectators' numbers. Director's popularity and the rest of genres (action, drama and animation) yield no significant correlations[32].

The best fitting statistical model is (3) the non linear regression with an interaction term representing the synergic combination of director's and cast popularity. The estimated parameters in this model show a positive significant impact of cast popularity in attendance figures. Director's popularity, though, has a minimum impact and only of positive sign when it is combined with cast popularity.

The results about the impact of stardom in attendance confirm the theory of superstars with regard to actors. They are the ones to make a difference in success and in gains. Star actors earn fabulous amounts of money and attract more consumers than average performers. Hollywood analyses mark some directors as having star power (for instance, Steven Spielberg or Oliver Stone); unfortunately, this study of Spanish cinema between 2004 and 2008 is not able to account for 'bankable' Spanish star directors.

[32] The standard variables consumer income and ticket price are out of the scope of this study. See Fernández and Baños (1999) for an analysis of such variables in the Spanish cinema.

7. Conclusion and final remarks

Films are complex products. The economic theory around the movie industry explains that demand for the cinema is extremely uncertain and the movie industry is a risky terrain. Every movie is a combination of unique factors and rational consumers will choose the optimal combination. An adequate study of demand should include all possible influencing variables, both related to standard household consumption as well as to quality factors pertaining cinema production.

Uncertainty also applies to the Spanish film industry. There are multiple factors affecting movie theatre performance in Spain. Along with the worldwide tendency of decline in cinema attendance, the performance of Spanish films in the theatre exhibition market is gradually deteriorating. The year 2008 showed a worrying dropped in the number of spectators with respect to the previous year. Comments in the press relate the low performance of Spanish movies to the absence of works by star directors and the lack of quality in the average Spanish films. These comments contrast with the prestige that Spanish film professionals and their products enjoy inside and outside the country.

A close analysis of the current context for the Spanish motion picture industry gives different clues about what is going on. The influence of technology –related factors, such as copying devices and the internet as a source of substituting products, is taking the exhibition sector to an eventual relocation.

Studies about the effects of film piracy on the dynamics of box office revenue during the course of the film's theatre run conclude that a pirated movie plays off faster on big screens and loses revenues more rapidly.

Film piracy in Spain associates with home cinema practices and the increasing use of the internet. The International Intellectual Property Alliance recommended in 2008 that Spain be placed on the Watch List of countries that overlook the protection for intellectual property rights. However, recent surveys about cultural consumption habits among Spaniards reveal that from among the audience that stays at home to watch a movie on the computer, very few choose to watch a Spanish title.

Studies about movie piracy in Spain point that the impact of film piracy is not so strong on the production stage, but it mainly goes against distributors and exhibitors. Thus, a heyday atmosphere among producers, enhanced by expert's praise and government subsidy, has a pessimistic reverse for the distribution and exhibition sectors, which suffer the combined effects of demand uncertainty and piracy.

In the turmoil of this process, star directors are but a small piece and the quality of their work is not easily measured. In addition to that, demand uncertainty in the cinema industry is subject to network effects and shifts in information cascades, which are reinforced by the increasing use of the internet.

In spite of all handicaps, previous studies about demand for the cinema try to identify the determinants of success for movies. Standard demand studies about cinema attendance in Spain (Fernández and Baños, 1999) show that cinema is a luxury good and that demand for the cinema is elastic with respect to price. They also show the negative influence of substituting products on attendance. However, this study lacks an analysis of the influence of quality factors in film theatre attendance.

Quality factors in the performing arts are strongly related to human inputs. The role of stars and their impact on demand took Rosen (1981) to formulate an economic theory of stardom.

The theory states that small differences in talent take to large differences in success and in gains. Willingness to pay for the star's performance also rises so that stars may charge higher prices for their performance and they will attract more consumers.

However, some cinema researchers like De Vany and Walls (1999) reject stardom as a truly significant determinant for box-office and audience performance. Instead, they mention the 'nobody knows principle' about demand for the cinema based on the impossibility to make an accurate prediction of what the revenues for a film will before it is shown on screens. These American authors list a number of factors that may influence the movie performance such as budgeting, marketing, screen booking, star directors and actors, and running time. Nevertheless, none of these factors by themselves can predict a result and the conclusion is that "The real star is the movie" (1999:285)

Back to the context of Spanish cinema, Rosen's theory of stardom could predict that the star system has enough power in Spain to attract consumers to the screens where a movie by a star director or by star actors is shown. Since the motivation of this analysis is to confront reality with the press impulsive blame on directors for decrease in attendance, the main hypothesis refers to star directors. The hypothesis is that popularity of star film directors does influence theatre attendance in the domestic market for Spanish movies. Popularity is measured by levels of presence on the internet, i.e. number of references for a director on the internet. There are two advantages of using such proxy for popularity: first, the translation of popularity into a cardinal scale, which facilitates the statistical quantitative approach to the matter; second, the use of Google search copes with a wide range of references, while other studies using similar methods only focus on ratings.

The hypothesis is tested with a model of demand function which combines standard demand variables for household consumption together with quality factors having to do with cinema consumption. The analysis is carried on over a data set of the hundred best seen movies in Spain between 2004 and 2008. It cares not only for the influence of director's popularity on cinema attendance but also for the influence of cast popularity, genre and the presence of powerful substituting products.

According to results in previous research the descriptive statistics of the demand variables show that the probability distribution of outcomes for spectators has infinite variance. Success is linked to extreme events and that makes it difficult to give any accurate prediction of outcomes. Besides the extremely high probability of low theatre performance for a Spanish movie confirms the theory that producing a film is a risky business also in Spain.

Nevertheless, simple correlation analyses show a positive connection between attendance and cast popularity, as well as between attendance and genre thriller. The popularity of the director, though, yields no significant correlation.

The analysis continues with estimations of multivariate regression models with attendance as dependent variable. The results show that the best fitting statistical model is (3) the non linear regression with an interaction term representing the synergic combination of director's and cast popularity. The only variable with a positive significant impact on attendance is cast popularity. Director's popularity, though, has a minimum impact and only of positive sign when it is combined with cast popularity.

The results reject the hypothesis that star directors are significant determinants for theatre attendance in Spain. The significant results for the impact of cast popularity take to the idea that theory of stardom in Spanish cinema does not apply significantly to film directors but it does significantly apply to acting stars.

Despite the statistical adequacy of the estimated model, the distribution of residuals shows that the model suffers some limitations. Independent variables which might be influential in a demand function for the cinema, like running time and price of substitutes, are not included in the model due to lack of data.

Discussion can also follow about the choice of internet and Google search as a proxy for popularity. The risk of circularity and time limitations are associated to this method.
To sum up, this analysis is a preliminary approach to the study of quality related determinants for cinema demand in Spain.

Continuing research should complete the gap concerning the impact of emerging substituting products, mainly film downloading (legal and illegal). The threat of piracy gives way by itself to further research path exploring its influence both in the outcome and in the organization of the industry. Another path to explore is whether the theatre exhibition window suffers the impact of illegal downloading to a higher or lower extent than later exhibition windows, such as pay-per-view or home video retailing.

Further research about the Spanish film theatre exhibition market could be done by contrasting expressions of people's tastes, in the form of experts' opinion and popularity rankings, versus consumers' choices shown in revenue figures and attendance rates.

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9. List of abbreviations

BOE, Boletín Oficial del Estado (Spanish Official State Bulletin)

DVD, Digital Versatile Disc

EU, European Union

Eurostat, European Statistical Office

FAP, Federación para la Protección de la Propiedad Intelectual (Spanish Federation for the Protection of Intellectual Property)

FAPAE, Federación de Asociaciones de Productores Audiovisuales (Spanish Association Federation of Audiovisual Producers)

ICAA, Instituto de la Cinematografía y las Artes Audiovisuales (Spanish Institute for the Cinematography and the Audiovisual Arts)

IIPA, The International Intellectual Property Alliance

INE, Instituto Nacional de Estadística (Spanish National Statistics Institute)

MPAA, Motion Picture Association of America

OECD, Organization for Economic Co-operation and Development

USTR, U.S. Trade Representative Government Agency from the United States

UVE, Unión Videográfica Española (Spanish Videographic Association)

10. Appendixes

10.1. Population Growth Rate, Inflation and Purchasing Power Parity in Spain for the years 2004-2008

Year	Population per 1 January	Growth Rate	Cumulative2008=1	Updated population
2008	46157822	2.12%	1,0000	46157822
2007	45200737	1.10%	0,9788	46178525
2006	44708964	1.36%	0,9681	46184113
2005	44108530	2.11%	0,9549	46192673
2004	43197684	1.13%	0,9347	46213219

Figures obtained from the Spanish National Statistics Institute Online Database

Year	Inflation	Cumulative 2008=1	PPP per capita GDP*
2008	4.1%	1,0000	15.335,91 €
2007	2.8%	0,9720	15.411,02 €
2006	3.5%	0,9380	15.130,91 €
2005	3.4%	0,9061	14.797,69 €
2004	3.0%	0,9061	14.517,69 €

*Purchasing Power Parity (PPP) per capita Gross Domestic Product (GDP) expressed in the function model as Consumer Income. Figures obtained from International Monetary Fund, World Economic Outlook Database

10.2. Data set

10.2.1. Film ranking according to number of spectators

Spectators' Ranking	Release Year	Film Title	No. of Spectators	Updated No. of Spectators
1	2007	ORFANATO, EL	4.419.880	4.515.491
2	2004	MAR ADENTRO	4.099.442	4.385.615
3	2005	TORRENTE 3, El Protector	3.575.759	3.744.715
4	2006	ALATRISTE	3.182.491	3.287.496
5	2006	VOLVER	1.930.840	1.994.547
6	2006	LABERINTO DEL FAUNO, EL	1.681.617	1.737.101
7	2004	LOBO, EL	1.569.843	1.679.430
8	2005	2 LADOS DE LA CAMA, LOS	1.540.361	1.613.144
9	2007	REC	1.426.688	1.457.550
10	2008	CRÍMENES DE OXFORD, LOS	1.421.483	1.421.483
11	2007	MORTADELO Y FILEMÓN MISIÓN: SALVAR LA TIERRA	1.363.439	1.392.933
12	2004	MALA EDUCACION, LA	1.241.637	1.328.313
13	2006	BORGIA, LOS	1.277.968	1.320.134
14	2008	VICKY CRISTINA BARCELONA	1.268.837	1.268.837
15	2005	PRINCESAS	1.193.978	1.250.394
16	2008	CHE, EL ARGENTINO	1.167.924	1.167.924
17	2005	PENALTI MAS LARGO DEL MUNDO, EL	1.054.907	1.104.752
18	2005	7 VIRGENES	995.579	1.042.620
19	2004	CRIMEN FERPECTO	860.710	920.794
20	2008	FUERA DE CARTA	898.656	898.656
21	2007	TRECE ROSAS, LAS	863.094	881.765
22	2005	TAPAS	735.317	770.061
23	2008	GIRASOLES CIEGOS, LOS	726.329	726.329
24	2004	ASOMBROSO MUNDO DE BORJAMARI Y POCHOLO, EL	655.589	701.354
25	2005	HABANA BLUES	624.501	654.009
26	2004	DI QUE SI	606.164	648.479
27	2005	CAMARON	618.833	648.073

Spectators' Ranking	Release Year	Film Title	No. of Spectators	Updated No. of Spectators
28	2005	FRAGILES	554.312	580.503
29	2006	VA A SER QUE NADIE ES PERFECTO	497.366	513.776
30	2006	SALVADOR PUIG ANTICH	481.341	497.223
31	2005	METODO, EL	462.316	484.161
32	2005	OBABA	453.044	474.450
33	2007	CAFE SOLO O CON ELLAS	450.400	460.143
34	2005	SEMEN (UNA HISTORIA DE AMOR)	429.458	449.750
35	2006	YO SOY LA JUANI	433.951	448.269
36	2005	REINAS	418.316	438.082
37	2007	PEREZ, EL RATONCITO DE TUS SUEÑOS	423.514	432.676
38	2006	MANAGERS, LOS	401.317	414.558
39	2008	TRANSSIBERIAN	393.453	393.453
40	2007	CARTA ESFERICA, LA	377.651	385.820
41	2006	EDUCACION DE LAS HADAS, LA	350.269	361.826
42	2005	NINETTE	330.977	346.616
43	2005	UN REY EN LA HABANA	325.469	340.848
44	2004	LUNA DE AVELLANEDA	309.551	331.160
45	2006	ISI & DISI ALTO VOLTAJE	315.354	325.759
46	2006	GOYA'S GHOSTS (LOS FANTASMAS DE GOYA)	313.965	324.324
47	2008	CONJURA DE EL ESCORIAL, LA	318.580	318.580
48	2006	CAMINO DE LOS INGLESES, EL	304.358	314.400
49	2006	GAL	302.287	312.261
50	2007	EKIPO JA, EL	303.508	310.074
51	2006	TIRANTE EL BLANCO	296.585	306.371
52	2006	UN FRANCO, 14 PESETAS	293.704	303.395
53	2007	CAJA KOVAK,LA	295.013	301.395
54	2004	EL CID, LA LEYENDA	277.877	297.275
55	2007	ATASCO EN LA NACIONAL	279.286	285.328
56	2004	HIPNOS	261.721	279.991
57	2007	TORRE DE SUSO, LA	266.678	272.447
58	2004	UNA DE ZOMBIS	253.931	271.657
59	2007	CLUB DE LOS SUICIDAS, EL	259.511	265.125
60	2004	INCAUTOS	244.536	261.607
61	2004	ROMA	242.355	259.273

Spectators' Ranking	Release Year	Film Title	No. of Spectators	Updated No. of Spectators
62	2007	SALIR PITANDO	253.556	259.041
63	2008	CARLITOS Y EL CAMPO DE LOS SUEÑOS	258.345	258.345
64	2004	REYES MAGOS, LOS	237.760	254.358
65	2007	CAOTICA ANA	245.857	251.175
66	2004	JUEGO DE LA VERDAD DE ALVARO FERNANDEZ-ARMERO, EL	233.678	249.991
67	2007	LOLA, la pelicula	241.731	246.960
68	2006	BIENVENIDO A CASA	233.817	241.532
69	2004	TIOVIVO c. 1950	223.104	238.678
70	2006	VOLANDO VOY	229.479	237.051
71	2007	MATAHARIS	231.462	236.469
72	2008	CAMINO	215.699	215.699
73	2008	DIARIO DE UNA NINFOMANA, EL	211.632	211.632
74	2004	HECTOR	195.951	209.630
75	2004	F.B.I. FRIKIS BUSCAN INCORDIAR	193.290	206.783
76	2006	NOCHE DE LOS GIRASOLES, LA	194.127	200.532
77	2007	DONKEYXOTE	194.624	198.834
78	2008	SOLO QUIERO CAMINAR	198.530	198.530
79	2007	7 MESAS (De Billar Francés)	192.729	196.898
80	2007	BAJO LAS ESTRELLAS	191.611	195.756
81	2004	OUIJA	182.105	194.817
82	2008	UNA PALABRA TUYA	193.869	193.869
83	2007	CANDIDA	184.752	188.749
84	2006	AZUL OSCURO CASI NEGRO	178.631	184.525
85	2008	ESKALOFRIO	183.895	183.895
86	2005	SUEÑO DE UNA NOCHE DE SAN JUAN, EL	173.769	181.980
87	2004	XXL	168.993	180.790
88	2008	COBARDES	179.500	179.500
89	2005	VIDA SECRETA DE LAS PALABRAS	171.141	179.227
90	2008	ESPIRITU DEL BOSQUE, EL	179.114	179.114
91	2005	MAQUINISTA, EL	168.992	176.977
92	2005	CALENTITO, EL	168.298	176.250
93	2004	CLEOPATRA	162.934	174.308
94	2005	FIN DE CURSO 2005	156.860	164.272
95	2008	CASUAL DAY	162.904	162.904

Spectators' Ranking	Release Year	Film Title	No. of Spectators	Updated No. of Spectators
96	2008	8 CITAS	158.467	158.467
97	2008	TODOS ESTAMOS INVITADOS	153.431	153.431
98	2006	PRÓXIMO ORIENTE, EL	129.617	133.894
99	2008	SANGRE DE MAYO	126.905	126.905
100	2008	RIVALES	117.237	117.237

10.2.2. Film ranking according to box office revenue

Release Year	Film Title	Box Office Revenue	Updated Box Office Revenue
2007	ORFANATO, EL	25.060.212,88 €	25.782.112,02 €
2004	MAR ADENTRO	19.837.472,83 €	22.570.641,67 €
2005	TORRENTE 3, El Protector	18.168.924,78 €	20.052.038,15 €
2006	ALATRISTE	16.715.741,56 €	17.820.999,98 €
2006	VOLVER	10.242.533,56 €	10.919.778,20 €
2006	LABERINTO DEL FAUNO, EL	8.895.430,92 €	9.483.604,04 €
2004	LOBO, EL	7.750.455,72 €	8.818.298,60 €
2005	2 LADOS DE LA CAMA, LOS	7.868.697,21 €	8.684.246,24 €
2007	REC	8.189.203,89 €	8.425.106,88 €
2008	CRÍMENES DE OXFORD, LOS	8.202.584,00 €	8.202.584,00 €
2007	MORTADELO Y FILEMÓN MISIÓN: SALVAR LA TIERRA	7.707.302,77 €	7.929.323,84 €
2008	VICKY CRISTINA BARCELONA	7.622.587,69 €	7.622.587,69 €
2006	BORGIA, LOS	6.741.596,04 €	7.187.355,85 €
2004	MALA EDUCACION, LA	6.110.253,78 €	6.952.112,79 €
2008	CHE, EL ARGENTINO	6.853.685,29 €	6.853.685,29 €
2005	PRINCESAS	6.089.400,27 €	6.720.534,54 €
2005	PENALTI MAS LARGO DEL MUNDO, EL	5.138.329,55 €	5.670.890,35 €
2005	7 VIRGENES	4.859.866,81 €	5.363.566,41 €
2008	FUERA DE CARTA	5.109.080,32 €	5.109.080,32 €
2004	CRIMEN FERPECTO	4.250.837,14 €	4.836.509,30 €
2007	TRECE ROSAS, LAS	4.667.711,92 €	4.802.172,76 €
2005	TAPAS	3.782.331,38 €	4.174.350,11 €
2008	GIRASOLES CIEGOS, LOS	4.150.076,54 €	4.150.076,54 €
2004	ASOMBROSO MUNDO DE BORJAMARI Y POCHOLO, EL	3.316.634,03 €	3.773.593,49 €
2005	HABANA BLUES	3.127.706,01 €	3.451.876,27 €
2004	DI QUE SI	2.957.992,11 €	3.365.538,57 €
2005	CAMARON	3.035.931,37 €	3.350.589,67 €
2005	FRAGILES	2.827.006,87 €	3.120.011,24 €
2006	VA A SER QUE NADIE ES PERFECTO	2.653.625,17 €	2.829.085,02 €

Release Year	Film Title	Box Office Revenue	Updated Box Office Revenue
2006	SALVADOR PUIG ANTICH	2.598.866,32 €	2.770.705,47 €
2005	METODO, EL	2.434.429,80 €	2.686.745,63 €
2005	OBABA	2.283.344,96 €	2.520.001,64 €
2007	CAFE SOLO O CON ELLAS	2.437.791,95 €	2.508.016,41 €
2006	YO SOY LA JUANI	2.340.311,50 €	2.495.054,80 €
2005	SEMEN (UNA HISTORIA DE AMOR)	2.130.952,07 €	2.351.814,03 €
2008	TRANSSIBERIAN	2.348.860,83 €	2.348.860,83 €
2005	REINAS	2.121.688,73 €	2.341.590,59 €
2007	PEREZ, EL RATONCITO DE TUS SUEÑOS	2.182.273,79 €	2.245.137,64 €
2006	MANAGERS, LOS	2.044.113,47 €	2.179.271,91 €
2007	CARTA ESFERICA, LA	2.114.819,98 €	2.175.740,72 €
2006	EDUCACION DE LAS HADAS, LA	1.850.559,15 €	1.972.919,63 €
2008	CONJURA DE EL ESCORIAL, LA	1.845.819,84 €	1.845.819,84 €
2005	NINETTE	1.660.383,67 €	1.832.473,69 €
2006	ISI & DISI ALTO VOLTAJE	1.712.611,78 €	1.825.851,06 €
2004	LUNA DE AVELLANEDA	1.563.270,70 €	1.778.655,13 €
2005	UN REY EN LA HABANA	1.573.542,13 €	1.736.631,49 €
2006	CAMINO DE LOS INGLESES, EL	1.618.952,31 €	1.725.998,75 €
2006	GOYA'S GHOSTS (LOS FANTASMAS DE GOYA)	1.606.750,30 €	1.712.989,94 €
2007	EKIPO JA, EL	1.629.034,84 €	1.675.961,77 €
2006	GAL	1.567.654,29 €	1.671.308,87 €
2006	TIRANTE EL BLANCO	1.554.832,07 €	1.657.638,83 €
2007	CAJA KOVAK,LA	1.596.899,74 €	1.642.900,97 €
2006	UN FRANCO, 14 PESETAS	1.513.295,08 €	1.613.355,38 €
2007	TORRE DE SUSO, LA	1.527.865,12 €	1.571.877,70 €
2007	ATASCO EN LA NACIONAL	1.511.035,48 €	1.554.563,25 €
2004	HIPNOS	1.291.175,51 €	1.469.071,19 €
2007	CLUB DE LOS SUICIDAS, EL	1.413.666,05 €	1.454.388,94 €
2004	EL CID, LA LEYENDA	1.277.053,41 €	1.453.003,37 €
2007	SALIR PITANDO	1.403.854,06 €	1.444.294,30 €
2004	UNA DE ZOMBIS	1.257.483,30 €	1.430.736,93 €
2008	CARLITOS Y EL CAMPO DE LOS SUEÑOS	1.401.541,26 €	1.401.541,26 €
2007	CAOTICA ANA	1.361.757,30 €	1.400.984,88 €
2007	MATAHARIS	1.328.666,40 €	1.366.940,74 €

Release Year	Film Title	Box Office Revenue	Updated Box Office Revenue
2004	ROMA	1.195.897,06 €	1.360.665,46 €
2004	INCAUTOS	1.181.037,95 €	1.343.759,09 €
2006	BIENVENIDO A CASA	1.254.646,91 €	1.337.605,18 €
2004	JUEGO DE LA VERDAD DE ALVARO FERNANDEZ-ARMERO, EL	1.141.720,03 €	1.299.024,02 €
2004	REYES MAGOS, LOS	1.121.803,08 €	1.276.362,95 €
2004	TIOVIVO c. 1950	1.100.398,46 €	1.252.009,24 €
2006	VOLANDO VOY	1.173.377,05 €	1.250.961,69 €
2008	CAMINO	1.246.515,61 €	1.246.515,61 €
2008	DIARIO DE UNA NINFOMANA, EL	1.244.693,95 €	1.244.693,95 €
2007	LOLA, la pelicula	1.203.171,97 €	1.237.831,24 €
2008	SOLO QUIERO CAMINAR	1.145.548,04 €	1.145.548,04 €
2008	UNA PALABRA TUYA	1.124.414,41 €	1.124.414,41 €
2007	DONKEYXOTE	1.091.984,72 €	1.123.441,07 €
2007	7 MESAS (De Billar Francés)	1.089.205,30 €	1.120.581,58 €
2006	NOCHE DE LOS GIRASOLES, LA	1.033.442,49 €	1.101.774,55 €
2007	BAJO LAS ESTRELLAS	1.061.020,94 €	1.091.585,33 €
2004	HECTOR	943.738,65 €	1.073.765,15 €
2004	F.B.I. FRIKIS BUSCAN INCORDIAR	928.468,54 €	1.056.391,15 €
2008	ESKALOFRIO	1.026.683,83 €	1.026.683,83 €
2008	COBARDES	1.015.506,78 €	1.015.506,78 €
2008	ESPIRITU DEL BOSQUE, EL	1.005.431,67 €	1.005.431,67 €
2006	AZUL OSCURO CASI NEGRO	937.882,36 €	999.895,90 €
2004	OUIJA	866.486,67 €	985.869,54 €
2007	CANDIDA	931.620,14 €	958.456,93 €
2005	MAQUINISTA, EL	855.943,32 €	944.657,34 €
2008	CASUAL DAY	925.729,92 €	925.729,92 €
2005	VIDA SECRETA DE LAS PALABRAS	831.663,25 €	917.860,77 €
2004	XXL	801.676,31 €	912.129,73 €
2004	CLEOPATRA	793.061,12 €	902.327,56 €
2005	CALENTITO, EL	804.802,37 €	888.215,90 €
2008	8 CITAS	873.592,05 €	873.592,05 €
2005	SUEÑO DE UNA NOCHE DE SAN JUAN, EL	788.303,97 €	870.007,53 €
2008	TODOS ESTAMOS INVITADOS	845.021,06 €	845.021,06 €
2005	FIN DE CURSO 2005	739.336,94 €	815.965,32 €

Release Year	Film Title	Box Office Revenue	Updated Box Office Revenue
2006	PRÓXIMO ORIENTE, EL	696.268,13 €	742.305,94 €
2008	SANGRE DE MAYO	738.707,31 €	738.707,31 €
2008	RIVALES	675.453,20 €	675.453,20 €

10.2.3. Director's and Cast's Popularity

Spectators' Ranking	Director	Opera Prima	Director's Search results	Actor 1	First Actor's Search results
1	JUAN ANTONIO BAYONA	YES	38	PILAR LÓPEZ DE AYALA	28.000
2	ALEJANDRO AMENÁBAR	NO	72.700	CHRISTIAN BALE	131.000
3	SANTIAGO SEGURA	NO	116.000	BEN KINGSLEY	31.400
4	AGUSTÍN DÍAZ YANES	NO	24.400	VIGGO MORTENSEN	130.000
5	PEDRO ALMODÓVAR	NO	306.000	ÓSCAR JAENADA	14.300
6	GUILLERMO DEL TORO	NO	95.700	JUAN JOSÉ BALLESTA	14.500
7	MIGUEL COURTOIS	NO	3.430	EDUARDO NORIEGA	32.600
8	EMILIO MARTÍNEZ LÁZARO	NO	13.300	ERNESTO ALTERIO	12.300
9	PACO PLAZA	NO	18.300	MANUELA VELASCO	13.300
10	ÁLEX DE LA IGLESIA	NO	80.900	ELIJAH WOOD	23.500
11	MIGUEL BARDEM	NO	8.350	EDUARDO NORIEGA	32.600
12	PEDRO ALMODÓVAR	NO	306.000	ALFREDO LANDA (JOACO)	30.800
13	ANTONIO HERNÁNDEZ	NO	35.500	ELOY AZORIN	7.140
14	WOODY ALLEN	NO	384.000	SARAH POLLEY	13.000
15	FERNANDO LEÓN DE ARANOA	NO	24.900	CANDELA PEÑA	17.500
16	STEVEN SODERBERGH	NO	64.300	BENICIO DEL TORO (CHÉ)	75.100
17	ROBERTO SANTIAGO	NO	45.500	RICARD SALES	2.050
18	ALBERTO RODRÍGUEZ	NO	11.600	JUAN JOSÉ BALLESTA	15.200
19	ÁLEX DE LA IGLESIA	NO	89.900	GUILLERMO	14.600

Spectators' Ranking	Director	Opera Prima	Director's Search results	Actor 1	First Actor's Search results
				TOLEDO	
20	NACHO GARCÍA VELILLA	YES	38	ALBERTO SAN JUAN	23.200
21	EMILIO MARTÍNEZ LÁZARO	NO	13.300	CARLOS IGLESIAS	16.800
22	JOSÉ CORBACHO	YES	38	ESTHER NUBIOLA	3.810
23	JOSÉ LUIS CUERDA	NO	44.500	JAVIER BARDEM	386.000
24	ENRIQUE LÓPEZ LAVIGNE	YES	38	SANTIAGO SEGURA	116.000
25	BENITO ZAMBRANO	NO	9.180	ADRIANA OZORES	52.600
26	JUAN CALVO	YES	38	PAZ VEGA	104.000
27	JAIME CHÁVARRI	NO	13.400	ÓSCAR JAENADA	14.300
28	JAUME BALAGUERÓ	NO	27.700	JORDI MOLLÁ	12.400
29	JOAQUIN ORISTRELL	NO	14.200	JAVIER BARDEM	386.000
30	MANUEL HUERGA	NO	12.500	QUIM GUTIÉRREZ	7.240
31	MARCELO PIÑEYRO	NO	7.640	NAJWA NIMRI	72.700
32	MONTXO ARMENDÁRIZ	NO	17.500	CARMELO GÓMEZ	49.300
33	ÁLVARO DÍAZ LORENZO	YES	38	ALEJO SAURAS (PEDRO)	40.800
34	DANIELA FEJERMAN	NO	4.220	DIEGO LUNA (GABRIEL)	42.700
35	BIGAS LUNA	NO	53.700	VERÓNICA ECHEGUI	21.600
36	MANUEL GÓMEZ PEREIRA	NO	22.200	VERÓNICA FORQUÉ	13.900
37	JUAN PABLO BUSCARINI	NO	3.120	FERNANDO TEJERO	62.100
38	FERNANDO GUILLEN CUERVO	NO	9.170	GAEL GARCÍA BERNAL	101.000
39	BRAD ANDERSON	NO	10.500	PILAR LÓPEZ DE AYALA	28.000
40	IMANOL URIBE	NO	17.700	CARMELO GÓMEZ	49.300
41	JOSE LUIS CUERDA	NO	44.500	JUAN MUÑOZ	19.600
42	JOSÉ LUIS GARCI	NO	34.700	EDUARDO SOTO	1.210
43	ALEXIS VALDÉS	YES	38	MIGUEL ÁNGEL	188

Spectators' Ranking	Director	Opera Prima	Director's Search results	Actor 1	First Actor's Search results
				APARICIO	
44	JUAN JOSÉ CAMPANELLA	NO	10.700	RICARDO DARIN	13.200
45	MIGUEL ANGEL LAMATA	NO	3.080	TRISTÁN ULLOA	26.700
46	MILOS FORMAN	NO	20.200	ALBERTO YOEL GARCÍA OSORIO	8
47	ANTONIO DEL REAL	NO	14.200	JOAQUIM DE ALMEIDA	18.400
48	ANTONIO BANDERAS	YES	168.000	ALBERTO AMARILLA	8.580
49	MIGUEL COURTOIS	NO	3.430	JAVIER CÁMARA	39.300
50	JUAN MUÑOZ	YES	38	CARMEN MAURA	42.400
51	VICENTE ARANDA	NO	34.900	JAVIER CÁMARA	39.300
52	CARLOS IGLESIAS	YES	38	ALEXIS VALDÉS	3.740
53	DANIEL MONZON JEREZ	NO	38	DAVID KELLY	4.030
54	JOSÉ POZO	YES	2.850	JUNIO VALVERDE	2.400
55	JOSETXO SAN MATEO	NO	940	PABLO CARBONELL	63.600
56	DAVID CARRERAS	YES	38	ERNESTO ALTERIO	12.300
57	TOM FERNÁNDEZ	YES	38	GERALDINE CHAPLIN	25.900
58	MIGUEL ÁNGEL LAMATA	YES	38	MALENA ALTERIO	51.700
59	ROBERTO SANTIAGO	NO	45.500	FERNANDO TEJERO	62.100
60	MIGUEL BARDEM	NO	8.350	FLORENTINO FERNANDEZ	12.100
61	ADOLFO ARISTARAIN	NO	7.020	GUILLERMO TOLEDO	14.600
62	ÁLVARO FERNÁNDEZ ARMERO	NO	3.920	DANIEL BRÜHL	12.500
63	JESÚS DEL CERRO	NO	4.110	GUILLERMO	1.550

Spectators' Ranking	Director	Opera Prima	Director's Search results	Actor 1	First Actor's Search results
				CAMPRA	
64	ANTONIO NAVARRO	YES	38	ERNESTO ALTERIO	12.300
65	JULIO MEDEM	NO	28.900	MANUELA VELLÉS	7.390
66	ALVARO FERNANDEZ ARMERO	NO	3.920	SERGI LÓPEZ	21.900
67	MIGUEL HERMOSO	NO	9.130	GALA ÉVORA	6.800
68	DAVID TRUEBA	NO	26.800	ALEJO SAURAS	39.300
69	JOSÉ LUIS GARCI	NO	34.700	ÓSCAR JAENADA	14.000
70	MIGUEL ALBALADEJO	NO	4.640	PENÉLOPE CRUZ	490.000
71	ICIAR BOLLAIN	NO	20.600	JAVIER BARDEM	386.000
72	JAVIER FESSER	NO	95.100	NEREA CAMACHO	13.300
73	CHRISTIAN MOLINA	NO	6.700	BELÉN FABRA (VAL)	6.690
74	GRACIA QUEREJETA	NO	21.800	CRISTINA BRONDO	5.060
75	JAVIER CÁRDENAS	NO	1.700	CALISTA FLOCKHART	10.600
76	JORGE SANCHEZ CABEZUDO	YES	38	ELSA PATAKY	115.000
77	JOSÉ POZO	NO	2.850	RICARDO DARÍN	13.600
78	AGUSTÍN DÍAZ YANES	NO	24.400	ÁNGEL DE ANDRÉS	167.000
79	GRACIA QUEREJETA	NO	21.800	MARIBEL VERDÚ	87.800
80	FÉLIX VISCARRET	YES	38	ALBERTO SAN JUAN	23.200
81	JUAN PEDRO ORTEGA	YES	38	BELÉN RUEDA	54.100
82	ÁNGELES GONZÁLEZ–SINDE	YES	38	FERNANDO TEJERO	62.100
83	GUILLERMO FESSER	YES	38	GLORIA MUÑOZ	9.940
84	DANIEL SÁNCHEZ ARÉVALO	YES	38	QUIM GUTIÉRREZ	7.200
85	ISIDRO ORTIZ	NO	5.140	CARMEN DE MAIRENA	8.780
86	ÁNGEL DE LA CRUZ	NO	41.500	MARÍA ADÁNEZ	12.900
87	JULIO SÁNCHEZ VALDÉS	YES	38	MANUEL ALEXANDRE	17.500

Spectators' Ranking	Director	Opera Prima	Director's Search results	Actor 1	First Actor's Search results
88	JOSÉ CORBACHO	NO	28.700	LLUÍS HOMAR	40.200
89	ISABEL COIXET	NO	92.400	BORJA NAVAS	626
90	DAVID RUBÍN	YES	38	JORDI VILCHES	5.050
91	BRAD ANDERSON	NO	10.500	ENRIQUE VILLEN	5.770
92	CHUS GUTIÉRREZ	NO	29.500	VERÓNICA SÁNCHEZ	23.900
93	EDUARDO MINOGNA	NO	149	NORMA ALEANDRO	5.380
94	MIGUEL MARTÌ CAMPOY	NO	160	FERNANDO TEJERO	62.100
95	MAX LEMCKE	YES	38	JUAN DIEGO	138.000
96	PERIS ROMANO	YES	38	FERNANDO TEJERO	62.100
97	MANUEL GUTIÉRREZ ARAGÓN	NO	22.500	SANTIAGO SEGURA	116.000
98	FERNANDO COLOMO	NO	22.000	JAVIER CIFRIÁN	1.640
99	JOSÉ LUIS GARCI	NO	34.700	ERNESTO ALTERIO	12.300
100	FERNANDO COLOMO	NO	22.000	JUAN DIEGO BOTTO	24.700

10.2.4. Genre

Spectators' Ranking	Release Year	Film Title	Genre	Operational Genre
1	2007	ORFANATO, EL	THRILLER	THRILLER
2	2004	MAR ADENTRO	DRAMA	DRAMA
3	2005	TORRENTE 3, El Protector	COMEDY	COMEDY
4	2006	ALATRISTE	ADVENTURE	ACTION
5	2006	VOLVER	DRAMATIC COMEDY	COMEDY
6	2006	LABERINTO DEL FAUNO, EL	DRAMA	DRAMA
7	2004	LOBO, EL	DRAMA	DRAMA
8	2005	2 LADOS DE LA CAMA, LOS	COMEDY	COMEDY
9	2007	REC	THRILLER	THRILLER
10	2008	CRÍMENES DE OXFORD, LOS	DRAMA	DRAMA
11	2007	MORTADELO Y FILEMÓN MISIÓN: SALVAR LA TIERRA	COMEDY	COMEDY
12	2004	MALA EDUCACION, LA	DRAMA	DRAMA
13	2006	BORGIA, LOS	BIOGRAPHY	DRAMA
14	2008	VICKY CRISTINA BARCELONA	DRAMATIC COMEDY	COMEDY
15	2005	PRINCESAS	DRAMA	DRAMA
16	2008	CHE, EL ARGENTINO	BIOGRAPHY	DRAMA
17	2005	PENALTI MAS LARGO DEL MUNDO, EL	COMEDY	COMEDY
18	2005	7 VIRGENES	DRAMA	DRAMA

Spectators' Ranking	Release Year	Film Title	Genre	Operational Genre
19	2004	CRIMEN FERPECTO	COMEDY	COMEDY
20	2008	FUERA DE CARTA	COMEDY	COMEDY
21	2007	TRECE ROSAS, LAS	DRAMA	DRAMA
22	2005	TAPAS	DRAMATIC COMEDY	COMEDY
23	2008	GIRASOLES CIEGOS, LOS	DRAMA	DRAMA
24	2004	ASOMBROSO MUNDO DE BORJAMARI Y POCHOLO, EL	COMEDY	COMEDY
25	2005	HABANA BLUES	MUSICAL	OTHER
26	2004	DI QUE SI	COMEDY	COMEDY
27	2005	CAMARON	BIOGRAPHY	DRAMA
28	2005	FRAGILES	THRILLER	THRILLER
29	2006	VA A SER QUE NADIE ES PERFECTO	DRAMATIC COMEDY	COMEDY
30	2006	SALVADOR PUIG ANTICH	DRAMA	DRAMA
31	2005	METODO, EL	DRAMA	DRAMA
32	2005	OBABA	FICTION	DRAMA
33	2007	CAFE SOLO O CON ELLAS	COMEDY	COMEDY
34	2005	SEMEN (UNA HISTORIA DE AMOR)	COMEDY	COMEDY
35	2006	YO SOY LA JUANI	DRAMA	DRAMA
36	2005	REINAS	COMEDY	COMEDY
37	2007	PEREZ, EL RATONCITO DE TUS SUEÑOS	ANIMATION	ANIMATION
38	2006	MANAGERS, LOS	COMEDY	COMEDY

Spectators' Ranking	Release Year	Film Title	Genre	Operational Genre
39	2008	TRANSSIBERIAN	THRILLER	THRILLER
40	2007	CARTA ESFERICA, LA	ADVENTURE	ACTION
41	2006	EDUCACION DE LAS HADAS, LA	DRAMA	DRAMA
42	2005	NINETTE	COMEDY	COMEDY
43	2005	UN REY EN LA HABANA	COMEDY	COMEDY
44	2004	LUNA DE AVELLANEDA	DRAMA	DRAMA
45	2006	ISI & DISI ALTO VOLTAJE	COMEDY	COMEDY
46	2006	GOYA'S GHOSTS (LOS FANTASMAS DE GOYA)	DRAMA	DRAMA
47	2008	CONJURA DE EL ESCORIAL, LA	SUSPENSE	THRILLER
48	2006	CAMINO DE LOS INGLESES, EL	DRAMA	DRAMA
49	2006	GAL	ACTION	ACTION
50	2007	EKIPO JA, EL	COMEDY	COMEDY
51	2006	TIRANTE EL BLANCO	DRAMA	DRAMA
52	2006	UN FRANCO, 14 PESETAS	DRAMATIC COMEDY	COMEDY
53	2007	CAJA KOVAK,LA	THRILLER	THRILLER
54	2004	EL CID, LA LEYENDA	ANIMATION	ANIMATION
55	2007	ATASCO EN LA NACIONAL	COMEDY	COMEDY
56	2004	HIPNOS	THRILLER	THRILLER
57	2007	TORRE DE SUSO, LA	COMEDY	COMEDY
58	2004	UNA DE ZOMBIS	THRILLER	THRILLER

Spectators' Ranking	Release Year	Film Title	Genre	Operational Genre
59	2007	CLUB DE LOS SUICIDAS, EL	COMEDY	COMEDY
60	2004	INCAUTOS	SUSPENSE	THRILLER
61	2004	ROMA	DRAMA	DRAMA
62	2007	SALIR PITANDO	COMEDY	COMEDY
63	2008	CARLITOS Y EL CAMPO DE LOS SUEÑOS	KIDS	ANIMATION
64	2004	REYES MAGOS, LOS	ANIMATION	ANIMATION
65	2007	CAOTICA ANA	DRAMA	DRAMA
66	2004	JUEGO DE LA VERDAD DE ALVARO FERNANDEZ-ARMERO, EL	COMEDY	COMEDY
67	2007	LOLA, la pelicula	BIOGRAPHY	DRAMA
68	2006	BIENVENIDO A CASA	COMEDY	COMEDY
69	2004	TIOVIVO c. 1950	DRAMATIC COMEDY	COMEDY
70	2006	VOLANDO VOY	DRAMA	DRAMA
71	2007	MATAHARIS	FICTION	DRAMA
72	2008	CAMINO	DRAMA	DRAMA
73	2008	DIARIO DE UNA NINFOMANA, EL	EROTIC	OTHER
74	2004	HECTOR	DRAMA	DRAMA
75	2004	F.B.I. FRIKIS BUSCAN INCORDIAR	COMEDY	COMEDY
76	2006	NOCHE DE LOS GIRASOLES, LA	FILM NOIR	THRILLER
77	2007	DONKEYXOTE	ANIMATION	ANIMATION
78	2008	SOLO QUIERO CAMINAR	THRILLER	THRILLER

Spectators' Ranking	Release Year	Film Title	Genre	Operational Genre
79	2007	7 MESAS (De Billar Francés)	DRAMATIC COMEDY	COMEDY
80	2007	BAJO LAS ESTRELLAS	DRAMA	DRAMA
81	2004	OUIJA	THRILLER	THRILLER
82	2008	UNA PALABRA TUYA	DRAMATIC COMEDY	COMEDY
83	2007	CANDIDA	COMEDY	COMEDY
84	2006	AZUL OSCURO CASI NEGRO	DRAMA	DRAMA
85	2008	ESKALOFRIO	THRILLER	THRILLER
86	2005	SUEÑO DE UNA NOCHE DE SAN JUAN, EL	ANIMATION	ANIMATION
87	2004	XXL	COMEDY	COMEDY
88	2008	COBARDES	DRAMA	DRAMA
89	2005	VIDA SECRETA DE LAS PALABRAS	DRAMA	DRAMA
90	2008	ESPIRITU DEL BOSQUE, EL	ANIMATION	ANIMATION
91	2005	MAQUINISTA, EL	THRILLER	THRILLER
92	2005	CALENTITO, EL	COMEDY	COMEDY
93	2004	CLEOPATRA	COMEDY	COMEDY
94	2005	FIN DE CURSO 2005	COMEDY	COMEDY
95	2008	CASUAL DAY	COMEDY	COMEDY
96	2008	8 CITAS	COMEDY	COMEDY
97	2008	TODOS ESTAMOS INVITADOS	DRAMA	DRAMA
98	2006	PRÓXIMO ORIENTE, EL	COMEDY	COMEDY

Spectators' Ranking	Release Year	Film Title	Genre	Operational Genre
99	2008	SANGRE DE MAYO	DRAMA	DRAMA
100	2008	RIVALES	COMEDY	COMEDY