

**THE RISK AND RETURN TRADE-OFF  
IN THE FILM INDUSTRY.  
A COMPARATIVE EMPIRICAL ANALYSIS**

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## **Abstract**

Despite its proved riskiness, the film industry is one of the most economically relevant industries in the world, constantly undergoing rapid change and development, since every day millions of dollars, pounds, euros or other currencies are invested in film productions. Although restricted to the theatrical release sector of the market, this thesis aims to explain why this industry attracts so many investors, and in doing this to add to the body of knowledge and understanding of the manner in which the industry works. At its core is the analysis of the trade-off between risk and return that characterises the industry. The work, hence, is based not on models and predictions of the expected returns, profits or losses of film investments, but rather on the assessment of indicators that can depict the scale or degree of dispersion of these expected values – that is, the risk that the companies are willing to entertain.

The work makes an in-depth comparative analysis of the investment risk and return trade-off by empirically investigating the different behaviour of the film industry in the United States and in Europe, drawing in detail upon the Italian film industry to represent the European context. In this perspective, the work also aims to analyse why state support is justified in Europe and not in the US, and the financial effectiveness of Italian state support to film industry, by identifying to what extent it contributes to improving cultural identity.

The investigation extends significantly current knowledge, showing that the financial effectiveness of the US film industry is incomparably superior to that of the Italian film industry, and that public policy in Italy towards the current system of film subsidisation is inequitable and inefficient. The work also introduces a new dataset into the literature, the Italian dataset constructed by the author.



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**1**

# **Introduction**

## **General motivation**

The film industry has been defined as the only business where “a single example of product fully created at an investment of millions of dollars has no real assurance that the public will buy it” (Squire, 1992). The types of risk that shape and condition the production of a film are so specific and unpredictable that “nobody knows” how much revenue a production will generate since no indicative variables such as famous directors, a renowned cast of actors or any other “recognising signs” can be taken as a reference point to guarantee minimum profitability. In fact, the film business has proved to be so volatile that it has been termed the “risky business” (Prindle, 1993).

To go beyond the pervasive ambience of risk that characterises the movie business as a whole, it is necessary to examine the manifestations of risk over different contexts. To this end, the work aims to make an in-depth comparative analysis of the investment risk and return trade-off by empirically investigating the different behaviour of the film industry in the United States and in Europe, drawing in detail upon the Italian film industry to represent the European context. In doing this, the investigation will extend significantly current knowledge about the financial differences between Hollywood and the European film industries.

Many scholars have dealt with the historical significance of the film industry, and the reasons for Hollywood’s omnipresence and leadership in the world markets from the 1910s onward. However, in this literature the financial causes of Hollywood’s success over time have received scant attention. This thesis attempts to redress this imbalance, comparing the financial causes behind the performances of the two industries in recent times. However, the thesis also aims to show that while differences indeed do exist in

the level of financial performance of the two industries – in terms of risk and return profile the US film industry is incontrovertibly superior to the European industries, and in particular the Italian industry – many facets of their financial environments are similar. For instance, the completely random distribution of production costs against rates of return; the quasi-linear-trend relationship between production costs and revenues; and the long thick right tail of film revenue frequency distributions.

There is a shortfall in the literature concerning the analysis of the efficacy of European attempts to bridge the financial gap resulting from the superior performance of Hollywood in international markets. The research thus also aims to investigate this aspect by studying the real financial effectiveness of subsidy policies in the production of Italian films, leading to a recommendation that the Italian film industry should adopt a new framework – to be proposed to the Italian Ministry of Cultural Heritage – aimed at readdressing the role of state support, in order to make it more efficient, make the risk and return trade-off in the industry more balanced, and reduce the financial gap between it and the US film industry.

Yet, despite its proved riskiness, the film industry is one of the most economically relevant and dynamic industries in the world, constantly undergoing rapid change and development, since every day millions of dollars, pounds, euros or other currencies are invested in film productions. Although restricted to the theatrical release sector of the market, this research also aims to explain why this industry attracts so many investors, and in doing this to add to the body of knowledge and understanding of the manner in which the industry works. At its core is the analysis of the trade-off between risk and return that characterises the industry. The work, hence, is based not on models and

predictions of the expected returns, profits or losses of film investments, but rather on the assessment of indicators that can depict the scale or degree of dispersion of these expected values – that is, the risk that the companies are willing to entertain.

## **Research questions**

### ***Risk and return trade-off***

One thing that I have found particularly interesting in reading the numerous contributions of different scholars is the emphasis put on the high level of risk surrounding the film industry. Although the demand related to the launch of a new food product can be quite accurately estimated, the success of a new film production is beset with great uncertainty. This particular aspect has been amply borne out by the results of previous research studies that reached the conclusion that the film industry is “*the risky industry*” (Sedgwick, Pokorny, 1998; De Vany, Walls, 1997); the industry “where nobody knows” (Eckert, De Vany, 1991); and also “an industry of extremes” (Lee, 1998). A motion picture can be a great success, with revenues that greatly exceed its production costs, but it can also end in a heavy failure, with proceeds that are not even able to cover a very small share of the production costs: what is certain is that it is extremely difficult to establish this outcome in advance. In recognition of the fact that the possibilities of foreseeing the box office proceeds of a movie are so limited, Goldman introduced the situation-defining expression “nobody knows” (Goldman, 1984).

The thesis is based on two datasets, one of which is completely new. The US context is founded on *AC Nielsen* data referring to about 4,200 films released on the US film market between 1988 and 1999, from which a final dataset was constructed, consisting of 1,636 observations, for which production cost and revenue, date of release, and distributor data exist. The information for the Italian context is completely new, based upon unpublished data collected for legal and business purposes by the *Research Observatory of Cinecittà*. From this hitherto unexamined research material a new dataset was created, consisting of the revenue and declared production cost statistics of all Italian-made feature films released on the Italian market over a 9-year period between 1995 and 2003. This results in a final population of 566 films, comprising only those titles whose essential data – costs, box office takings, dates for expenditure, revenue collection and release, and film producer – are complete.

Various previous studies have dealt with the relationship between the production cost and the profitability of motion pictures. In this perspective, it is important to notice that empirical outcomes about the frequency distributions of film revenue are many and significant; more limited are the conclusions achieved for relative profitability indicators, such as rates of return or profits and losses.

Numerous investigations have demonstrated that the probability distribution of revenue has unbounded variance, which implies that revenue forecasting is a mistaken activity; the distribution is highly right skewed, and is dominated by a few blockbuster productions (De Vany, Walls, 1999; 1996; Collins *et al.*, 2002; Bagella, Becchetti, 1999; Sedgwick, Pokorny, 1998; Austin, 1989; Smith, Smith, 1986).

The first main research question the work aims to investigate can thus be formulated as follows:

*1. In either the US or the Italian context, does the statistical distribution of film revenues conform to that found in earlier studies?*

Other studies have shown that a positive association between production budget and both box-office revenue usually exists, albeit one that exhibits high levels of variance (Sedgwick, Pokorny, 1998; De Vany, 2004). However, in order to investigate the risk and return trade-off in the business, it is necessary to analyse the frequency distributions of film rates of return – that is, the difference between the box office takings and the related costs – expressed in terms of the costs themselves: knowledge that higher budget films are likely to generate higher revenues is not sufficient to establish the performance of film investments.

It has been emphasised that uncertainty pervades the industry as in no other commodity, so that the economic performance of a film at the box office cannot be predicted when it is released. Experience and studies have proved that despite persistent beliefs within the business about ‘bankable’ stars and directors, good reviews or the production of a sequel, there are no specific attributes of films that can be employed to guarantee profitability. Empirical investigations have proved that these “recognising signs” are often only a snare and a delusion (Bowser, 1990; Kerr, 1990; Pokorny, Sedgwick, 2001), and that even though “the presence of a star name and gaining positive reviews enhances the probability of success ... the impact is far from certain” (Collins *et al.*, 2002, page 352). Although the same can be said for production budgets, this has long been considered the only variable whose influence on the economic performances of

motion pictures in the cinemas can somehow be estimated, though in a restricted sense. The effect that production budgets have on profitability is a particularly significant question to be investigated. For a comparative analysis, it is interesting to examine the different level of investment in the industry according to the environments investigated, and the relationship between absolute indicators of profitability, e.g., revenues, and relative indicators of profitability, e.g., rates of return.

Based on the previous observations, two critical research questions can be posed. The first is:

*2. To what extent are production costs a good indicator of the rates of return generated by the films in the datasets?*

The previous research questions are concerned with the magnitude of production budgets in determining the risk and return profile of the industry. To better understand the real criticality of the cost variable, a comparative analysis is advisable, to identify the cost frequency distributions in the two markets investigated, and especially to examine whether differences in the availability of capital in the two backgrounds exist, and consider the implications of the result.

Therefore, an additional research question, strictly linked to the previous ones, is the following:

*3. Are the cost frequency distributions comparable in the two contexts analysed?*

Production cost is a disputed variable, and the gap between the two contexts in relation to this variable – reported by numerous studies – makes production budget an extremely controversial topic for researchers delving into the risk and return trade-off of the US and Italian film industries. Although numerous, systematic investigations have been

carried out to establish the relationship between cost and profitability in the industry, as cited in the previous sections, a comprehensive study on the impact of the different level of costs on the risk and return profile of films is not available yet. For this reason, an additional aspect that the empirical analyses of this thesis deals with is to understand how the cost size – that is, the allocation of different film budget categories – can affect the results of companies in terms of risk and return trade-off, and hence shape the risk environment in the different contexts.

Therefore, a research question the thesis seeks to answer is the following:

*4. To what extent does mean production cost relate to the results in the two contexts?*

More specifically: *Is the production of lower budget films always less risky than high budget ones?*

The answers to the previous research questions make it is possible to establish the relationship between cost and revenues, the relationship between cost and rates of return, and the role of production costs in determining profitability and variance in the two contexts. Based on these outcomes, analyses of the industries' risk profiles can be made, as well as of possible discrepancies, according to the specific contexts examined.

Therefore, a final research question concerning this section is the following:

*5. Can a common pattern of risk and return trade-off behaviour be identified in the two contexts, US and Italian?*

### ***State support***

The final area of discussion is the significance of public subsidy in explaining the risk and return trade-off in some countries.

The Italian State and the other European countries competing with the US need to provide financial support for their film industries (Perretti, Negro, 2003). This does not occur in the United States.

The first question is therefore easy to pose:

*6. Why is state support for the film industry justified in the case of Italy and not in the case of the US?*

On the one hand, in contrast to the economic autonomy of the US industry, the Italian and European subsidy regimes are necessary to financially support the film industry. On the other hand, subsidies should be given to films “provided that we refer to those movies that can be considered a form of art” (Bagella, Becchetti, 1999, page 238). During the time span when the films analysed were produced, the two principal justifications for the existence of a subsidy regime in Italy are that the productions are “national produced films”, that is, produced or co-produced by Italian companies, and “characterised by cultural content”. From this angle, the subsidy policy can be regarded as an instrument to bridge the financial gap between survival and extinction that continues to threaten the companies operating in the industry (Broche, Chatterjee, Orsich, Tosics, 2007). Although in North America the film industry is basically regarded as a business like any other activity, in Europe it is regarded as a merit good that the State considers it necessary to support irrespective of the potential financial returns (Frey, 2003).

Given these assumptions, the main result this section seeks to establish is the real level of financial efficacy of public subsidies in supporting the Italian film industries. While there are numerous qualitative studies of the debate concerning the soundness or

inappropriateness of public subsidies, well grounded statistical investigations to understand their financial worth are nearly absent, even though a study by Bagella and Becchetti (1999) of an Italian dataset shows that the net impact of subsidies on the total number of cinemagoers “is irrelevant”.

Accordingly, the main research question to be answered in this part is clear:

*7. How efficiently does state support for Italian film production bridge the gap in financial performance between the Italian film industry and that of the US?*

By combining the quantitative values obtained by answering the previous questions with the qualitative observations that can also be made, the thesis tries to answer a further research question:

*8. Is the subsidy regime effective in developing and supporting cultural identity, thereby enhancing the prestige of the society as a whole?*

To empirically answer these main queries this work investigates the financial functioning of the Italian film industry. Based on the Italian dataset presented, nine annual populations, corresponding to the films produced in each of the nine years studied, were set up to include all the movies that obtained subsidies during each year, in order to analyse the economic effectiveness of public aid. A comparative analysis of the non-subsidised films in the nine annual populations was then conducted. This made it possible to understand the logic underlying the public financing and the categories of companies that resort and those that do not resort to state support.

So, an important research question needs to be posed:

*9. What kinds of firms do resort to public aid, and what are the implications of the answer?*

The answer to this, together with those given about the financial effectiveness of public support, made it possible to understand whether public subsidy is a useful instrument for the support and development of the national film productions, or, from a purely financial perspective on economic survival, an indispensable or an unneeded (and possibly harmful, because of moral hazard) form of aid. Apart from the financial perspective, some qualitative observations can also be made as to whether the subsidy regime is really able to contribute to developing and supporting cultural identity, and enhancing the prestige of the society as a whole.

Following the empirical investigation of the limitations of the risk and return trade-off in the Italian film industry, the last research question is part of another ambitious project to be presented to the competent authorities.

Based on the empirical results obtained and their implications, the final question to answer would be:

*10. Is it possible to work out a new framework to deal with the issue of subsidies that the Ministry of Cultural Heritage could submit to the government, which could constitute a more efficient system to finance, manage and stimulate the Italian film industry?*

This final question is the most demanding and stimulating one, since it is designed to improve the present management of the financial system of a crucial industry in one of the most important European countries. At the time the data were collected, a strong relationship was established with the managers of *Cinecittà*. There subsequently emerged a mutual desire to tackle the weak points of the Italian film industry. This can form the basis for improving the current financial management of the Italian film industry.

## **Structure and themes addressed**

The thesis is organised in nine chapters, including this Introduction. The structure and the main themes addressed are indicated below.

Chapter 2 (“The Film Industry: Overview and Key Issues”) presents the film industry. This part uses information as well as descriptive analyses and commentary, moving from a global to a European/Italian perspective. A comparative analysis of the Italian, European and the US film industries is carried out by investigating the main industry key variables in the different markets, for the years from 1995 to 2006. Industry variables such as number of films produced, movie theatre admissions, box office revenues, ticket price, number of screens installed, and production costs of films in the US and in Europe are examined to set in the right context the results that are identified in the empirical analyses of the thesis. Then, some of the previously investigated variables are analysed specifically for the European market only, in order to establish the relative status of the Italian film industry. In this perspective the evaluation of the level of dependency on foreign productions is carried out by analysing the admissions in the European and US movie theatres through a breakdown by origin of films. This last analysis makes it possible to gain an insight into the domination of US productions in the worldwide film markets.

Chapter 3 (“Review of Literature”) surveys the available literature, through an extensive analysis. It is divided into two parts.

The first part is about theoretical approaches to analysing the film industry and film subsidy, contextualizing the economic outlook of the film industry. In this perspective,

the film is first analysed for its features as a durable product in contrast with non-durable goods, i.e., the performing arts (concerts, dance, theatre and opera), the visual arts (painting and sculpture), and the fashion parades. Through this analysis, some characteristics emerge that prove to have a crucial role in the following empirical analyses.

Analysing film as a subset of the entertainment industry reveals major characteristics that distinguish this product. Among these, the “nobody knows” rule (De Vany, 2004, page 71) is shown to be critical to many of the analytical outcomes generated in this study. This concept allows us to understand why the forecasting the economic performance of films is an extremely hazardous business.

Substantial emphasis is placed on technical matters in the analysis of risk-return and subsidy, particularly to describe how finance deals with the relationship between risk/uncertainty and funds devoted to an investment, and how risk and return are technically measured.

The second part of this chapter addresses the empirical literature, through a systematic review of empirical investigations, with tables and commentary on the uniqueness of studies and overlapping findings. First, this survey examines public policies and subsidies. It must be noted that while numerous empirical studies have been conducted on the risk and return trade-off in the film industry, investigations of subsidy and state support to the sector are more limited. In this perspective, the essential points of the debate mainly concern the aesthetico-ethical and economic rights and wrongs of financing movies through public money, and at a more wide-ranging level, researchers have tried to discuss the justification of public subsidy of the arts in general, and then of

film production in particular. A final topic debated in the literature concerns the types of public aid to the film industry.

Second, and in contrast, the survey finds that empirical analyses to estimate film profitability and the risk-return of the film industries are substantial and diverse. In this respect, the survey identifies the most important contributions on different topics such as the frequency distributions of revenues, the effect of the reception of films by ‘early’ viewers in shaping the uncertainty of the industry, the role of superstars, production budgets and other “recognising signs” in determining the profitability of productions, and the frequency distributions of profits, losses, and rates of return. Chapter 3 ends with concluding remarks highlighting the key literature and themes informing this work.

Chapter 4 (“Methodology”) introduces the empirical work of this thesis, through a full exposition of the techniques used to address the research questions introduced in Chapter 1, Introduction.

The chapter is divided into two parts, the first dealing with the methodology used for any specific research question relating to risk and return trade-off, and the second with the methodology used to analyse public subsidies. The analytical aspect of the research work is based primarily on quantitative data, although a qualitative data process is applied when investigating the efficacy of the Italian state subsidy for films. The work is essentially quantitative because it principally uses data analysis procedures, such as graphs, tables, statistics, that give rise to, or use, numerical data.

A full exposition of the techniques used to cope with any specific research question is provided in the chapter, with considerations from a critical perspective. At the end of

each research question, a recapitulatory table is provided to summarise the main methodologies used to satisfy the specific research question posed.

Chapter 5 (“Data”) introduces the data sources used in this work, and is broken down into three parts.

In the first section (“Background history of the subsidy allocation”, par. 5.1) the background history of public subsidy in the Italian film industry, and documentation of the subsidy allocation process referring to the 1995-2003 time span analysed in the thesis is described and discussed. In order to do this, the information included in this paragraph refers to all the subsidies assigned by the Italian State to the Italian film industry during the period 1995-2003.

The second section (“Sources, assembly, construction, cleaning, dimensions of data”, par. 5.2) describes sources, assembly, construction, cleaning, and dimensions of data used in the thesis, with reference to both the US and the Italian context. However, the focus is mainly on the Italian data, since the point of the US data is to provide a contrasting business model and industry structure. For both environments, the paragraph introduces the raw data, explains the data assembly, construction, cleaning, and selection procedures, examines the dataset dimensions, and presents the final datasets and sub-samples created. The final US dataset consists of 1,636 films released onto the US movie theatres between 1988 and 1999, while the Italian final dataset is completely new, comprising 566 films released in the Italian movie theatres between 1995 to 2003 derived from the archives of Cinecittà.

The third section of the Data Chapter (“Full descriptive analysis”, par. 5.3) conducts a full descriptive analysis of data used in the thesis both for the US and the Italian context.

Depending on the category of data examined, the section is organised in five sub-sections: 1) Dataset and market description: this explores the degree of market concentration. The US context is described first to provide a contrasting business model and structure to the Italian one, which is then fully analysed. 2) Frequency distribution of cost: this presents a descriptive analysis of cost, considering both the total populations of the US and Italian datasets, and the populations of the main national companies. 3) Frequency distribution of revenue: this analyses the frequency distribution of the box office revenues in the US and Italian movie theatres. 4) Frequency distribution of rates of return: this describes the rates of return frequency distribution of the US and Italian datasets. 5) Descriptive analysis of subsidies: this includes a descriptive analysis of subsidy data used in the Italian context, whose financial efficiency is analysed and discussed in the following “Result Chapter”.

Chapter 6 (“Results”) shows the results from the empirical analyses conducted. It is broken down into two parts, the first detailing the results on risk and return trade-off, the second presenting the results on public subsidies.

In the first part, a section is devoted to revenue analysis, by indicating for the US context first, and then the Italian one, the results in terms of: (a) frequency analysis of revenues of annual populations; (b) frequency analysis of revenues of the whole populations; (c) relationship between costs and revenues; (d) plot diagrams of costs to revenues of the populations. These scatter diagrams are further augmented in Appendixes 1 and 2 at the end of thesis, including twelve and nine plot diagrams of costs to revenues for the twelve (US) and nine (Italian) annual populations, respectively.

A second section deals with rates of return analysis. It examines the results found in terms of: (a) annual distributions of rates of return of the datasets; (b) distribution of rates of return of the whole datasets; (c) distribution of rates of return of the main national companies; (d) relationship between costs and rates of return in the two backgrounds; (e) plot diagrams of costs to rates of return of the populations. These scatter diagrams are further integrated in Appendixes 3 and 4 at the end of thesis, including twelve and nine plot diagrams of costs to rates of return for the twelve (US) and nine (Italian) annual populations, respectively.

Then the results on cost distributions are shown, highlighting the different outcomes in terms of frequency distribution of cost in US and Italy, and after that the possible relationship between mean production budgets and the financial results, to identify whether investing in low budget or high budget films is a sensible strategy to reduce the overall corporate variance.

The results obtained for the previous research questions allow a further question to be answered: can a common pattern of risk and return trade-of behaviour be identified in the two contexts, US and Italian? As noted in the methodology chapter, answering this last question makes it possible to pull together the strings of risk and return behaviour in the film industry, Therefore, using the results obtained for the previous four questions, it is possible to provide an exhaustive answer concerning the risk and return trade-off behaviour in both the US and the Italian contexts.

The second part of the chapter aims to answer the questions about “State support” in the Italian film industry. A first section links to chapter 3 and chapter 5, in which qualitative answers on the justification of state support in Europe compared to the inapplicability of

such justifications to the US industry are provided. The following three sections provide the key to the State support part, and an answer is given regarding the financial effectiveness of Italian State support to the national film industry, based on the reliable datasets constructed. In the light of these results – and the qualitative observations made in the Literature and Data chapters – a discussion about state support results is conducted to get an answer on the effectiveness of the subsidy regime in developing and supporting cultural identity, and thus enhancing the prestige of the society as a whole.

A subsidiary research question is then answered, by examining the kinds of firms that resort to public aid. The result of this examination indicates whether possible free riding behaviours can be observed in the market, and gives some measure of the level of efficiency of the subsidy allocation process in Italy.

Finally, the proposal to work out a new framework to deal with the issue of subsidies is presented at the end of the chapter. This part constitutes the basis for the following chapter, aimed at setting out a more efficient system to finance, manage and stimulate the Italian film industry, also by a thorough investigation of the regulatory reforms carried out as from the first year subsequent to the time horizon analysed in the work.

Chapter 7 (“Policy Implications”) analyses the implications of the empirical analyses presented in the chapter 6, and outlines the possible plans of action that can be implemented to improve the present state of affairs in the Italian film industry. In particular, the chapter emphasises that the results obtained in chapter 6, and the policy implications presented in this chapter are contextualised by the 1995-2003 period chosen for analysis, and thus the regulatory framework in force at that time. In addition, it also tries to understand what happened afterwards. For this reason this chapter

assesses the possible evolution that could occur in the following years, in the event of some regulatory reforms changing the setting, and facilitating the analysis of policy implications. The new regulatory framework in force since 2005 is hence analysed in order to address adequately the suggestions provided in the chapter, and comment on the policy implications in the light of the new normative scenario.

Based on the results found, and on the new regulatory setting identified, the second part of the chapter puts forward the idea for a new financial approach, by stressing the limitations that still distinguish the arrangement of the Italian film industry, and the possible improvements that can be made. This part essentially constitutes the answer to the last research question posed in the Introduction.

Chapters 8, (“Revisiting the Research Questions”), reassesses the research questions posed in the introduction as motivation for the work, and examines how they have been addressed. It considers the results of the empirical analyses and observes the extent to which they confirm the literature, challenge it, or necessitate the need for further study.

Chapter 9, (“Conclusions”), brings together the themes of the thesis.

**2**

**The Film Industry:  
Overview and Key Issues**

## **2.1 Introduction**

To set the results in the right context, a comparative analysis of the Italian, European and the US film industries needs to be made. In this chapter the key variables of the US, European and the Italian markets are examined for the years 1995 to 2006. First, this comparison is made moving from a global to a European and Italian perspective (section 2.2, and related sub-sections), then considering the Italian standpoint versus the European one (section 2.3, and related sub-sections).

## **2.2. From a global to a European perspective**

In the following sub-sections the main economic key variables concerning the film industry are analysed by comparing the US context to the European context as a whole. The statistics for Italy are also provided to give a first impression of the Italian film industry within the European market, although the specific role of the Italian Cinema in this perspective will be fully examined in section 2.3 and related sub-sections.

### **2.2.1 Population**

The first variable to be considered is population. A direct comparison of the US and Italian markets would not be useful, because of the disproportionate difference in the numbers of potential filmgoers in the two markets. Europe and the US are more appropriate economic units for comparison. In this section, when discussing Europe the

reference will be to the cluster of 25 countries composing the European Union<sup>1</sup>. As of 1<sup>st</sup> January 2008, the United States has 303.1 million inhabitants<sup>2</sup>, the 25 countries belonging to the European Union have an overall population of 468.2 million inhabitants<sup>3</sup>, while the inhabitants of the countries forming EU-15 amount to 321.5 million. Italy's population is 59.5 million – that is, 19.7 per cent of the US population, 12.7 per cent of the EU-25 population, and 18.5 per cent of the EU-15 population. The rising trend in population has been steady in both contexts, with an average increase of 20-30 million of people per decade in both areas. The US companies achieve excellent results in terms of box office revenues – as will be proved in chapter 6 – despite its population (and hence potential local audience) being lower than that of Europe. However, a key fact in this success is that the US positive results reported in this thesis are based on the North American market only, but the potential audience for American films is much wider, extending beyond the US borders to virtually every possible market, whereas the sphere of trading activity of most Italian and European films tends to be limited to the local markets. In this connection, the data in paragraph 2.3.9 provide telling evidence of the dominance of the US industry.

The statistics of the growth trends of the populations of the United States, Europe, and Italy over an eight-year period are presented in Table 2.1.

---

<sup>1</sup> The European Union in 2008 is made up of 27 countries, Bulgaria and Romania having joined it on 1<sup>st</sup> January 2007. The data analysed refer to 2006, when the EU was made up of 25 countries members, and in detail: the fifteen countries originally composing EU-15 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom), and the 1 May 2004 accession countries: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia and Slovak Republic.

<sup>2</sup> [www.census.gov](http://www.census.gov)

<sup>3</sup> <http://epp.eurostat.ec.europa.eu>

Table 2.1 – Population (in millions) of the United States, Europe, and Italy 1999-2006

	1999	2000	2001	2002	2003	2004	2005	2006
USA	272.700	275.600	276.800	280.500	288.500	293.500	298.200	299.000
Europe	375.945	377.187	378.701	380.446	382.581	384.831	387.193	389.545
Italy	56.913	56.929	56.967	56.993	57.321	57.888	58.462	58.751

Source: European Cinema Yearbook, 2007.

Notes: Data referring to Europe includes the EU-15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom, together with four non-EU countries: Iceland, Liechtenstein, Norway, and Switzerland.

In the following sub-sections of paragraph 2.2, when mentioning Europe the author refers to the 25 Member States constituting the European Union in 2006 – unless otherwise indicated.

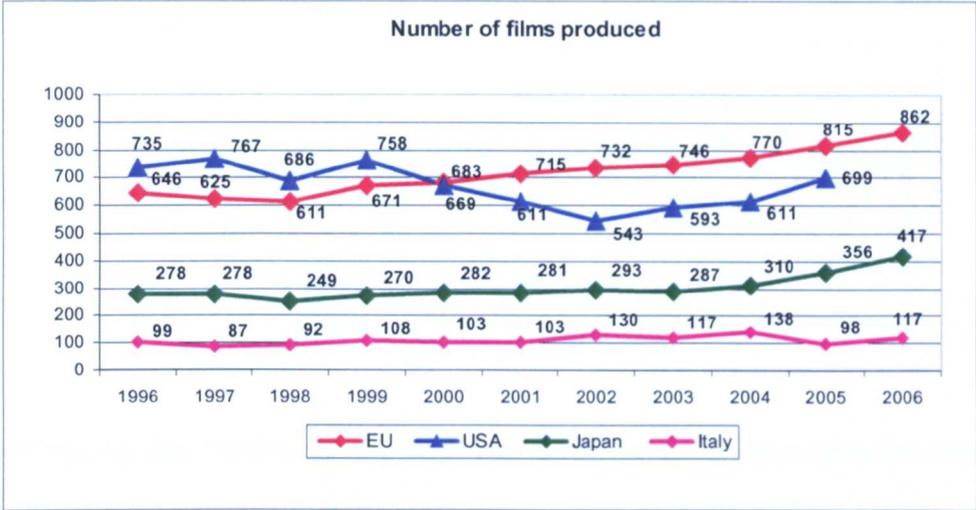
### 2.2.2 Films produced

On the basis of the number of films produced in the two geographical areas, the European film market appears to be highly productive. Figure 2.1 shows that after 2000 the number of films produced in Europe exceeded that of USA, reversing the previous situation. Over the eleven years 1996-2006 Italian companies produced on average 110 films per year, about one in eight of all the European productions. For a ‘non-Western’ comparison the output of Japan has been included in the diagram. With a population of about 130 million people, Japan’s output is about four times that of Italy, and half that of Hollywood.

No sufficient data for each variable investigated in this chapter are available for the Indian industry (‘Bollywood’) during the analysed period. However, just to make an interesting comparison, consider that in 2001 Bollywood produced 1,039 films, generating worldwide revenues of \$1.3 billion versus €51 billion generated by

Hollywood movies. In addition, the average production cost per Indian film was about \$1.5 million against €47.7 million per US production (see Figure 2.9). Nonetheless, in 2001 the annual growth rate of Hollywood was 5.6 per cent versus 12.6 per cent of Bollywood (Business Week, 2002).

Figure 2.1 – Number of films produced: US vs. EU-25, 1996-2006

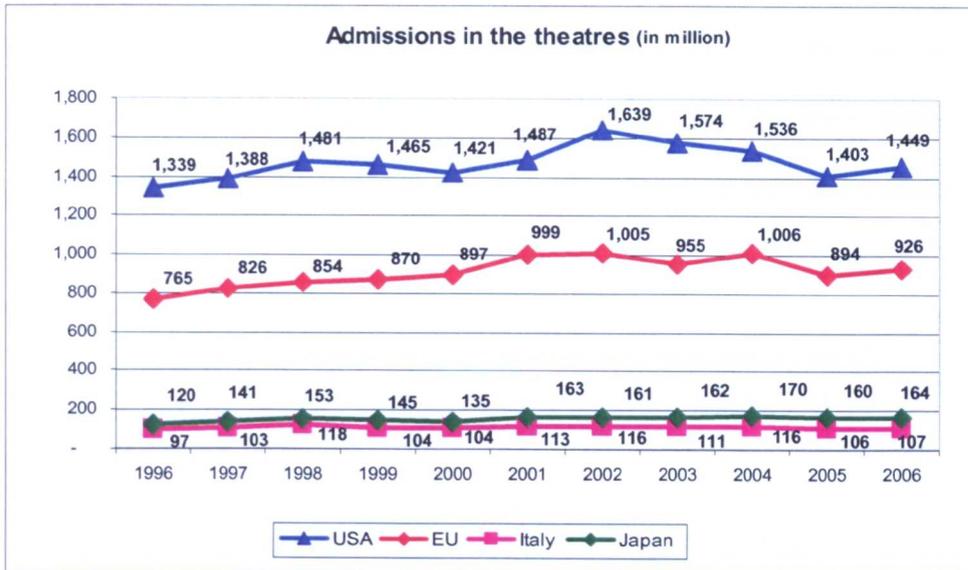


Source: Focus 2007 - World Film Market Trends

**2.2.3 Movie theatre admissions**

While European companies produce a number of films comparable to that of their American counterparts, their home markets differ dramatically in size. This is presented in Figure 2.2, where it can be seen that the US admissions are some 49 to 75 per cent larger than those of Europe (EU-25) between 1996 and 2006. At the beginning of the period considered, the admissions in Europe are 57 per cent of those recorded in USA (765 million vs. 1,339 million in 1996), rising to 67 per cent in 2001; the number of admissions in Europe is always markedly lower than in the US. The admissions in the Italian theatres are of a lower order of magnitude, even though they show a perceptibly upward trend over the years (from 96.5 million in 1996 to 107.3 million in 2006).

Figure 2.2 – Admissions in the theatres: US vs. EU-25



Source: Focus 2007 - World Film Market Trends

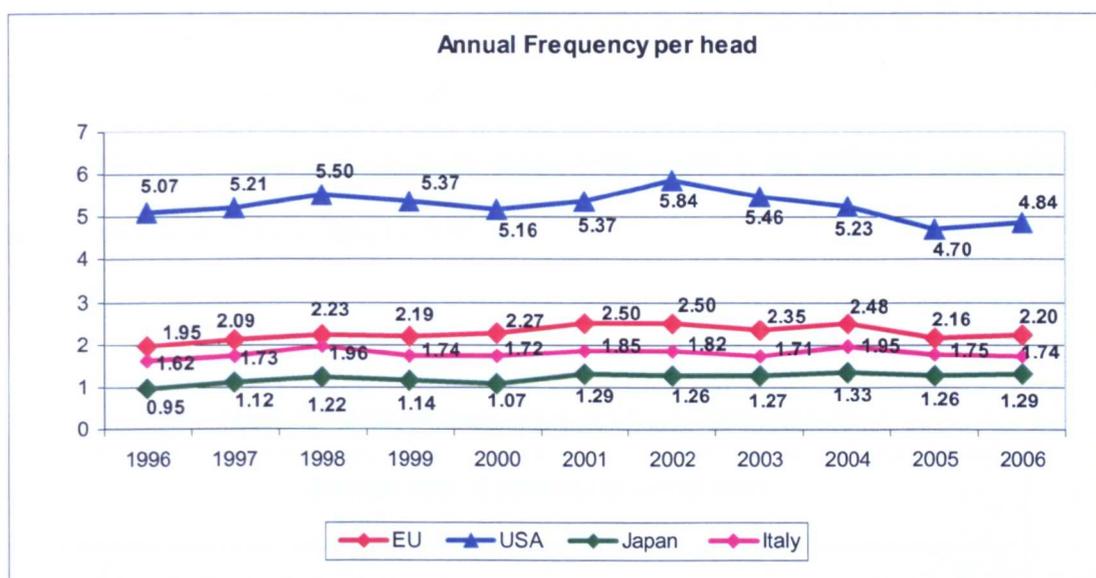
The admissions data need to be related to two main variables: the population (analysed at par. 2.2.1), and the mean price of tickets in the theatres (analysed at par. 2.2.5). Taking population into account, the admissions outcome for Europe is not satisfactory, as it is obtained from a larger potential audience than that of the US. The mean annual admissions per inhabitant – frequency per head – are explored in the next section, paragraph 2.2.4.

#### 2.2.4 Annual theatre attendance frequency per head

As hinted at in the previous section, the higher frequency of attendance of US spectators is even more emphasised if compared to the number of inhabitants of each geographical area considered. In fact, by looking at Figure 2.3, one can infer that annually in the US there are about five attendances per head, while in EU-25 there are from 2 to 2.5

attendances per head. Italian attendances are lower, not attaining two attendances per head. The picture that emerges from the data exhibited in Figure 2.3 is even more striking than that deriving from the absolute data of admissions in Figure 2.2, since it is possible to deduce that a much stronger theatrical demand for films characterises the US context, while Europeans are not so inclined to movie theatre attendance as the Americans.

Figure 2.3 – Annual theatre frequency per head: US vs. EU-25



Source: Focus 2007 - World Film Market Trends

### 2.2.5 Ticket price

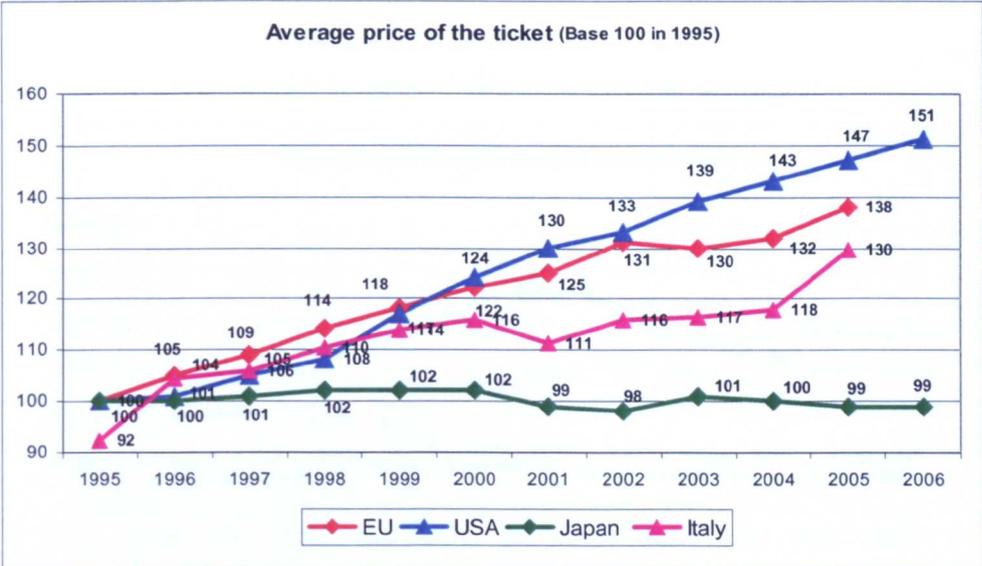
Whereas theatre attendances differ considerably between the US and Europe, ticket prices do not, as it can be seen in Figure 2.4. From this it follows that the US market is a significantly larger revenue generator. On an indexed mean base price of 100 in the first year analysed, from 1995 to 2006, the price paid by the US filmgoers is 125 means of

means, against 120 means of means by their European counterparts. Accordingly, ticket price is not a key variable in determining the highest attendance of American viewers in the local theatres. Moreover, taking into consideration the last years of analysis, a US filmgoer pays even more than a European one to watch a movie in the theatres, but this does not result in diminished US competitiveness in relation to the European market.

The trend of ticket price in Italy almost matches the trend observed in the other European countries, although the ticket price an Italian filmgoer must pay is a little cheaper than the mean price of the other European countries: in 2006, €5.76 in Italy compared with €5.97 in EU-25 as a whole <sup>4</sup>.

Figure 2.4 shows the trend of the indexed mean ticket prices in the different geographic markets, from a base price of 100 in 1995.

Figure 2.4 Indexed mean price of tickets: US vs. EU-25



Source: Focus 2007 - World Film Market Trends

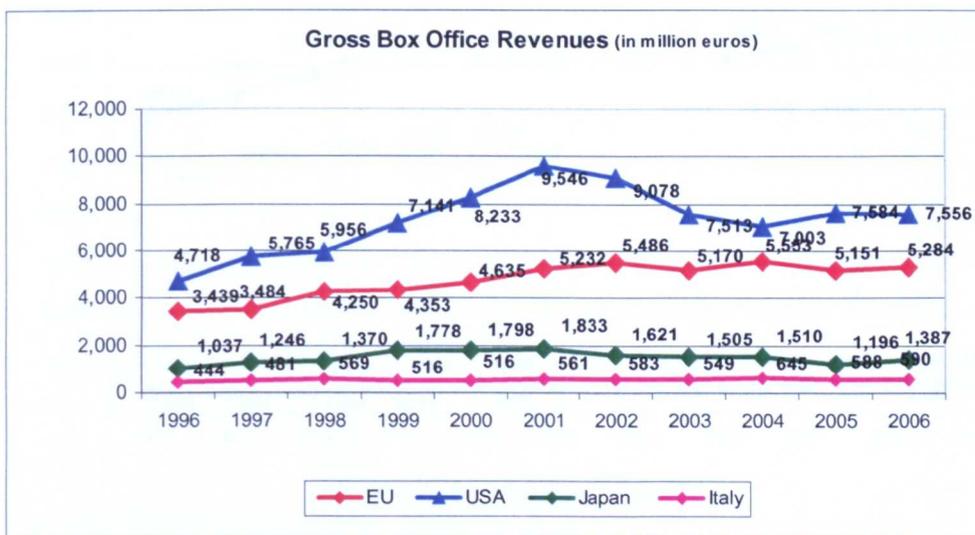
<sup>4</sup> European Cinema Yearbook, Media Salles, 2007.

### 2.2.6 Gross box office revenues

The analysis of box office revenues from ticket sales corroborates the higher economic strength of the US market. Over eleven years, the box office takings recorded in the US theatres are always markedly higher than those generated in the European theatres. The values shown in Figure 2.5 are in absolute values (expressed in million euros), thus the higher revenues generated in the US market become even more significant if the lower population – and hence the lower potential attendance – is taken into account.

The annual mean gross box office takings in the US theatres from 1996 to 2006 were about 7,281 million euros, compared with a mean of 4,730 million euros recorded annually in Europe in the same period – equal to only 65 per cent of the American revenues. More than one tenth of the European revenues are generated in the Italian theatres (mean box office revenues of 549 million euros per year). Again, Japan, which recorded mean box office takings of 1,480 million euros per year over the eleven years, is represented in Figure 2.5.

Figure 2.5 – Gross box office revenues: US vs. EU-25

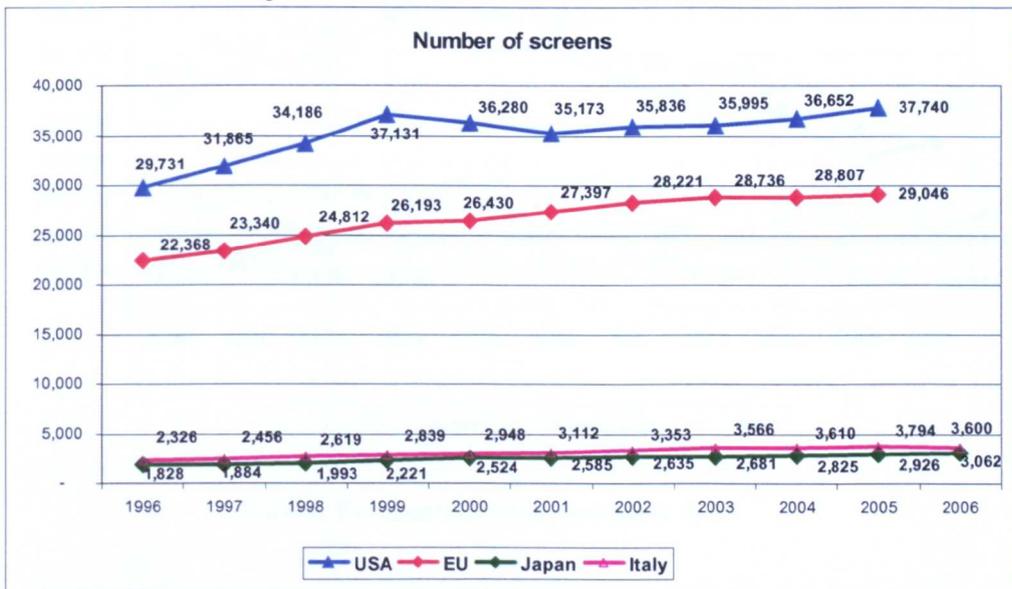


Source: European Cinema Yearbook, 2007

### 2.2.7 Number of screens

Figure 2.6 provides information about the number of theatre screens in the various markets. Both in the US and Europe (EU-25) the number of screens has increased steadily, growing to 37,740 screens in the US in 2005, against 29,046 in Europe. Even without specifying the seating capacity of screen auditoriums, these data are consistent with the lower attendance results observed in Europe, and serve as evidence of the smaller revenue potential of the European market. Tellingly, the US has a significantly higher number of screens despite being less populated, implying a much higher consumption of films per caput. For its part, Italy has roughly one tenth of the European screens, which is low in relation to the fact that it makes about one eighth of the films produced in Europe (See Figure 2.1). The following graph shows the investment trend in terms of screens installed in the different geographic areas.

Figure 2.6 – Number of screens: US vs. EU-25

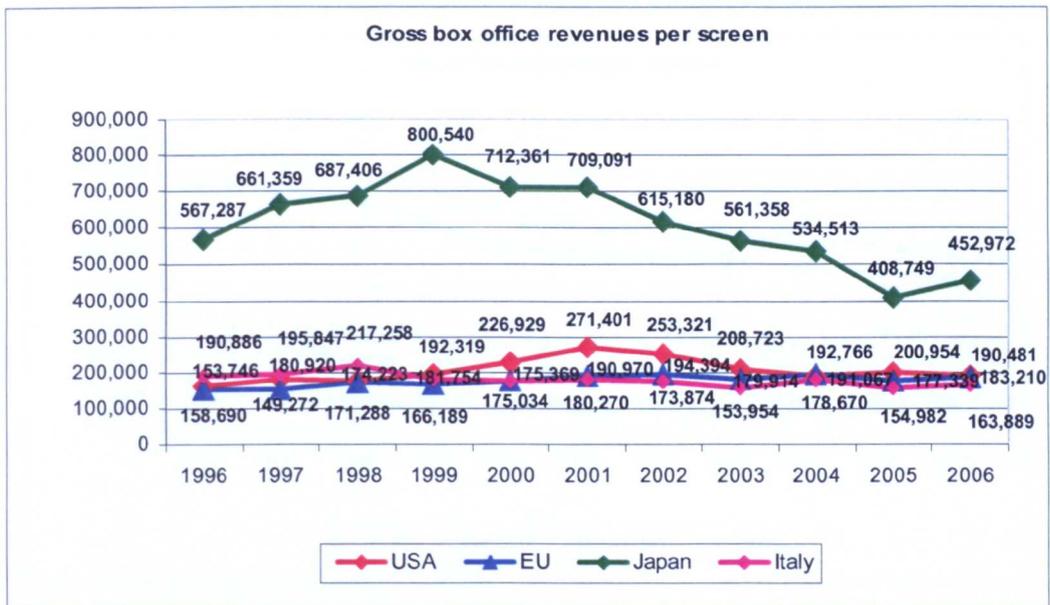


Source: Focus 2007 - World Film Market Trends

### 2.2.8 Gross Box office revenues per screen

The analysis of the box office revenues in relative terms, by comparing them to the number of screens installed in each macro-area, depicts markedly similar trends in the US and Europe, as represented in Figure 2.7. Slightly better results can be observed for the US market, where the mean box office takings per screen over the time span analysed are equal to 204,457 euros against the mean 175,860 euros of the European market. The Italian mean revenue per screen of 178,765 euros is in line with that of Europe. Figure 2.7 also shows that the limited box office revenues generated by Japanese theatres are substantial in relative terms, because of the low number of screens installed throughout the Japanese territory.

Figure 2.7 – Gross Box office revenues (euros) per screen: US vs. EU-25

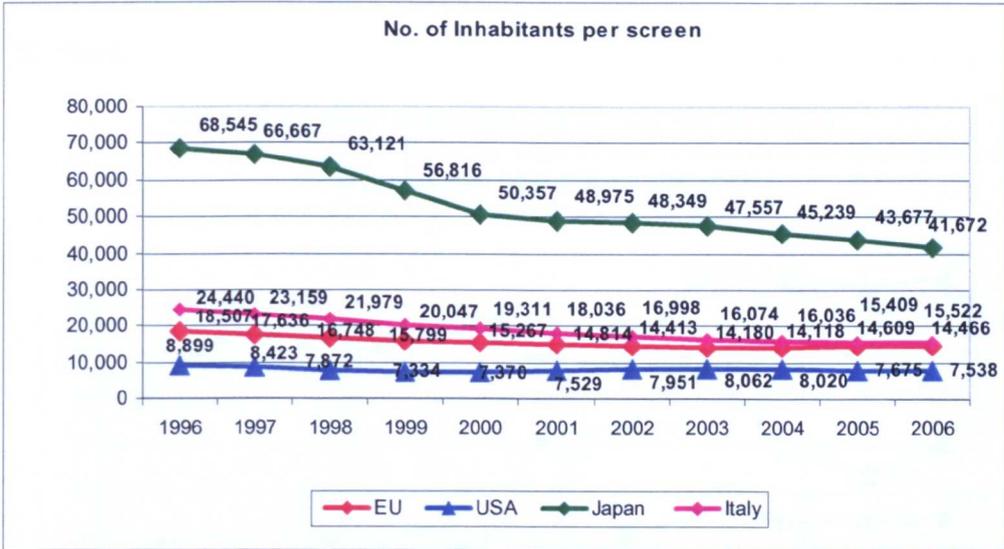


Source: European Cinema Yearbook, 2007

**2.2.9 Number of inhabitants per screen: USA and Europe**

This ratio is a proxy for the accessibility to screens for the citizens of the different geographic areas. The visual representation of Figure 2.8 needs to be correctly interpreted, since the best performers for this variable are those with low values recorded on the y-axis. So, one screen for every 7,500-8,900 US inhabitants indicates a better provision than the one screen for every 14,500-18,500 European inhabitants, which in turn is better than the one screen for every 15,500-24,400 Italian inhabitants. However, there is a distinctive gap between the relatively closely grouped US and European contexts and other geographical areas, such as Japan, which has only one screen for every 41,700-68,500 inhabitants.

Figure 2.8 – Number of Inhabitants per screen: US and EU-25

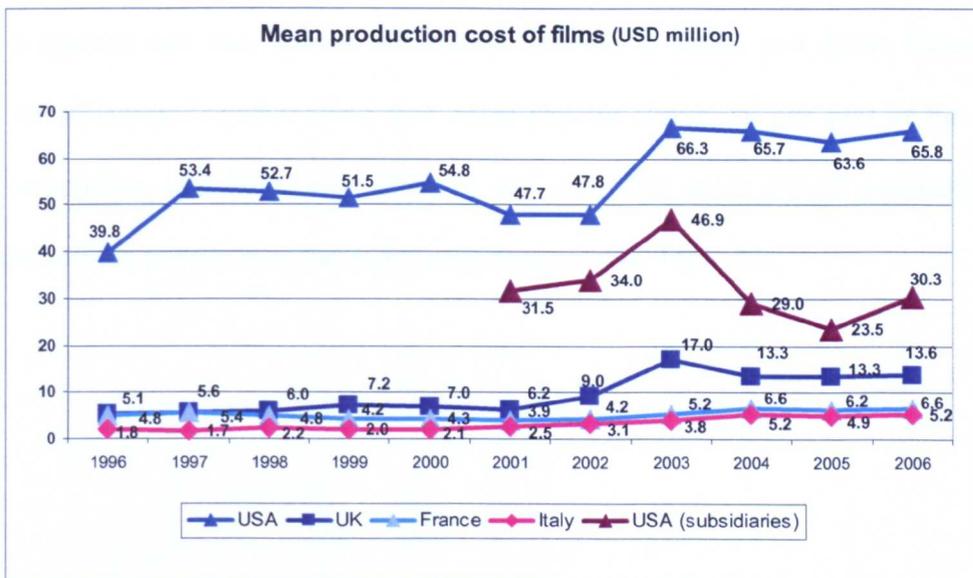


Source: Focus 2007 - World Film Market Trends

### 2.2.10 Production costs of films

From Figure 2.9 it is apparent that the most significant difference between US and European markets lies with the production costs of their films. As has been shown, differences in the size of audiences, box office revenues, and number of screens are significant. However, they are not so striking as the differences in production costs. Just considering 2006, the mean production cost for a US movie was \$65.8 million, which was 4.84 times the mean of \$13.6 million for the UK, 9.97 times the mean of \$6.6 million for France, and 12.65 times the mean of \$5.2 million for Italy (Focus 2007, World Film Market Trends, 2007). In addition, from 1996 the increase in production budgets in the three European countries has been limited in absolute values, as the upward trends shown in Figure 2.9 indicate – even though the compound growth rates would probably demonstrate a larger increase in production costs of the European films. Also, the fund allocation for US film production has shown an erratically upward trend over the years.

Figure 2.9 – Mean production cost of films: US vs. EU-25



Source: Focus 2007 - World Film Market Trends

## **2.3 From a European to an Italian perspective**

This section will analyse the data concerning the European market only, in order to establish the relative status of the Italian industry. For the sake of clarity, and in recognition of their superior economic importance, the analysis in this section will focus on the data of the most developed film industries in Europe – those of the countries of EU-15, whereas the analysis in section 2.2 was conducted with reference to the countries of EU-25<sup>5</sup>.

### **2.3.1 Population**

First, the population trend of the 15 European countries taken into consideration is presented in Table 2.2 (values in thousands), to gain an insight into the potentiality of the different states in terms of possible attendance. It clearly emerges that five countries – those that dominate the European film market, as shown in the next sections – are markedly more populated: respectively, Germany (about 82 million inhabitants), France, United Kingdom and Italy (about 60 million inhabitants each), and Spain (about 41 million inhabitants). Together these five states contain almost 80 per cent of the total EU-15 population, and Italy only about 15 per cent. The mean EU-15 population is about 381 million people over the eight years examined in Table 2.2.

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<sup>5</sup> The 15 countries forming EU-15 are indicated at footnote 1 of this chapter.

Table 2.2 – Population (in million) of the countries of EU-15: 1999-2006

<i>in million</i>	1999	2000	2001	2002	2003	2004	2005	2006	Mean pop.	% on Tot
Austria	7.983	8.002	8.021	8.039	8.082	8.140	8.207	8.266	8.092	2.1%
Belgium	10.214	10.239	10.262	10.310	10.356	10.396	10.446	10.511	10.342	2.7%
Denmark	5.314	5.330	5.349	5.368	5.384	5.398	5.412	5.428	5.373	1.4%
Finland	5.160	5.171	5.181	5.195	5.206	5.220	5.237	5.256	5.203	1.4%
France	58.497	58.749	59.043	59.342	59.856	60.200	62.371	62.999	60.132	15.8%
Germany	82.037	82.164	82.260	82.440	82.537	82.532	82.501	82.438	82.363	21.6%
Greece	10.861	10.904	10.931	10.988	11.006	11.041	11.076	11.125	10.992	2.9%
Ireland	3.735	3.775	3.826	3.900	3.964	4.028	4.109	4.209	3.943	1.0%
Italy	57.613	57.680	57.844	56.994	57.321	57.888	58.462	58.752	57.819	15.2%
Luxembourg	0.427	0.434	0.439	0.444	0.448	0.452	0.455	0.460	0.445	0.1%
Netherlands	15.760	15.864	15.987	16.105	16.193	16.258	16.306	16.334	16.101	4.2%
Portugal	10.150	10.198	10.263	10.329	10.408	10.475	10.529	10.570	10.365	2.7%
Spain	39.724	39.961	40.376	40.851	41.551	42.346	43.038	43.758	41.451	10.9%
Sweden	8.854	8.861	8.883	8.909	8.941	8.976	9.011	9.048	8.935	2.3%
United Kingdom	59.391	59.623	59.863	59.140	59.329	59.700	60.035	60.393	59.684	15.7%
TOT EUR-15	375.720	376.955	378.527	378.354	380.580	383.047	387.193	389.545	381.240	

Source: European Cinema Yearbook, 2007

### 2.3.2 Number of films produced

Table 2.3 shows the number of movies produced in the countries belonging to EU-15.

The figures indicated for each country correspond to the national films, including both major and minor co-productions. A co-production is a film resulting from the joint efforts of two or more production companies based in different countries.

Table 2.3 – Number of feature films produced in the EU-15 countries

	2001	2002	2003	2004	2005	2006
Austria	12	26	20	24	24	34
Belgium	23	27	32	46	36	46
Denmark	27	32	38	33	31	27
Germany	107	117	107	121	146	174
Finland	16	12	14	18	15	16
France	204	200	212	203	240	203
Greece	18	18	23	18	23	21
Ireland	9	3	10	13	12	12
Italy	103	130	117	138	98	117
Luxembourg	0	10	12	11	10	11
Netherlands	28	29	33	28	31	29
Portugal	21	19	21	25	25	34
Spain	107	137	110	133	142	150
Sweden	29	38	36	42	53	46
United Kingdom	83	84	88	75	78	78

Source: European Cinema Yearbook – Media Salles, 2007

As is clearly evident from the table, the Italian industry produces a considerable number of films annually, being the fourth most productive EU-15 country after France, Germany and Spain, and contributing, in 2006, about one eighth of the EU-15 productions as a whole. It is interesting to note that Italy – as well as France, Germany and Spain – produces more films than the United Kingdom. However, output volume is not a reliable guide to competitiveness in the international market, as will be shown in the next sections.

### **2.3.3 Movie theatre admissions**

As has been described in Figure 2.2, EU-15 compares unfavourably with the US, in respect of admissions.

Table 2.4 lists annual admission figures in the movie theatres of EU-15. It is clear that the leading five national markets greatly outdistance the others. It is notable that although the United Kingdom produces fewer films than the other four (France, Germany, Spain, and Italy, see Table 2.3), it registers the highest number of spectators, after France. This could be linked to similarities in culture and language with the US, making some of their films highly interchangeable in their movie theatres. As for Italy, its numbers are not comparable with those of France and the United Kingdom (see Table 2.4), indeed it is bottom of the group of five by a significant margin. Finally, it must be borne in mind that the figures listed are absolute values, which do not take into account the different attendance potential in each country. For example, the 136.7 million admissions noted in Germany in 2006 can be scaled according to its population of 82.5 million inhabitants, giving admissions per caput of 1.66, whereas the 1.2 million

Luxembourgian admissions and the 480,000 Luxembourgers produce admissions per caput of 2.50. For this purpose, see the data shown in the next paragraph, 2.3.4.

Table 2.4 – Movie theatre admissions in the EU-15 countries (expressed in millions)

	2001	2002	2003	2004	2005	2006
Austria	18.8	19.3	17.7	19.4	15.7	17.3
Belgium	24.0	24.4	22.7	23.0	22.1	23.8
Denmark	11.9	12.9	12.3	12.8	12.2	12.6
Finland	6.5	7.7	7.7	6.9	6.1	6.7
France	187.2	184.2	173.5	194.8	175.4	188.7
Germany	177.9	163.9	149.0	156.7	127.3	136.7
Greece			12.0	12.7		
Ireland	15.9	17.3	17.4	17.3	16.4	17.9
Italy	113.3	115.6	110.5	116.3	105.6	107.3
Luxembourg	1.4	1.4	1.3	1.3	1.2	1.2
Netherlands	23.9	24.1	24.9	23.0	20.7	22.5
Portugal	19.5	19.5	18.7	17.0	15.8	16.4
Spain	146.8	140.7	137.5	143.9	127.7	121.7
Sweden	18.1	18.3	18.2	16.6	14.6	15.3
United Kingdom	155.9	175.9	167.3	171.3	164.7	156.6

Source: European Cinema Yearbook, Media Salles, 2007

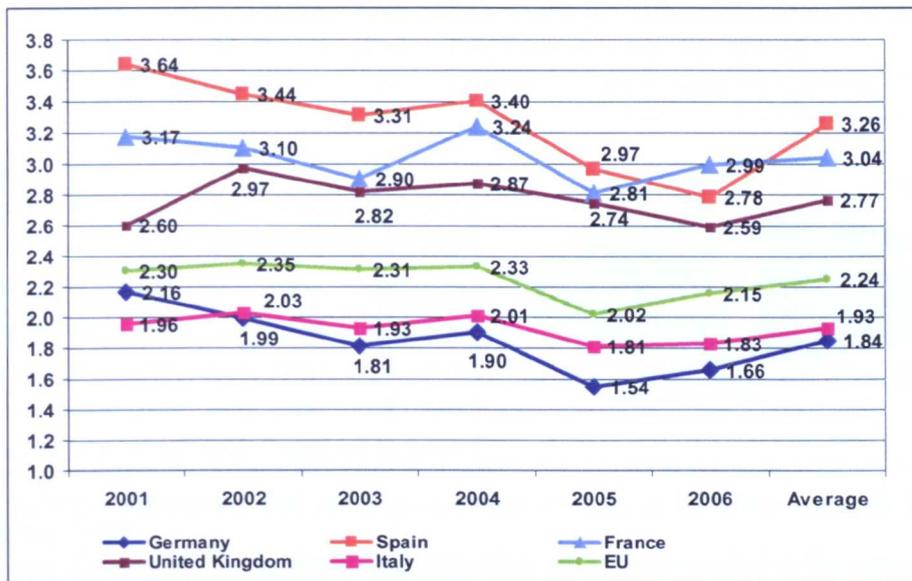
Since it has been clearly established that five countries dominate the European market, in the next sections discrete data for the United Kingdom, France, Germany, Italy and Spain only will be presented, together with the overall values for the remaining EU-15 countries.

### 2.3.4 Annual theatre attendance frequency per head

The absolute number of attendances described in the previous section can be seen from a slightly different perspective if related to the population of each country. From this standpoint, it can be observed in Figure 2.10 that the Spanish are frequent filmgoers – on average 3.6 annual theatre attendances per head – despite the lower value of attendances in absolute terms noted in paragraph 2.2.3. This can be explained by considering that the Spanish population is half the German population and two thirds of

the French, UK, and Italian populations (taken respectively). In contrast, each Italian inhabitant attends national cinemas 1.93 times a year on average, the Germans even 1.84. These two countries' attendances per head are under the EU-15 mean of 2.24, while French and UK theatres record higher percentages of attendance per head in relative terms.

Figure 2.10 – Annual theatre attendance per head: Italy and EU-15



Source: Author's elaboration and processing based on data of European Cinema Yearbook, Media Salles, 2007

### 2.3.5 Gross box office revenues

Data about box office takings recorded in the national movie theatres demonstrate the supremacy of the five mentioned countries in the European economic context. Table 2.5 shows the trend of box office revenues from 2000 and 2006 in the EU-15 zone. It is evident that French and UK theatres are the greatest generators of revenues, at a level that is about double those produced in the Italian theatres. Figure 2.11 depicts the mean annual theatre revenues in the 2000-2006 time span. The figure clearly exemplifies the

importance of the five main countries, which together generate a mean of more than 4 million euros at their national box offices, against less than the mean 0.9 million produced by the remaining EU-15 countries (only 17 per cent of the total mean EU-15 theatre takings). The chart also illustrates the relative weight of Italian theatres, which register a mean just under 0.6 million euros annually as box office revenues, about 11 per cent of the total EU-15 value.

Table 2.5 – Gross box office revenues: Italy and EU-15  
 Figure 2.11 – Mean gross box office revenues, 2000-2006: Italy and EU-15



Source: Author's elaboration and processing based on data of European Cinema Yearbook, Media Salles, 2007

Notes: Table 2.5 exhibits the gross annual box office revenues recorded in the national movie theatres from 2000 to 2006. "EU" indicates total annual value in the countries belonging to EU-15. Figure 2.11 shows the mean gross box office revenues for the period 2000-2006 (both in absolute values and percentage) recorded in the cinemas of the five leading European countries and the other EU-15 countries.

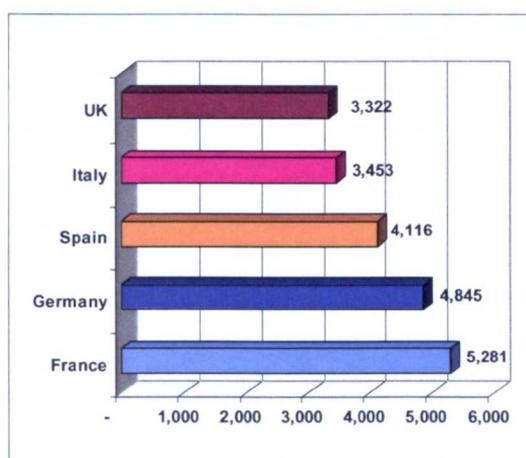
### 2.3.6 Number of screens

More than 80 per cent of screens in use in Europe are located in France, Germany, Spain, Italy or the United Kingdom. Table 2.6 illustrates the number of active screens in the EU-15 countries from 2000 to 2006, and unexpectedly it emerges that United Kingdom has a substantially lower number of screens than countries such as France and Germany. Italy ranges close to United Kingdom, as can be seen in Figure 2.12, which

shows the mean number of screens in use during the 2000-2006 period in the five cited countries and in the other EU-15 countries. It is also interesting to observe that a mean of less than 5,000 screens are installed in the EU countries other than the five indicated ('Others EU' in the Table), corresponding to only 18.7 per cent of the mean number of screens – 25,852 – in the whole EU-15 zone.

Table 2.6 – Number of screens: Italy and EU-15  
 Figure 2.12 – Mean number of screens, 2000-2006: Italy and EU-15

	2000	2001	2002	2003	2004	2005	2006
France	5,110	5,241	5,257	5,289	5,314	5,393	5,364
Germany	4,783	4,792	4,868	4,868	4,870	4,889	4,843
Spain	3,556	3,747	4,001	4,274	4,497	4,401	4,339
Italy	2,948	3,112	3,353	3,566	3,610	3,794	3,785
UK	3,039	3,248	3,402	3,433	3,342	3,356	3,431
Others EU	4,630	4,772	4,742	4,839	4,880	4,987	5,000
EU	24,066	24,912	25,623	26,269	26,513	26,820	26,762



Source: European Cinema Yearbook, Media Salles, 2007

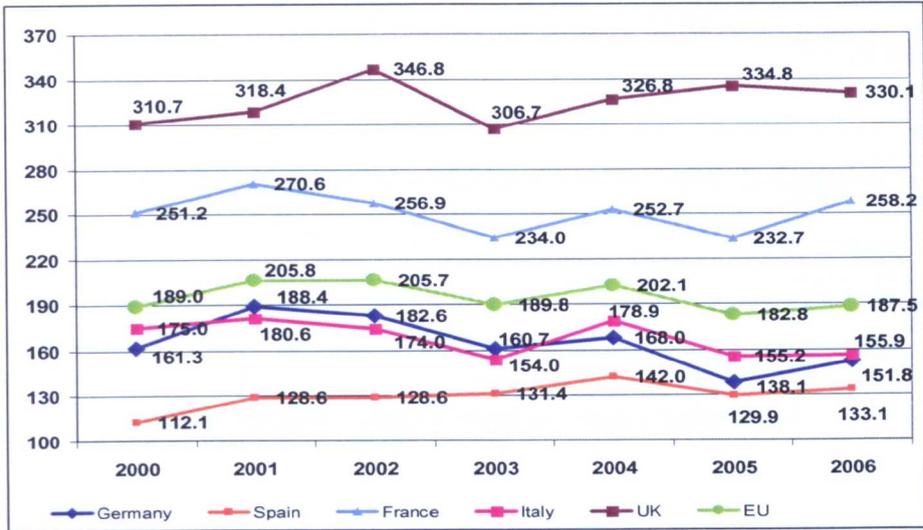
Notes: Table 2.6 indicates the number of screens in use in the EU-15 countries from 2000 to 2006. "EU" indicates total number of screens in the countries belonging to EU-15. Figure 2.12 shows the mean number of screens for the period 2000-2006 in the five leading European countries and the other EU-15 countries.

### 2.3.7 Box office revenues per screen

The variables investigated in the two previous sections are linked here to analyse the relative profitability of the different European countries, by associating the box office revenues (par. 2.3.5) with the number of screens installed (par. 2.3.6). Figure 2.13 shows the trend of this ratio over the period from 2000 to 2006. The result for the UK is particularly large because of the lower number of screens (denominator of the ratio) in

that country. The mean Italian value, 170 million euros per screen, is slightly lower than the 196 million euros per screen mean of the whole EU-15 group.

Figure 2.13 – Box office revenues (in million €) per screen: Italy and EU-15



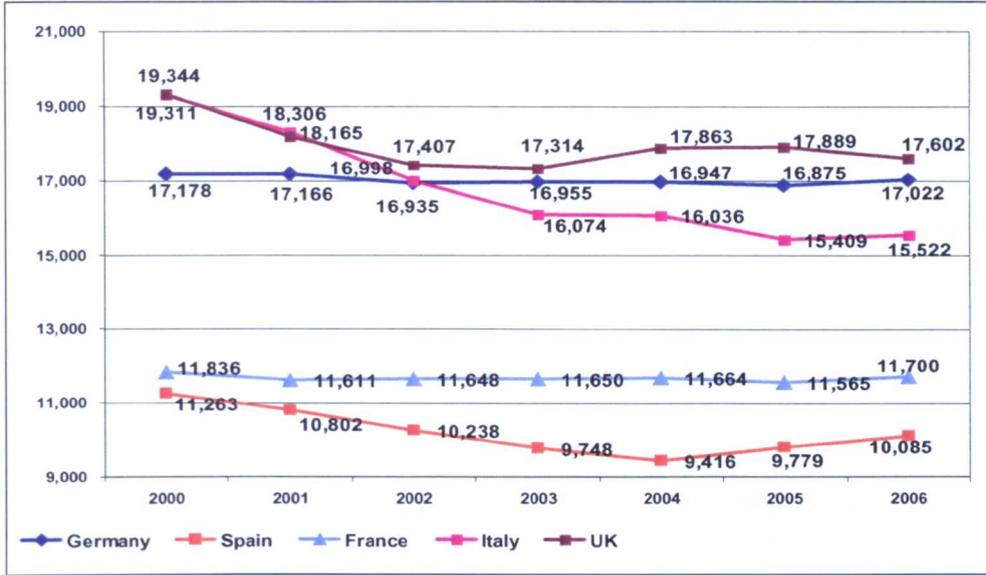
Source: Author's elaboration and processing based on data of European Cinema Yearbook, Media Salles, 2007

### 2.3.8 Number of inhabitants per screen: the five leading EU-15 countries

As explained at paragraph 2.2.9, this indicator is a proxy for the accessibility to screens for the citizens of the different countries, and the same criteria of interpretation apply. Thus, Spain and France have the higher number of screens per citizen, with mean values of 10,000 and 11,700 inhabitants per screen, respectively. Italy is in an intermediate position, with a mean of roughly one screen every 16,800 inhabitants, just a slightly higher concentration than that recorded in Germany and UK.

Figure 2.14 illustrates the number of inhabitants for each screen installed in the five leading European countries in the time span from 2000 to 2006.

Figure 2.14 – Number of Inhabitants per screen: the five leading EU-15 countries



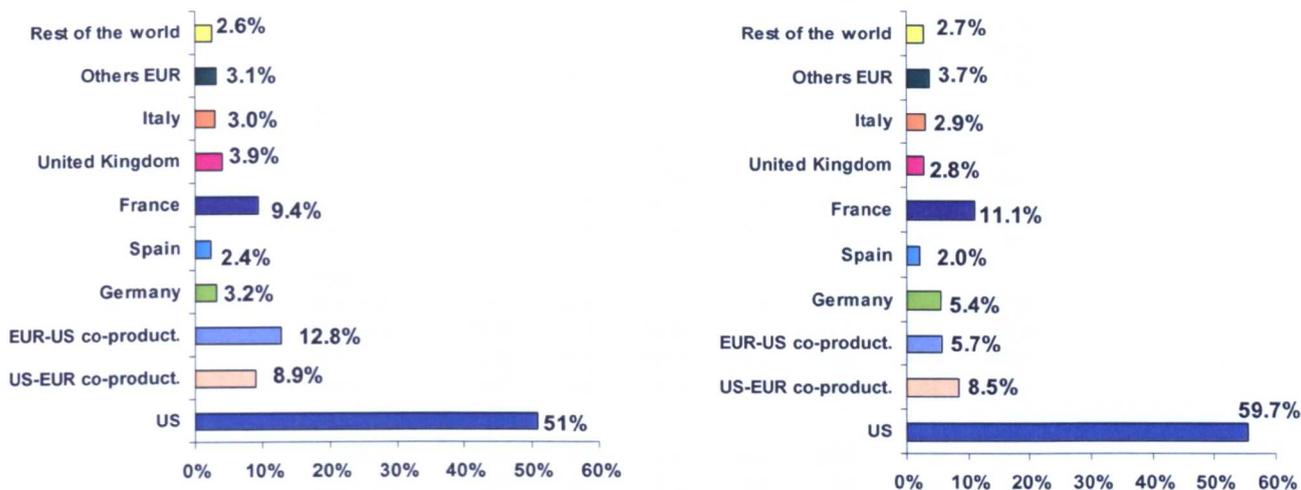
Source: European Cinema Yearbook, Media Salles, 2007

### 2.3.9 Dependency on US productions

A final factor that emphasises the difference between the European and US markets is the asymmetry in the market penetration. This is surely the most striking variable in the explanation of the strength of the US film industry compared to that of the EU-15 countries. In the United States about 90 per cent of the films screened in the theatres are produced in Hollywood. In EU-15, the film markets are dominated by US films, although to different degrees, according to the different national cultural, economic and legal circumstances. The US productions secure at least one half of the EU-15 market share, as is shown in Figure 2.15. On average, five or six films out of ten screened in the EU-15 theatres are US productions, and one or two out of ten movies are co-produced with US firms or are produced in EU-15 with US inward investment. As a result, a large part of the revenues generated in the EU-15 theatres goes to US producers. In contrast, the US market shares attained by EU-15 movies are negligible. Furthermore, the graphs

in Figure 2.15 show that only 3 per cent of the total attendances in the EU-15 theatres arise from the screening of Italian films, although they represent about one eighth of the films produced in EU-15 as a whole (see Table 2.3).

Figure 2.15 – Admissions in the EU-15 movie theatres: breakdown by origin of films, 2005-2006



Source: Focus 2007 - World Film Market Trends

Providing detailed quantification of the dominance of US productions in the five leading European countries, Table 2.7 illustrates the theatre market shares of films by producing country, during the period from 2000 to 2006.

Table 2.7 – Theatre market shares of films by producing country, 2000-2006.  
The five leading European countries

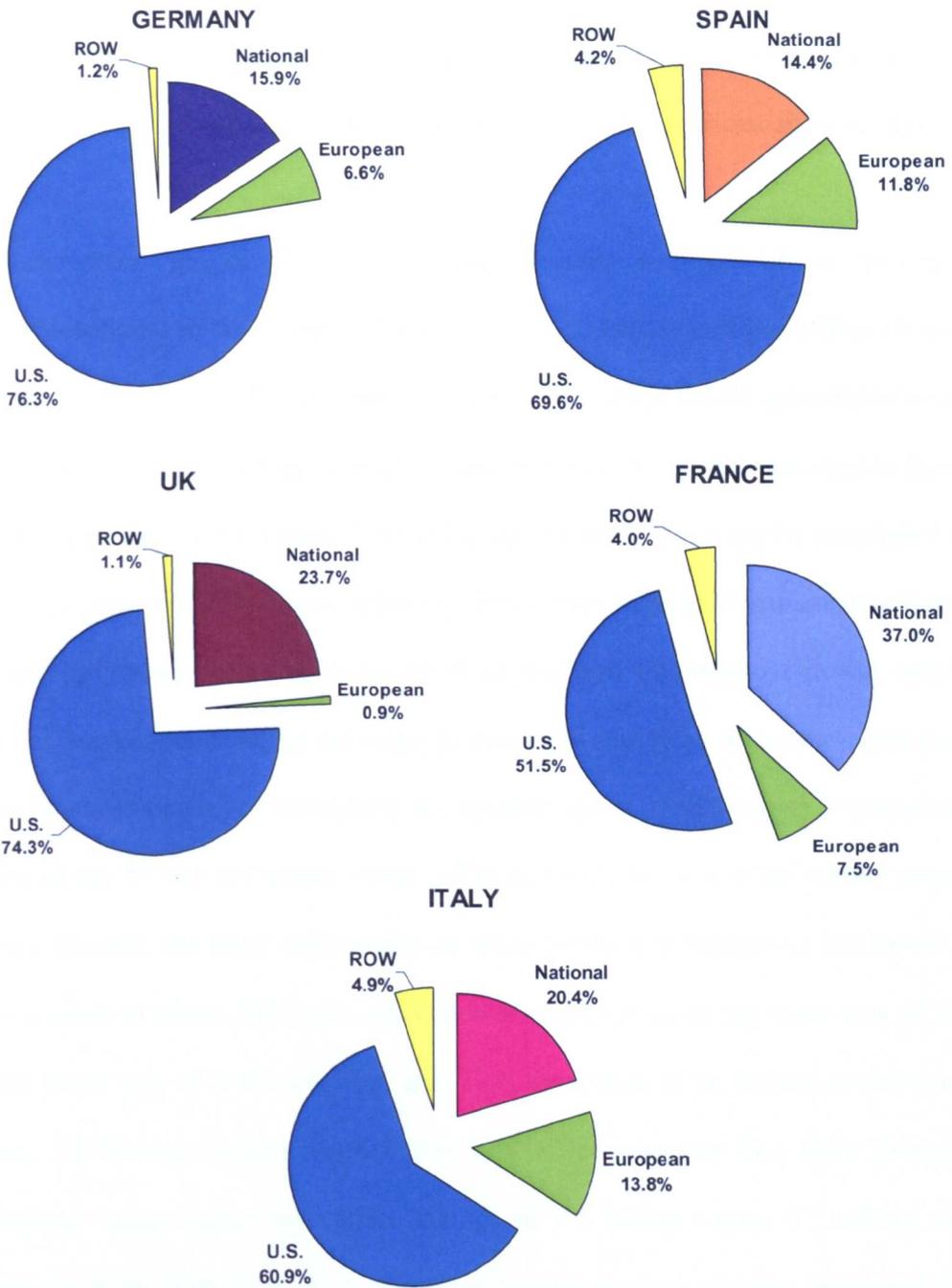
	2000	2001	2002	2003	2004	2005	2006
<b>Germany</b>							
National	9.4	15.7	9.5	16.7	20.8	13.9	25.4
European	7.3	6.5	6.3	4.9	7.1	6.7	7.5
U.S.	81.9	77.0	83.0	76.8	72.1	77.2	66.0
ROW	1.4	0.8	1.2	1.6	-	2.2	1.1
<b>Spain</b>							
National	10.0	17.9	13.7	15.8	13.4	14.2	15.6
European	7.0	13.7	12.8	9.8	7.0	20.6	11.8
U.S.	81.6	62.2	66.1	67.2	76.6	62.6	71.0
ROW	1.4	6.2	7.4	7.2	3.0	2.6	1.6
<b>France</b>							
National	28.2	41.7	34.8	34.5	38.5	36.5	44.6
European	5.6	7.3	8.4	4.5	4.5	13.5	8.8
U.S.	63.7	46.6	50.2	53.6	53.2	48.5	44.7
ROW	2.5	4.4	6.6	7.4	3.8	1.5	1.9
<b>Italy</b>							
National	17.0	19.0	22.0	22.0	14.0	26.0	22.9
European	12.0	17.0	13.0	8.0	11.0	25.0	10.8
U.S.	70.0	60.0	60.0	64.0	62.0	46.0	64.2
ROW	1.0	4.0	5.0	6.0	13.0	3.0	2.1
<b>UK</b>							
National	21.0	n.a	n.a	n.a	23.0	30.0	19.1
European	0.9	n.a	n.a	n.a	n.a	n.a	n.a
U.S.	77.0	n.a	n.a	n.a	73.0	66.0	76.2
ROW	1.1	n.a	n.a	n.a	n.a	n.a	n.a

Source: Author's elaboration and processing based on data of Focus 2007, World Film Market Trends.

Notes: ROW = Rest of the World.

In addition, the pie graphs in Figure 2.16 illustrate the mean theatre market shares of films (period 2000-2006) for Germany, Spain, United Kingdom, France, and Italy, by identifying four large producing areas: national productions; productions of the other EU-15 countries; Hollywood productions; productions of countries from the rest of the world. As can be seen from Table 2.7, the mean values for the UK in Figure 2.16 are derived from incomplete information.

Figure 2.16 – Mean theatre market shares of films, 2000-2006.  
The five leading European countries.



Source: Author's elaboration and processing based on data of Focus 2007, World Film Market Trends

## 2.4 Conclusions

The chapter provides an introductory comparative analysis of the US, European and Italian film industries, useful to better understand and digest the empirical results from the Italian market, compared to those achieved for the American market, shown in chapter 6.

The investigation proves that although the potential audience of the twenty-five countries belonging to the European Union is higher (because of a population of almost 470 million versus 300 million inhabitants of the US), movie theatre attendance is much more sizeable in the US and equal to about one and a half times that recorded in Europe, and nearly ten times that registered in the Italian cinemas. This must be associated with trends in ticket prices in the three contexts, which have been quite similar over time. In addition, Hollywood shows a higher level of financial commitment in the industry, which can be demonstrated by referring to two main variables. First, the considerable number of screens installed throughout the country, about 37,000 versus 29,000 screens installed in the EU-25 (of which about 3,700 in Italy), in spite of its higher potential audience. Second, the huge discrepancy in mean production budgets: a US movie can rely on a mean of about \$65.8 million, which is about 4.8 times the mean cost of a UK film, 10 times that of a French film, and 12.6 times that of an Italian production. In addition, US theatres record much higher box office revenues than their Europeans counterparts: mean annual box office takings of 7.3 billion versus 4.7 billion euros, respectively, from 1996 to 2006. European industries produce a higher number of films in the last years, but over the 1996-2006 period they produced on average about 700 films per year, a figure similar to that of the Hollywood companies. Within Europe, Italy

produces a considerable number of movies, about one eighth of the output of the EU on average.

Taking only a European perspective into consideration, the chapter shows that five main countries dominate the market – United Kingdom, France, Germany, Italy, and Spain – while the role of the other European film industries is quite marginal. However, the predominance of Hollywood is not only financial, but also economic, because in the European theatres there is a substantial dependence on US productions that is dauntingly impressive. Whereas in the United States about nine out of ten movies projected in the theatres are made by Hollywood's companies, in Europe about five to six out of ten films shown are US productions, and one to two out of ten are co-produced with US companies. Despite the high number of Italian film made, the economic role of Italian production in the European market is secondary, because Italian films account for only 3 per cent of the total attendances in the EU-15.

The comparative analysis carried out shows the financial and economic superiority of the film industry of the US over that of Europe and Italy. In the light of these observations, the results obtained in the following chapters concerning the Italian film industry can be better assimilated and interpreted.

## Review of Literature

*"If risks were measured on a scale of 1 to 10, movies would rate a 15"<sup>6</sup>.*

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<sup>6</sup> Levison, *Filmmakers and Financing. Business Plan for Independents (Second Edition)*, Focal Press, 2006.

## 3.1 Introduction

This chapter offers an extensive review of the existing literature to set the empirical analyses that are carried out in the following chapters in the right context.

The perspective analysis is twofold. The first part of the chapter addresses the theoretical approaches to the film industry (par. 3.2), while the second part deals with the empirical literature (par. 3.3).

The theoretical approaches (par. 3.2) are broken down into three sub-sections:

- The first presents the economic outlook of the film industry, by dissecting the specific features that make film production such a unique activity (par. 3.2.1);
- The second offers a technical exposition of the risk and return trade-off principles, clarifying to what extent they can or cannot be applied to film (par. 3.2.2);
- The third focuses on subsidy, identifying the types of public funding used to support the European film industry, and the link with the subsidies composing the dataset used in this thesis (par. 3.2.3).

The “empirical literature” section (par. 3.3) offers a systematic review of empirical studies of the film industry, identifying the uniqueness of studies and possible overlapping findings. After an introduction (par. 3.3.1), this review is carried out in a dual perspective by extensively analysing:

- The empirical literature available on public subsidy issues (par. 3.3.2);
- The empirical literature available on risk and return in the film industry, with sub-sections devoted to specific issues peculiar to this topic (par. 3.3.3).

The chapter ends with concluding remarks, highlighting the themes and literature informing this work (par. 3.4).

## **3.2 Theoretical Approaches**

### **3.2.1 Introduction**

This part is broken down into three sub-sections:

- 3.2.2 The economic outlook of the film industry;
- 3.2.3 Technical focus on risk and return;
- 3.2.4 Technical focus on subsidy.

### **3.2.2 The economic outlook of the film industry**

#### **3.2.2.1 Film as a creative durable product**

The entertainment industry, much more than financial services, steel manufacturing, car or other profit-making industries, is rapidly becoming the pivot of the new world economy (Wolf, 1999).

In the USA, whose entertainment and media industry is the most developed in the world, family expenditure devoted to it is higher than that allocated to medical care and clothing. In its different media manifestations (as for instance movies, television, music, radio, newspapers, arts), entertainment as a whole is the industry with the highest growth rate in many countries, regardless of whether they are still developing or are already advanced economies (Vogel, 2004). The wide cluster of activities that can be

defined as entertainment industry or creative industry (Caves, 2000) includes numerous and different sectors, such as: visual arts (painting and sculpture); publishing (books and magazines); performing arts (concerts, dance, theatre and opera); cinema, television and music industry; fashion and toys.

In order to find the right context for the film industry, an appropriate breakdown of the cluster needs to be done with reference to the *durability* of the product (Hughes, 2000).

According to this criterion, the macro-set of entertainment/creative industries can be properly broken down in terms of the characteristic of its outputs, identifying “durable” and “not durable” products (Candela, Scorcu, 2004).

- Durable products are outputs that can be reproduced, transcribed and enjoyed more than once. This cluster essentially refers to the following industries:
  - Publishing: books and magazines;
  - Cinema;
  - Television and music industry;
  - Fashion (apart from shows), and toys.
- Not durable products are outputs that cannot be reproduced and transcribed. Only some of them can be enjoyed more than once. In this definition are included:
  - Performing arts: concerts, dance, theatre and opera;
  - Visual arts: painting and sculpture;
  - Fashion shows.

As the research in this thesis is focused on the film industry, the emphasis of the discussion will be on durable products. Some common elements identify creative durable products – especially films – as commodities. The following analysis can be

extended to all those outputs that fall within the group of *creative durable products*. Subsequently, the analysis will be further developed by outlining all those common traits belonging to the general category of creative products (Grampp, 1989). This second investigation will make it possible to highlight the specific differences between films and other commodities, and to demonstrate how these differences influence the financial management of the film business. After that, the specific meaning of film as a commodity will be stressed, with the support of the most influential literature on the subject.

First, the common features distinguishing films – considered as part of the wider cluster of durable products – are thoroughly discussed hereafter, and also depicted graphically in Figure 3.1. In the following review the film is taken as a reference of all durable products.

a) The film industry is *highly risky* and *volatile* (Sedgwick, Pokorny, 1998; De Vany, Walls, 1997). The amount of global sales, from the production up to the distribution phases, can only sometimes exceed the break-even point and generate net profit<sup>7</sup>. It frequently occurs that the economic success of a film producer is strictly linked to the breakthrough of a small number of productions rather than to the average profitability of the whole portfolio. In detail, the success of the companies in the mainstream market is related to their ability to identify a few outputs that might be expected to become hits with the public, in a context where the “nobody knows anything” principle rules (De Vany, 2004, page 71, and 220).

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<sup>7</sup> The following empirical chapters will prove this statement.

A strategy that is sometimes adopted by the durable-product entertainment industry as a way of decreasing risk is to diversify risk-management activity on to a different locus of risk, by signing contracts with the so-called megastars (De Vany, Walls, 1999). The objective here is to focus on what is believed to be a specific, idiosyncratic risk-reducing element and thereby set up a cast of famous, ‘bankable’ actors, publish a book with a well-known writer, or cut a record with a music star because they have a good track record of success in the past. Consequently, they should have a greater chance of generating a hit, independently of the intrinsic artistic value of the output (Rosen, 1981). However, this last strategy has proved to be hardly effective, as the following analysis of empirical literature will demonstrate (see ch. 3.3.3).

- b) The *market structure* of the film industry presents important similarities with that of other durable products: all these activities are *complex activities*. The production of the final output requires the involvement of many different professionals, some directly interested in the artistic activity, others involved in the organisation and management of the related activities. The common trait linking cinema, television, music and publishing is not the specific manifestation of the output presented for consumption, or the way it is produced. Instead, it is the concurrent action of different personalities leading to the successful distribution of a durable product in different ways and through diverse channels<sup>8</sup> (Caves, 2000).
- c) The supply of commodities as movies is made possible by *three main productive phases*, not always detectable for other commodities (Benhamou, 2001). These are:

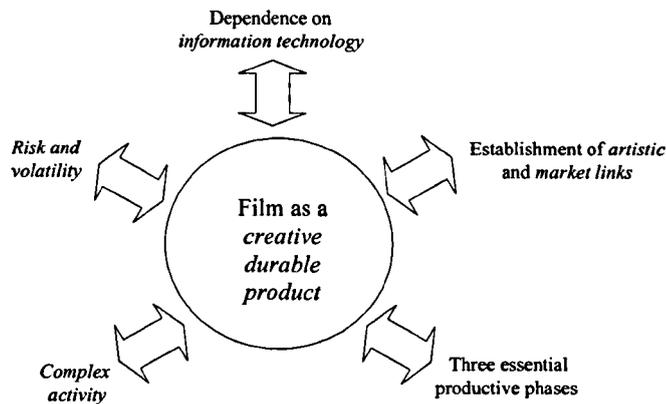
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<sup>8</sup> This principle is known as the “Motley crew principle” by R. Caves.

- the “artistic” phase. The creation of the movie idea, the movie plot and the screenplay;
  - the productive phase. The film is recorded on a master that is used for the production of the many prints sent to the movie theatres, and is now also used as the source of the digital versions that are made available, in shops or by downloading, for domestic viewing;
  - the distribution phase. The film is released onto the market, through a variety of channels, for consumption by the audience.
- d) The firms producing *durable commodities* often establish networks connecting *artistic* and *market links* (Wasco, 1995). The artistic links are necessary to convert a movie into a TV series, into a book or to originate a music soundtrack (and vice versa). The economic links arise from the fact that the commercial prospects of a soundtrack with a limited intrinsic value could be boosted beyond expectation by the great success of a hit movie of which it was a part. The opposite relationship is obviously equally valid. The artistic and economic links between the industries lead to significant implications for the distribution phase. For instance, a film can be distributed by its traditional channel, represented by movie theatres. However, the links existing with other media industries make it possible a new configuration of the distribution phase. A movie can also be distributed by public television, pay-TV, videocassette, DVD or even through the Internet.
- e) Films, along with records, books and TV programmes are heavily dependant on *daily progress of information technology*. Given an unchanging “artistic phase”, the possibility of developing, producing, releasing and improving the outcomes is

closely related to the evolution of technology (Ravid, 1999). As a result, the role of producers and distributors along the chain gains significance. Indeed, on the one hand information technology reduces the production and distribution costs; on the other hand, it increases the supply, at the possible expense of quality. Consequently, an important activity of the consumer is the careful selection among a wide number of productions with similar features; all of them are potential *experiences* (De Vany, 2004), and time consuming (Vogel, 2004).

Figure 3.1 – The different characteristics distinguishing a film as a creative durable product



*Notes and source:* Author's graphic representation based on his own subject matter explained in this section.

### 3.2.2.2 Films as a subset of the entertainment industry

The previous section distinguished the features common to films and other durable products compared to those referring to non-durable products. The perspective is broadened in this section to outline the common characteristics of film as part of the broader group of *creative/entertainment industries* (Caves, 2000).

The performance of a concert, the publication of a novel, and the production of a film have certain common features. These elements distinguish them from other sectors and sometimes from one another inside the creative/entertainment industry as a whole. This last point will be thoroughly analysed later, and then the specific role of the commodities belonging to the entertainment industry as a whole will be investigated. A generalisation of the examples will be made, taking the film industry as a model. The following contents are also summarised in Figure 3.2.

a) “*Nobody knows*” products

Whereas the demand related to the launch of a new food product can be quite accurately estimated, much higher *uncertainty* besets the success of a new entertainment activity. *Nobody knows* how the audience will react to a new film, book or concert, so the demand can hardly be anticipated (De Vany, 2004, page 71). The product can be a great success, largely exceeding the production costs. It can also reach a small audience, but it is intractably difficult to establish the outcome in advance. This principle derives from the film industry, where the possibilities of foreseeing the incomes from a movie are so limited that the expression “nobody knows” has been introduced (Goldman, 1984). Entertainment activities like films are *experience* rather than goods inspection (De Vany, 2003). The *consumer’s* satisfaction is a *subjective reaction*. Nonetheless, knowledge and studies about creative products can provide pointers to customers’ preferences. Movies are complex creative products, because they are realised by different participants in different stages (Balio, 1985). Thus, the economic background is riskier since the costs sustained in each stage are sunk costs (Bakker, 2005a). Sunk

costs<sup>9</sup> are costs that have been incurred, and cannot be reversed or recovered (Brealey, Myers, 2003). Nevertheless, new fresh information is important and useful to estimate the commercial chances of success of the films.

*b) Artists are concerned in their own outputs*

Employees involved in mass production and standardised services are not interested in the final output of their work, but essentially in the reward or the payment they receive for it (Frey, 2003). Some professionals or experts do sometimes care about the final quality of the product they make or the service they run, but their effort is rarely able to influence or affect the organization of production (Caves, 2000). As for creative activities, the artists or the *creators* usually *demonstrate strong commitment* in the work carried out. They care about the quality of the product, the degree of originality expressed, the technical abilities shown, and the result obtained, which can be sometimes perceived in a different way by the audience. The aim of a film director might be to reach an intrinsic quality of the output detectable by the critics or by other film directors, but this result might be far from the audience's average tastes and preferences. Thus, a movie distinguished by an excellent artistic level, but conceived and budgeted for mainstream rather than art-house release, might turn into a "fiasco" at the box office, whereas a commercial or non inspirational film might become a hit.

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<sup>9</sup> Sunk costs are like "spilled milk", since they are past and irreversible. Essentially, what makes them irreversible or unrecoverable is the occurrence of circumstances that frustrate, or render inoperative the economic goal of the project in which the costs have been sunk, together with the unavailability or impossibility of an alternative or 'rescue' goal that could generate sufficient revenue to recover them. For example, a film may have been completed and be waiting for release, but because of a serious turn of events politically, socially, or even technologically (e.g., the coming of sound), it becomes unreleasable. As a result, the owners of the film are left with just the scrap value of the reels of celluloid, which in no way matches the value of the sunk costs.

In sectors like Cinema, the creative staff (such as the film directors) and the non-creative resources (such as the financial backers) coexist.

*c) Different resources are often involved*

Some activities need the contribution of one kind of input only: a painting requires only the work of the artist. Other kinds of activities, like movies, are *complex creative products*, since they entail the concurrent presence of different and complementary professional competences, as previously explained. This situation can lead to conflicts of interests among the different players involved. Therefore the determination of hierarchical structures is fundamental in sectors like Cinema (Kremer, 1993). The making of the final product is a more elaborated process, as it requires the concurrent involvement of many different expertises, compared to “simple creative products”. The different inputs must all be efficient and often present at the same time to realize the work.

*d) Product exclusivity*

To produce manufactured items like cars, steel equipments, foodstuffs and so on, it makes no difference if they are fabricated by one worker or another (Beath, Katsoulacos, 1991). An industrial product with higher quality than an equivalent one will be always preferred if sold at a lower price, but for entertainment and cultural goods this rule is not valid. Two or more movies are *never identical*, even if they are similar in terms of genre, quality and allocated budget – that is, they are *horizontally differentiated* (Hotelling, 1929). The selection made by the audience is not necessarily linked to the higher “intrinsic quality” of the film, but to personal preferences and tastes (Lambertini, 1993). So, even if horizontally differentiated, two movies projected in the theatres (at

the same price) will not be equally attractive to the audience; some of them will choose the first motion picture, and others will prefer the second one (Sedgwick, 2002).

*e) Differentiated skills*

The skills of inputs involved in the making of cultural products are vertically differentiated. Thus, for a movie, it is possible to distinguish, partly from a moviegoer's experience of having seen many different films, and partly from presentational conventions in movie advertising and publicity, the actors who are well known, i.e., stars, from those who are not accredited as "first-class" actors (Sedgwick, Pokorny, 2001). These rankings are important because there will be trade-offs between the expectations of potential ticket buyers arising from their perceptions of the ranking of a cast of personable and competent, but lesser, actors and those arising from a movie directed by "first-class" directors and/or played by "first-class" actors.

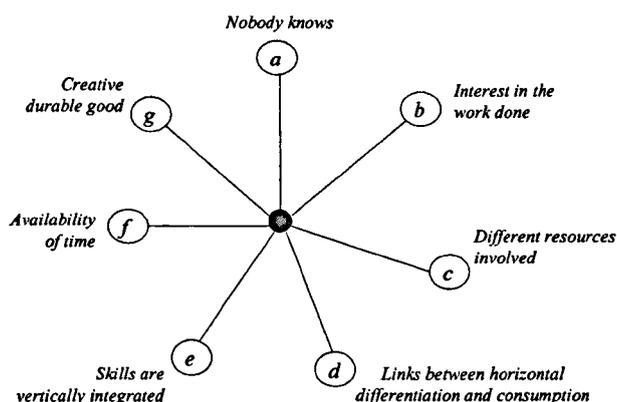
*f) Time availability*

During the making of complex creative products particular attention must be paid to the time variable. Since a movie is produced by the concurrent work of different professionals, time coordination assumes relevance, which is not so critical for organisationally simpler creative processes, such as the making of a painting. Time coordination in the production stage is indispensable in order to limit the effects of sunk costs. Once the project has started, an inappropriate coordination of the diverse inputs involved delays the completion of the work, increasing the incidence of sunk costs on the overall economic valuation of the project (Weinstein, 2005).

*g) Creative durable goods*

The 'live' performance of a singer is not classifiable as a durable product, as its artistic and economic value expires with the end of the concert<sup>10</sup>. The production of a movie originates a durable good, since both the cultural and economic effects extend over several months or years. The movie is firstly distributed to the cinema, then to alternative channels, such as television, home video, video rental. As the cash flows resulting from the production of a movie are staggered in time, the organisational configuration of this kind of operation must be structured with particular attention. As a consequence, another need arising from the management of creative durable goods is the efficient control of warehousing and retrieval (Greenberg, 1961).

Figure 3.2 – Film as a subset of the entertainment industry



*Notes and source:* Author's graphic representation based on his own subject matter explained in this section.

<sup>10</sup> The economic value can sometimes last even after the concert if, for instance, the performance is recorded and subsequently distributed as a cd or dvd. However, this constitutes a new product different from the concert itself.

### **3.2.2.3 What is the film industry?**

The literature gives various definitions of the film industry, differing between cultural, historical or economic approaches. In this section the various studies referring to the different approaches adopted will be systemised and organised, in order to provide a framework of the various aspects of the industry. The information provided is summarised in Table 3.1 at the end of the section.

#### ***Financial approach***

Significant theoretical explanations of the financial implications deriving from the film industry are included in the studies conducted by A. De Vany. He describes films as “fluctuating and uncertain products” (De Vany, 2004, page 145). The reason for this uncertainty is the impossibility of accurately estimating the box office results, because “no one knows they like a movie until they see it” (De Vany, Walls, 1999, page 288). This empirical observation is valid either for a first-run or for a subsequent run showing. The uniqueness of films and their hazardous life in the market is also confirmed by the researches conducted by H. Vogel. In the film industry, a few leading products “command a disproportionate share of the market and they have longer runs”. Even then, the expected success of a film is “ephemeral” and its commercial life is unpredictable. To understand the significance of this observation, suffice it to say that of any ten big movies produced, six or seven are economically unsuccessful, one on the average is able to break-even and only the remaining one or two are profitable (Vogel, 2004). Its riskiness is confirmed to the extent that “in no other business is a single

example of product fully created at an investment of several millions of dollars with no real assurance that the public will buy it” (Squire, in: Eliashberg, 2000, page 227).

### ***Etymological approach***

R. Stam approached the subject “cinema” through an etymological analysis. According to this scholar “the etymological meanings of the original names given the cinema ‘envison’ this specificity differently and foreshadow later theories of the cinema” (Stam, Miller, 2000). Thus, the terms “*Biograph*” and “*Animatographe*” accentuate the *recording of life* itself. The expression “*Vitascope*” outlines and emphasises the *looking at life*. The word “*Cinematographe*”, and “cinema” later call attention to the *transcription of movement*. Practically, all the names include different variations of the term “*graph*”, deriving from the Greek and meaning “writing” or “transcription”. These meanings reflect the fact that the roots of the film industry can be found in photography, in montage, or more generally, in “some quality of cinematic representation such as movement” (Stam, Miller, 2000).

### ***Linguistic approach***

A “linguistic approach” is given by C. Metz. According to his studies, Cinema can be considered “a *language* first of all”. It is a ‘*technico-sensorial unity*’ based on a given *matter of expression* (Metz, 1974). Actually, verbal language deploys two expressive forms: sound for oral language, and graphic expressions for written language. According to Metz, cinematic language is “the set of messages” whose matter of expression consists of five tracks or channels: *sound* and *writing* as for verbal language and, in addition, *moving photographic images*, *recorded noises* and *recorded musical sounds*. As a consequence, Cinema is not only a language *in a broadly metaphorical sense*, but

also “*a set of messages shaped in an accepted way of expression*” (Metz, 1974). With reference to the complex interrelations existing with the “other arts”, film can be seen as a *multi-track and changing medium, heir to all the antecedent arts* (Carroll, 1996). The extent to which Cinema can be defined as an art can be summarised in the statement that the film industry manufactures an *art form for the masses* (Murphy, 1998).

### ***Technological approach***

Other experts have emphasised the inherent connection with technology. The film industry can be depicted as a peculiar *marriage of art and technology* (Fielding, 1967). According to that, this particular link makes it possible to explain the artistic and historical development of the movies. The relevance of twentieth-century technology serves to distinguish film from other arts, for which the progress of technology is not such of great importance (see par 1.5, on film as a commodity).

### ***Economic approach***

The role of the film industry as a “commercial enterprise” has been widely clarified by J. Sedgwick and M. Pokorny. Their studies are concerned with the business of the *making, distribution and reception of a product* (Sedgwick, Pokorny, 2005). Even while emphasising the commercial role of film as a commodity, they recognise the artistic relevance of movies, in that they have played and are still playing a very important part in the cultural and aesthetic lives of consumers across the globe since their coming and during the whole of the twentieth century. Moreover, the two economists discuss the historical meaning of the film industry, trying to detect the evolution of film as a business: they outline the Hollywood omnipresence and leadership in the world market and analyse the reasons behind the American economic supremacy in the industry. The

main motivation they point out is the importance of the “business environment”. The notion of the *entrepreneurial* characteristics of film is strengthened by the studies of H. Vogel. He outlines its “aesthetic function”, because “ego gratification, rather than money” is sometimes the only return of a film production. Nevertheless, Vogel remarks that the film industry is still *truly entrepreneurial*. In addition, Cinema is a business “affected as any other by basic economic principles” (Vogel, 2004). This definition recognises the commercial rather than the artistic and aesthetic role of the film industry, because the producers’ objective is to maximise the cash flows. The movie business is hence “entrepreneurial and capitalistic”. Movies are by nature *research and development products*, they are *commercially perishable* (in the sense that theatrically they have short revenue-generating lifetimes), and their financial volatility is exasperating because they “cannot be test marketed in the usual sense” (Rusco, Walls, 2002), and their distribution has unbounded variance, “undermining the assumptions of the classical linear regression model” (Collins *et al.*, 2002). The implications of the last statement will be examined in the econometric approach analysed below.

### ***Econometric approach***

The concept of film as an *experiential commodity* has been introduced by the American scholar A. De Vany, as explained previously. He defines films as “wild” products, implying that movie revenues “are not well behaved”. The risk/return trade-off of the film industry is hence “volatile and unstable”<sup>11</sup>. The degree of risk is so high that it could be said “to shape the film industry”, its organisation and operations. The “Paretian Model” provided for the film industry presupposes that the likelihood of success of

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<sup>11</sup> With regard to risk and return trade-off in finance consider the portfolio theory. Reference literature is: Markowitz, 1952; and Sharpe, 1964.

movies looks nothing like the “Gaussian distribution”<sup>12</sup>. Indeed, if movies trends followed the Gaussian distribution, most films “would be similar to one another” with an outcome close to mediocrity, and the “standard movie” would be represented by the average of the Gaussian distribution. Few films would be amazing hits and few films would be serious commercial failures as well. Practically no productions would be at the tails of the bell-shaped curve. The film industry does not follow the rules of the Gaussian distribution, because it is a completely different kind of industry (De Vany, Walls, 2002). The Paretian Model<sup>13</sup> applied to the Cinema outlines that it is “a business of the extraordinary”<sup>14</sup>. Notice that these theoretical observations constitute the basis of the empirical analysis of this work, and they will be tested thoroughly in the following chapters.

### ***Communication approach***

The foregoing study also emphasises the artistic and market links between the film industry and the other entertainment industries (point d, par. 3.2.2.1). De Vany describes the film industry as an *information industry*, pointing out that it constitutes without doubt the “first major information industry of the twentieth century”. It is also “an industry of *innovation* and *discovery*” (De Vany, 2004, page 3). According to this remark, the film producers innovate and screen their movie; then moviegoers express

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<sup>12</sup> On this topic: Dym, 1976

<sup>13</sup> The Paretian model refers to the Pareto probability distribution created by the economist Vilfredo Pareto. The model was initially used to depict the wealth distribution among people within a society, showing that a large part of its riches is held by a very limited number of individuals. By generalizing the model to all kinds of businesses, the Pareto principle affirms that 80% of outcomes derive from 20% of observations. In the film industry, box-office revenues are defined as “Pareto-distributed”, implying that the mean result is ruled by infrequent very successful productions that place themselves in the far right tail of distribution.

<sup>14</sup> “Movies are a business of the extraordinary”. Quotation taken from: The golden formula for Hollywood success. It only happens in the movies. Interview with A. De Vany, *The New York Times*, 23<sup>rd</sup> March 2000.

their preferences and the producers discover whether the movie is a success or not. Finally, the film industry can be depicted as an “egocentric business” distinguished by such a noteworthy level of risk and volatility that those who take decisions must be considerably “self-involved” and “self-conscious” (De Vany, 2004, page 3).

Table 3.1- The film industry tabulated according to the different approaches of the scholars

Financial	De Vany A.	<i>...Fluctuating and uncertain products...</i>
	Vogel H.	<i>...Unpredictable commercial life...</i>
	Squire J.	<i>...The riskiness of the film industry...</i>
Etymological	Stam R.	<i>...Belonging to 'graph'... 'writing' and 'transcription'...</i>
	Miller T.- Stam R.	<i>...Finds its roots in photography and montage...</i>
Linguistic	Metz C.	<i>...Based on a 'matter of expression'...</i>
	Carroll N.	<i>... A multi-track and changing medium...</i>
	Murphy R.	<i>...An art form for the masses ...</i>
Technologic	Fielding R.	<i>...A marriage of art and technology...</i>
Economic	Segdwick J.-Pokorny M.	<i>...Emphasis on the commercial role of the industry...</i>
	Vogel H.	<i>...It is a truly entrepreneurial industry...</i>
	Rusco F. - Wasco J.	<i>...Movies are research development products...</i>
	Collins A.- Hand C.- Snell M.	<i>... Film distribution has unbounded variance...</i>
Statistical	De Vany A.	<i>...The risk/return trade off is volatile and unstable...</i>
	Walls W.- De Vany A.	<i>...It is a business of the extraordinary...</i>
Communication	De Vany A.	<i>...It is an information industry...</i>

*Notes and Source:* Author’s graphic representation based on quotations reported in this section and attributed to the corresponding mentioned scholar.

### 3.2.2.4 Film as a commodity

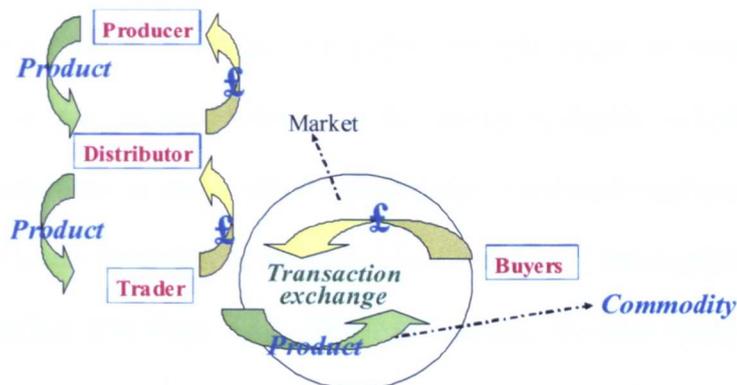
The main distinction between the results in the American and in the Italian and European markets that will be identified in the following chapters (chs. 3 to 10) is essentially ascribable to the different approach towards films in the two areas: business

vs. cultural – that is, commodities vs. cultural goods (Perretti, Negro, 2003). In this paragraph the meaning of ‘commodity’ is introduced.

Commodities are “*products* that are assigned a *price* by the *producer*”, and then placed in a *market* (“social space”) for potential *buyers* “to locate and consider”. So, a product succeeds as a commodity when a sale contract is fulfilled and the “transaction exchange” is realised (Sedgwick, Pokorny, 2005).

The following Figure 3.3 summarises graphically the concept of commodity vs. product in graphical terms.

Figure 3.3 - What is a commodity? From the “product” to the concept of “commodity”



Notes and source: Author’s graphic representation based on the subject matter mentioned in this section.

At this stage, it is possible to outline those specific traits distinguishing film as a commodity in relation to all other activities, either referring to the entertainment industry or not. Like many other mass artworks, movies are products realised using technology both for the production and distribution phases. This makes them usable for audiences that are *mass* in that they *cross national, class, religious, political, ethnic, racial, and gender boundaries* (Carroll, 1998).

Even though the features distinguishing film as a commodity are descriptive, some of these characteristics will prove to be essential in the following empirical analyses, in the light of the results identified.

1) *Uniqueness*. Each of the “50-100 motion pictures” playing on the screen screens every day is *unique*”. (De Vany, 2004, page 11). Each production competes for audiences with a changeable set of similarly *unique alternative commodities* in a very short life span (De Vany, 2004). A movie is a combination of *intrinsic and specific features* distinguishing it from any other movie produced. Nevertheless, hits have similar characteristics of style and plot, forming over time “lineages that are subject to life-cycle tendencies” (Sedgwick, Pokorny, 2005, page 15). Since each movie is unique, its individual life cycle in release is *hardly predictable*, and its performance on the market is *highly volatile*. Unlike the market behaviour of many other commodities, *empirical evidence* demonstrates that only a very limited number of movies can bring in extraordinary incomes at the box office (De Vany, Lee, 2004). In addition, the cash flows generated by successes during a certain year can differ considerably from those obtained by hits in the previous or following years.

2) *Life cycle*. The life cycle of a film is usually quite short. Cash flows rapidly dry up after a few weeks if the film does not succeed with audiences. De Vany outlines this specific feature, referring to the so-called “*survival time model*”. The life cycle of a film is a “pure birth-death process” in a system that is “time-dependant”, and the survival time is the interval included in this time-frame. The probability that a film is still screening in theatres at time  $t$  is:  $R(t) = 1 - F(t)$ ,

where the survival time is a random variable  $\tau$  with distribution function  $F(t) = \text{Prob}(\tau \leq t)$  (De Vany, 2004). However, the life cycle of a film is no longer confined to theatrical release. The evolution of the distribution phase, since the advent of television and other distribution channels, has extended the commercial life of movies, generating cash flows even many years after the first release on the theatre screens. However, it must be stressed that the following work focuses on the economic performances of movies in the theatres only, and does not take other channels of diffusion into account.

- 3) *Seasonal trend.* Films follow a seasonal trend, distinguishing them from books, records, paintings, whose life cycle fluctuations are not strongly influenced by external factors, and whose consumption trends are quite steady over the years. Instead, film consumption is linked to specific periods of the year. Actually, the release of important productions is planned to occur around Christmas time or during vacations and holidays, when demand for films rises. As a consequence, minor productions are usually screened in months when demand is lower. By releasing films with highest production costs at Christmas or during other holidays, companies maximise the possibilities of obtaining high cash flows to break even rapidly.
- 4) *Audience's marginal utility.* The consumption of a film in the theatres usually occurs only once. A spectator seldom watches the same movie theatrically more than once. He might watch it again through a different distribution channel (dvd, pay-tv, internet downloading, free-to-air tv, etc.) months or years later. In other words, the marginal utility of a movie, once viewed theatrically, decreases

rapidly. When the audience has a choice of film programmes, the utility anticipated from watching a movie for a second time is typically less than that anticipated from watching a new movie offered at the same price (Sedgwick, Pokorny, 2005). Because of this, theatrical reissues of films are limited to those that have a “fans’ consumption” base, such as *Star Trek*, *Lord of the Rings*, etc. For these fans, the marginal utility of their favourites seems not to decline with repeated viewing. However, for the vast majority of consumers the decreasing marginal utility rule is fully effective.

- 5) *Film supply adjustment*. The film supply adjustment is dynamic, at least for the first distribution stage in the theatres (Caves, 2000). If a movie succeeds, the increase in supply is effected not by making an additional number of prints (unless demand is such that it will be profitable to incur the marginal cost of producing and distributing them), but by extending its run and/or increasing the number of theatres screening it. The evolution of the supply adjustment is of great importance for the economic performance of a movie. Since most of the production’s costs are sunk costs (par. 3.2.2.2, point a), the fixed costs are rapidly covered as the income increases. The overall margin obtained from this point onwards represents a source of “increasing return” for the producer (De Vany, 2004). The adaptation of supply by an increase in the number of copies distributed – the norm for a book or a record – occurs in the distribution phases when the film is released through television, or dvd rental or sell through.
- 6) *Market turnover*. Another distinguishing trait of the film market, is its dynamism: “*it renews*” very *rapidly*. Every week new films replace others whose

revenues are declining. The market turnover is *very fast*, and “for each new birth there is a death” (De Vany, Walls, 1997, page 788). As the life of movies can be very uncertain and linked to *bandwagon effects*<sup>15</sup> more than intrinsic quality, the word of mouth and other communication elements are of great importance. This confirms the definition of “motion pictures as an *information industry*” (De Vany, 2004, page 1).

- 7) *Reproducibility*. This feature distinguishes films from other arts (visual and performing arts), but assimilates them instead to books and music records (Sedgwick, 2000). Compared to these, technology is a specific variable of great relevance for films, requiring the presence of the consumer in a suitable place, the movie theatre. As images viewed on screen, movies are *indivisible*, can be *enlarged* indefinitely and *cannot be diminished* by the process of consumption in the mind of the consumer.
- 8) *Physical durability*. The physical life cycle of the medium upon which the film is recorded is *much longer* than the commercial life cycle of the movie in the theatres. In the early history of the movie business this “sequence of images that did not decline mechanically in step with consumption” led to gluts of unsold movies, a situation that was eventually resolved by the evolution of the modern system of distribution (Sedgwick, Pokorny, 2005).
- 9) *Place, time, and duration of consumption*. The specific role of the audience with relation to time, place and duration of the consumption is unique (Colbert, 2001).  
With reference to the place and time of consumption, film has a hybrid identity.

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<sup>15</sup> About bandwagon effect, see: Leibenstein, 1950.

It is a *collective consumption commodity*, as it requires the gathering in a theatre in a predetermined time. However, it is also an *individual consumption commodity*, when distributed through channels alternative to theatres. In this case, the spectators can watch it where and when they prefer by means of television, video rentals, and home video. The identification of a good as a “collective or individual consumption commodity” depends exclusively on the distribution channel through which it is released<sup>16</sup>. In addition, the movie’s audience has a very limited degree of control over the *duration of consumption*. To look at a work of art or visit an exhibition does not require a predetermined amount of time, as the spectator can choose how long to attend. To benefit completely from the screening of a film, it is necessary to watch it in the theatre for the exact duration of the film, irrespective of any consumer’s possible preference.

Finally, as for the possibility of *possession* of the *technical device* necessary to consume the product, the end user has no possibility of personally emulating the technical and artistic dimensions of a movie released in the theatres. In the subsequent distribution stages the audience can have full possession of the technical means of viewing a film, as they can decide on which format to watch it, and when. It is advisable to stress again that the empirical analyses conducted in the following chapters of this work will focus exclusively on revenues generated at the box office. The function of the viewers in determining place, time, duration of different commodities, and in the possession of the technical tool is also summarised in the following Table 3.2.

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<sup>16</sup> On these topics also see: Carroll, 1998.

Table 3.2 - The role of the audience in determining the place, time, duration of different commodities and in the possession of the technical device

	Performing arts	Shows and exhibitions	Films	Records/CD	Publishing	Visual arts
<i>Place</i>	-	-	±	+	+	+
<i>Time</i>	-	±	±	+	+	+
<i>Duration</i>	-	+	-	-	+	+
<i>Possession of technical device</i>	-	-	±	+	+	+

*Notes and source:* Author's graphic representation based on subject matter and quotations reported in this section.

10) *Relationship between cost and revenue.* Many studies demonstrate that as the film *production costs* increase, the related revenues rise and the revenue distribution has high variance<sup>17</sup>. A positive relationship exists between the amount of funds allocated to produce a movie and the performance generated at the box offices (Eckert, De Vany, 1991). Nonetheless, this relationship becomes much more unstable as the production costs increase. When a producer assigns significant funds to a movie production, the likelihood of obtaining considerable revenues rises, but they become increasingly uncertain as the costs increase. This point will be empirically examined and proved both in the US context, and in the Italian context (see ch. 6).

The main ten features distinguishing film as a commodity described in this section are graphically summarised in Table 3.3.

<sup>17</sup> Among these studies: Bordwell, Staiger, Thompson, 1985; Collins, Hand, Snell, 2002; De Vany, Eckert, 1991; Sedgwick, Pokorny, 2005; Vogel, 2004; Caves, 2000; De Vany, 2004.

**Table 3.3 - The main characteristic distinguishing film as a commodity**

Uniqueness	→	<i>Each movie is unique and its performance unpredictable</i>
Life cycle	→	<i>Short in theatres, but the distribution phase is now multi-channelled</i>
Seasonal trend	→	<i>Release productions in different periods of the years according to cost-profit estimations</i>
Consumer's marginal utility	→	<i>Decreases rapidly</i>
Supply adjustment	→	<i>Very dynamic</i>
Dynamic market	→	<i>Market turnover is high</i>
Reproducibility	→	<i>Movies are "indivisible", can be "enlarged" and "cannot be diminished"</i>
Physical life cycle	→	<i>Is much longer than the commercial life cycle in the theatres</i>
Role of the consumer	→	<i>Increasing in determining place, time and possession of technical device</i>
Production costs	→	<i>Positive relationship with box office revenues</i>

*Notes and source: Author's graphic representation based on subject matter and quotations attributed to the corresponding mentioned scholar reported in par. 3.2.2.4.*

### **3.2.3 Technical focus on risk and return**

#### **3.2.3.1 Introduction on risk**

This section examines the state-of-the-art theory of risk and return that applies to finance, and the reasons why much of it does not apply to film. The analysis links knowledge about risk and return in financial theory with the film as a commodity, according to the specific features dissected in the previous section "The economic outlook of the film industry" par. 3.2.2 that make a film such a distinctively unique product, so that many instruments used in financial practice can be implemented only with difficulty, if at all.

The concept of risk in financial theory is well known. Investors who purchase bonds, shares or any other kind of financial securities must accept an exposure to risk, which consists in the uncertainty about the future price at which they will be able to sell the security, and the amount of cash flows obtained up to that date (Knight, 1921). As to films, the problem lies in the extreme uncertainty about the amount of revenues the production will be able to generate at the box office.

Corporate finance literature recognises different categories of risk that can influence the economic performance of investments. Economic risk can increase the uncertainty of cash flows and usually stems from variations in real economy variables. Financial risk does not have a direct effect on cash flows, but can considerably influence them as a consequence of external financial events.

What makes the film environment so distinctively chancy is the specific business risk due to the complete unpredictability of the revenues a movie will be able to generate, irrespective of the economic or financial risk a given production will face during its release. Whereas the demand related to the launch of a new food product or a new car can be quite accurately estimated, forecasts of the economic performance of a new film production are subject to uncertainty to the point of being no more than confidently presented hunches based on the hoped-for appeal of the film, as the numerous studies in this field – analysed in detail at par.3.3 – have indicated (Sedgwick, Pokorny, 1998; De Vany, Walls, 1997; Collins *et al.*, 2002; Balio, 1995; Bagelli, Becchetti, 1999).

### 3.2.3.2 The state-of-the-art theory of risk and return

A strict relationship exists between the risk associated with an investment and the financial resources investors are willing to assign to it. Indeed, investors respond even before a potential risk can occur, as according to financial theory the mere likelihood that the future cash flows might become uncertain or volatile contributes to decreasing the value of a given security. So, high risk expands the uncertainty of future cash flows of an investment, and raises the market price of that security. All kinds of risks, independently of their nature, contribute to generating swings in the market value of securities (Bodie, Merton, 2000). Investors aim to reduce the uncertainty about the amount of future cash flows from the financial activities in which they invest money (Elton, Gruber, 1977).

Finance theory teaches that some financial securities are more volatile than others, e.g.: the shares of a listed company are much more volatile – that is, they are riskier – than the government bonds of a creditworthy State, as the cash flows of the latter are certain in amount and due date, while these are much more unpredictable for stocks (Ross *et al.*, 2002). As a consequence, the more (less) volatile a security is, the riskier (less risky) its market value is, and vice versa. What is more important, finance theory makes it possible to identify and quantify to a certain extent the higher risk associated with a share compared to a government bond, so that the investors can be conscious of the different potential risk they are going to assume. This does not mean that in the financial market it is not generally possible to exactly establish in advance the cash flows that all the categories of securities will generate, even though for some of them these inflows can be precisely appraised – e.g., the government bonds of a financially stable State – or

quite satisfactorily approximated to a range of values – e.g., the bonds of a high-rated company. For other securities, such as shares, the *ex ante* assessment of cash flows generated is highly unsure, but nevertheless the risk connected to the investment in these kinds of securities can be estimated to a certain extent.

What happens in the movie business in this regard? In the film industry the degree of uncertainty is so high that it is impossible to distinguish between “financial categories” of films in terms of future expected revenue levels and volatility, as “each film is unique and plays its own way” (De Vany, 2004, page 12). While the issue of new securities can be associated with a presumed level of risk, this does not occur for any film, whose commercial result is completely unknown until it has been screened in the theatres (Austin, 1989). This is due to the fact that the presence of a star name, gaining positive reviews, the presence of a major distributor to release the film, a considerable production budget, and other variables can enhance the probability of generating higher revenues at the box office, but their impact is far from certain, and, even more important, cannot be empirically measured *ex ante* (Elberse, 2006; Collins, *et al.*, 2002; Albert, 1998; Ravid, 1999). These aspects are thoroughly explored in the “Empirical Literature” section, ch. 3.3.3.

In addition, financial literature has shown that the level of variance also depends on the investment time structure and has a tendency to decrease over the long-term (Barberis, 2000). By nature, the cash flows generated by financial securities can last from short periods to more than ten years, while the revenues films can obtain in the theatres are centred upon the few weeks or, at maximum, the very few months of their theatrical release, since “their ‘shelf life’ is only a few weeks...” and “...movies enter and exit the

market on a continuing basis” (De Vany, Walls, 1999, page 7). This trait contributes to distinguishing film production as a much riskier and more unpredictable investment than is the case for, say, food, clothing or machinery production.

### **3.2.3.3 Is it possible to assess risk and return in the film industry?**

There is no rational assumption that an investor is willing to choose a given financial security if another security offers a more satisfactory return at the same level of risk (Markowitz, 1952). Return and risk of an investment are strictly related, as higher risk investments are associated with larger positive and negative prospects in terms of return and wider possible dispersion around the expected return, while lower risk investments are associated with lower, but less spread out, ranges of possible returns (Fama, Miller, 1971). The key point here is that it is possible to affirm – with a reasonable degree of accuracy – which one is the riskier of two financial securities, as adequate instruments can be used to express the relative risk of different securities, as will be explained below.

To assess the profitability of an investment, the concept of the expected rate of return on an investment is used, expressed as the sum of each presumed possible rate of return obtainable, weighted by the respective probability of occurrence. So, the expected rate of return,  $E(RoR)$ , from a financial investment is expressed as:

$$E(RoR) = \sum_{i=1}^n RoR_i * p_i = \overline{RoR}$$

Where  $ROR_i$  is the  $i^{\text{th}}$  possible rate of return from the investment,  $*$  is the symbol for multiplication, and  $p_i$  is the probability of the occurrence of the  $i^{\text{th}}$  possible rate of return.

In finance, according to the risk and return trade-off principle, the more volatile an investment is, the broader are the variations in its expected return, and in any case the higher is the uncertainty about attaining this return. In the financial markets, it is possible to express the risk for a financial security as the expected dispersion of its possible rates of return around the expected rate of return. In mathematical terms, this is estimated by the variance of the investment – that is, the sum of the squares of the deviation of each rate of return from the mean return – weighted by the likelihood of occurrence of each return.

$$VAR(RoR) = \sum_{i=1}^n p_i * (RoR_i - \overline{RoR})^2$$

From variance, standard deviation is obtained. Standard deviation ( $\sigma$ ), the square root of the variance, is the indicator that is usually used in assessing the risk of an investment.

$$\sigma(RoR) = \sqrt{VAR(RoR)}$$

The expected return of a financial security can be estimated on the basis of the historical return observed from fungible securities, or securities with a comparable level of risk. In the same way, the variance of a security can be measured according to the dispersion of the past returns of that security around its mean return. Accordingly, the bonds of a public utility will be likely to be recognised as low risk activities, while the shares of a firm working in a cyclical sector will be identified as higher risk.

This state-of-the art theory of risk and return cannot be satisfactorily applied to film, essentially due to the features identified in the analyses conducted in the section “The economic outlook of the film industry” par. 3.2.2, and the empirical literature foundations that are stated at par. 3.3. Our theoretical analyses led to the assertion that the expected success of a film is “ephemeral” and its commercial life is unpredictable. Besides, a movie is a combination of *intrinsic* and *specific features* distinguishing it from any other movie produced. Every single film is unique and different from any other previously produced, thus its individual life cycle in release is *hardly predictable*, and its performance on the market is *highly volatile*. In financial terms, the uniqueness of film productions implies that there is no historical information that can be used, neither to estimate their expected return in the theatres, nor their standard deviation, since there are no data to assess the spread of possible dispersion of the returns of film productions.

This exposition aims to clarify the situation, which is that, although different instruments and models to evaluate the risk and return trade-off of financial investments exist and are extensively used, because of the specific traits that distinguish films (their uniqueness and the extreme *uncertainty* besetting their success) the present financial knowledge on risk and return cannot be suitably applied to film, thus making the investigation of the risk and return profile of these commodities an extremely demanding task.

### **3.2.3.4 Limitations in dealing with risk management in the film industry**

The financial principle behind the efficacy of diversification as a way to reduce risk is very simple: devoting all the financial resources at disposal to only one asset is more risky than holding clusters of differentiated activities. This easy to guess statement is the foundational principle of financial diversification (Amit, Livnat, 1988). It is confirmed by the empirical generalisation that the variance of single financial securities is greater than the variance of the market as a whole. To reduce risk, investors can hold clusters of different asset classes, knowing that the diverse characteristics of the securities make their prices move independently. By holding different categories of securities it is possible to diminish the particular influence that any specific security has on the return of the portfolio as a whole. This positive upshot is attributable to two factors: on the one hand, the reduced weighting of the variance of any specific security on the economic performance of the overall cluster of assets held by the investor; on the other hand, the higher equilibrium between rising and falling securities (Markowitz, 1952). This concept is expressed by the correlation coefficient that links two or more financial securities. For instance, an investor could direct all his/her available funds to buy the shares of company X, which offer an attractive expected return of 15 per cent, but also the high likelihood that the actual return obtained could be considerably far from this expected value, either downwards or upwards. This could result in a high standard deviation for X's shares, e.g., 1.8. Alternatively, the investor could lessen his/her risk by investing both in X's shares and in Y's bonds, the latter with an expected return of only 4 per cent, just little more than the return guaranteed by government bonds, but with a very high likelihood of obtaining this outcome, therefore resulting in a low standard

deviation, e.g., 0.3. By devoting money to a diversified cluster of assets the investor would reduce his/her risk, because the two investments are not correlated with each other. Correlation is a statistical indicator measuring the degree of relationship between two securities or other asset classes (Cohen *et al.*, 2003). The correlation coefficient can vary from  $-1$  to  $+1$ . A value of  $+1$  indicates a perfect positive correlation, meaning that as the value of one security goes up or down, the value of the other security will move up or down linearly with it. Conversely, a value of  $-1$  indicates a perfect negative correlation, entailing that as the value of one security goes up or down, the other one will move down or up linearly with it. Finally, a value of  $0$  means that there is no linear relationship between the securities, but it is compatible with a non-linear relationship between them. Of course, two securities with perfect negative correlation assure the maximum level of diversification and hence risk reduction, while two securities with perfect positive correlation do not bring about diversification benefit. Correlation coefficients with intermediate values offer different levels of diversification, while for securities with a correlation coefficient equal to  $0$  it is not possible to establish the possible level of diversification, and hence the degree of reduction of variance.

In the above mentioned case of the shares of company X and the bonds of company Y, risk reduction is obtained, since the correlation coefficient is surely far from  $+1$ , because the risk and return profile of Y's bonds is nearly equivalent to that of government bonds. Thus, their rate of return should not depart significantly from its expected rate, while the actual return on X's shares can be much higher or lower than its expected return.

The general conclusion that can be drawn is that the risk of a diversified cluster of securities is smaller than the average risk of the securities composing that cluster,

### **3.2.3.4 Limitations in dealing with risk management in the film industry**

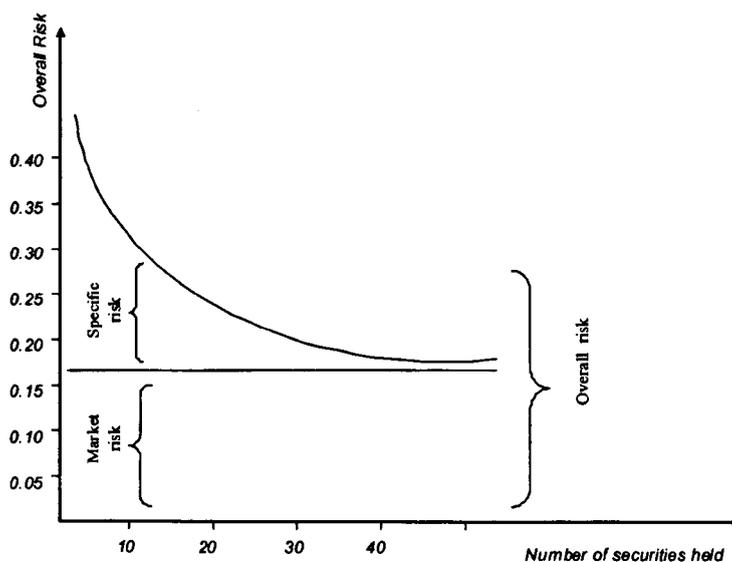
The financial principle behind the efficacy of diversification as a way to reduce risk is very simple: devoting all the financial resources at disposal to only one asset is more risky than holding clusters of differentiated activities. This easy to guess statement is the foundational principle of financial diversification (Amit, Livnat, 1988). It is confirmed by the empirical generalisation that the variance of single financial securities is greater than the variance of the market as a whole. To reduce risk, investors can hold clusters of different asset classes, knowing that the diverse characteristics of the securities make their prices move independently. By holding different categories of securities it is possible to diminish the particular influence that any specific security has on the return of the portfolio as a whole. This positive upshot is attributable to two factors: on the one hand, the reduced weighting of the variance of any specific security on the economic performance of the overall cluster of assets held by the investor; on the other hand, the higher equilibrium between rising and falling securities (Markowitz, 1952). This concept is expressed by the correlation coefficient that links two or more financial securities. For instance, an investor could direct all his/her available funds to buy the shares of company X, which offer an attractive expected return of 15 per cent, but also the high likelihood that the actual return obtained could be considerably far from this expected value, either downwards or upwards. This could result in a high standard deviation for X's shares, e.g., 1.8. Alternatively, the investor could lessen his/her risk by investing both in X's shares and in Y's bonds, the latter with an expected return of only 4 per cent, just little more than the return guaranteed by government bonds, but with a very high likelihood of obtaining this outcome, therefore resulting in a low standard

affecting the market as a whole, such as interest rates, inflation, general trend of the economy, and so on. These factors give rise to the so-called market or systematic risk (Kaufman, Scott, 2003). Value volatility of securities can also depend on specific variables of each particular firm, e.g.: corporate misconduct, a new patent from a firm making products of other companies, outdated, contingencies, and so on. These factors determine the so-called specific or idiosyncratic risk (Storesletten, *et al.*, 2007).

$$\text{Overall risk} = \text{systematic risk} + \text{specific risk}$$

Diversification works by diminishing specific risk, because by investing in a cluster of securities rather than a single security, the influence of the peculiar risk factors of any one of them is attenuated (Brealey, Myers, 2003). However, systematic risk cannot be removed through diversification. Therefore, diversification is effective in reducing, but not eliminating, the overall investment risk, as the following figure illustrates.

Figure 3.4 – How diversification works in reducing risk



Nonetheless, in the financial markets systematic or market risk can be managed to a certain extent. To capture systematic risk, the financial theory uses the beta coefficient ( $\beta$ ), which measures the sensitivity of a security to market risk (Rubinstein, 2006). Based on the  $\beta$  values of securities, it is possible to assess the sensitivity of these investments to the variations occurred in the capital market as a whole. If an investor devotes money to a security that has a  $\beta$  value greater than 1, he/she knows that that security is likely to magnify both positive and negative variations in the market. This security is particularly risky. If the investor buys securities with a  $\beta$  value between 0 and 1, the investment is safer, as it is likely to react less wildly to either rising or falling market variations.  $\beta$  equal to zero denotes risk free securities, while  $\beta$  equal to 1 denotes securities that move exactly with market movements.

What are the relevant conclusions that can be drawn? In the financial markets it is possible to set up clusters of assets that can decrease considerably the overall variance of securities. While the specific risk can be greatly reduced by diversification, the market risk can be managed, depending on the distinctive risk propensity of the investors: by adding securities with high  $\beta$  values they will amplify the possibilities of getting either very positive or very negative returns; by adding securities with low  $\beta$  values they are likely to get more limited profits, but also reduce the likelihood of big losses.

In the film industry the same rationality cannot be applied: while diversification strategies have been positively assessed also by earlier studies – although practical simulations of the benefits that they can deliver are not available yet (De Vany, Walls, 1999) – numerous and sound pieces of research have demonstrated that the possible rate of return of a movie cannot be estimated *ex ante* in any way, since the performance of

past productions cannot be correlated with that of any other production, and the success of a film has no relationship with market variables that can be weighted or assessed before the first screening of the movie in the theatres. The conclusion that each movie “plays its own way” (De Vany, 2004, page 12) implies that it is impossible to identify an indicator such as  $\beta$  for each individual motion picture. Thus, while it is possible to denote a systematic risk indicator for financial securities by assigning to them a beta value, no beta value can be attributed to any film, because although it is known that each movie is very risky, no film can be *known* to be *more* risky or *less* risky than any other before its theatrical release can give an answer. A minimum commercial profitability of a movie cannot be guaranteed or expected in advance, since “film audiences make hits or flops and they do it, not by revealing preferences they already have, but by discovering what they like” (De Vany, Walls, 1996, page 1493).

These factors prove that although many techniques used to assess the risk and return trade-off for financial securities are effective, they are not so for films, since their peculiar traits make it impossible to forecast *ex ante* their possible economic performance at the box office.

These observations contribute to making the empirical analysis conducted in this thesis particularly significant, as no a priori judgement can be made on the risk and return profile of any specific film production.

To understand why risk is the key financial variable in the film industry and how it can be coped with, the focus in the next part is on the specific categories of risk that film companies must face (par. 3.2.3.5), and the management risk strategies that are commonly implemented to handle them (par. 3.2.3.6).

### 3.2.3.5 The categories of risk in the film industry

Three macro-categories of risk can be identified in the film industry:

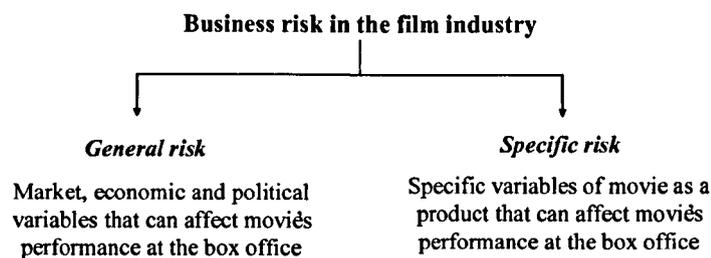
- Business risk
- Operating risk
- Financial risk

Each one of these is investigated and broken down into further sub-categories, so as to identify the main differences that distinguish the film industry from other traditional business sectors.

#### ***Business risk***

Business risk can be defined as the degree of uncertainty about the financial performance of a film in theatrical release, resulting from non-financial factors (Hansson, 2007). Figure 3.5 identifies two main kinds of risks – general and specific business risk.

Figure 3.5 - Business risk in the film industry



*General risk* refers to the cluster of market, economic and political variables that can influence the box office result of a film, but which are beyond the control of the producer. (Freshfields Bruckhaus Deringer, 2002). Factors such as different pricing

levels, public policy towards film and the arts, and unforeseen events, all impact upon the performance of films in international markets. Hence, although general business risk is a critical variable, it is not the main justification for the extremely high levels of uncertainty observed in the movie industry.

*Specific risk* is much more significant for the purposes of this work. It concerns all the variables peculiar to the product or service offered that can influence its final financial performance (Young, Tippins, 2000). Thus, while it might be thought that film talent (a cast of famous actors, a well-known director, and a reputable screenwriter) would be reliable elements in determining ‘hit’ films, the empirical analyses conducted in this work and elsewhere show that this is not the case. Indeed, the random nature of the distribution of production costs against profitability is such as to lead one commentator to reflect that the film industry has been defined as the only business where “a single example of product fully created at an investment of millions of dollars has no real assurance that the public will buy it” (Squire, 1992, in: Eliashberg, 2000, page 227).

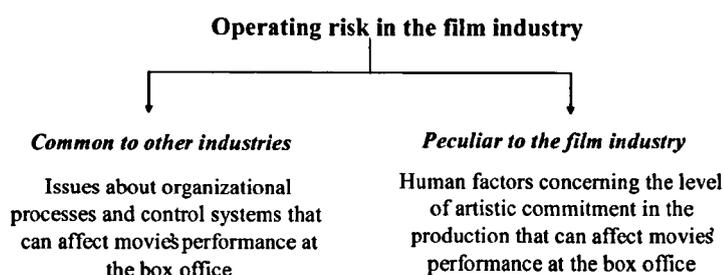
This state of affairs is quite different in other sectors, such as automobiles, ready meals, or financial services, where consumers’ tastes and preferences are more amenable to measurement, and better understood (Heiner, 1983). The associated risk is typically lower than that encountered with entertainment products (Goldman, 1983).

### ***Operating risk***

Operating risk refers to the chance that the product is subject to various threats concerning the production process such that the final output is different from that planned. There are two categories of operating risk, depicted in Figure 3.6, which distinguish between those that are common to other industrial sectors – connected to

corporate organizational processes, as well as control systems (Scarff, 1993) – and those peculiar to the film industry, arising from human factors such as the suitability and capability of individual talent involved in specific film projects (Caves, 2000).

Figure 3.6 - Operating risk in the film industry



In the film industry, leading talented participants (actors, directors, writers, cinematographers and composers) are often more interested in artistic quality, originality and technical expertise than in the economic performance the film in the movie theatres. While the aim of a chief financial executive of a company is to maximise the shareholders' economic value by launching a commercially attractive new product in the market<sup>18</sup>, a film director could aim to achieve a specific intrinsic level of quality of the output, detectable by the critics or by other film directors, but which does not necessarily correspond to the average tastes and preferences of cinema audiences. Productions recognised as artistic masterpieces sometimes do not find a matching recognition at the box office, while commercial films with no notable degree of artistic

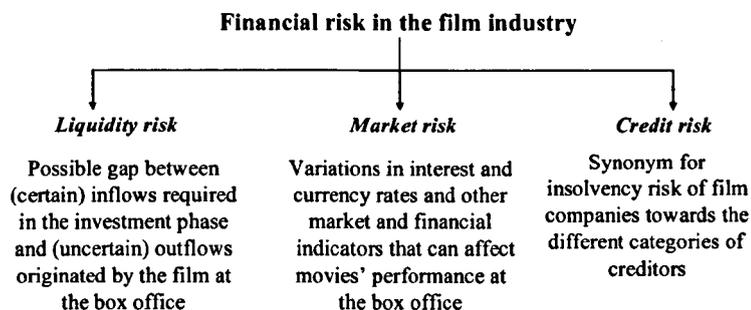
<sup>18</sup> The objective of the firm is to maximize its value to its stockholders (Van Horne, 2004); the goal of finance is to maximize the value of the firm (Damodaran, 2003); the most important theme is that the objective of the firm is to maximize the wealth of its stockholders (Weston, Copeland, 1992); management's primary goal is stockholder wealth maximization (Brigham, Gapenski, 1990); shareholders are made better off by any decision which increases the value of their stake in the firm... The secret of success in financial management is to increase value (Brealey, Myers, 2003).

commitment can turn out to be blockbusters<sup>19</sup>. A further observation here is that the greater the artistic reputation of the talent employed in making a film, the greater is the likelihood that the final output will not conform to that planned by the producer(s) of the project (Cones, 1998).

### ***Financial risk***

In the film industry financial risk can be broken down into three distinct components, concerned with (a) the outflow and inflow dynamics (liquidity risk), (b) the variation in specific financial indicators (market risk), and (c) the insolvency level of the companies (credit risk) (Culp, Niskanen, 2003). The distinction between these three risk sub-categories is essential for understanding the peculiar high variance in the industry.

Figure 3.7 - Financial risk in the film industry



<sup>19</sup> The seasonal Christmas movies released by the Italian film company Filmauro always receive very negative reviews for their commerciality, but steadily obtain impressive economic results: *Vacanze di Natale '95* released in 1995, with cost of €4.2 million, collected €13.6 million in the Italian theatres, equal to a positive rate of return of 224.9 per cent; *Natale sul Nilo* released in 2002, with cost of €2.8 million, collected €14.7 million in the Italian theatres, equal to a positive rate of return of 421.6 per cent; *Natale in India* distributed in 2003, with cost of €2.9 million, collected €9.1 million in the Italian theatres, equal to a positive rate of return of 208.2 per cent. In contrast, a film such as *Gli Angeli di Borsellino* distributed in 2003, about the killing of Judge Paolo Borsellino and the men of his escort, has been recognized as film of national cultural interest from Italian Ministry of cultural heritage, but, with a cost of €0.9 million and only €54,000 in revenues, it achieved a negative rate of return of -94.2 per cent (source: dataset created for the purpose, see Chapter 5).

*Liquidity risk* arises from the possible gap between the (certain) inflows required in the investment phase to make the movie and the (uncertain) outflows, originated as box office takings, necessary to repay the financiers (Crockford, 1986). This kind of risk is extreme in the film industry because, from a project finance viewpoint, the financial sources raised in the opening phase might not to be repaid through the subsequent revenues generated by the film (Nevitt, Fabozzi, 2000).

So, in financial terms the film industry is distinguished by severe cash flow tensions as well as capital rationing constraints<sup>20</sup> – companies need immediate resources to cover production costs while offering adequate guarantees to financiers, given that the (possible) cash flows from revenues are generated in the following period.

*Market risk* can affect greatly the financial performance of a film, and essentially consists in the risk that its financial performance can fluctuate as a consequence of variations in market prices, interest rates, inflation rates, currency rates, and other exogenous financial indicators (Satyajit, 2004). This variation can be due either to variations in specific features of the specific financial instrument or its issuers, or to variations in variables that can affect all the financial instruments in the market. The most disturbing among these are unexpected variations in (a) the interest rates (*interest-rate risk*), (b) the rates of exchange (*exchange rate risk* or *currency risk*), (c) stock prices (*equity risk*), and (d) commodity prices (*commodity risk*). It must be emphasised that this kind of risk can be allowed for to a considerable degree through hedging. Although such practices are common across sectors, it should be pointed out that in the film business only the US ‘majors’ and the leading European companies are able to

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<sup>20</sup> A firm faces capital rationing when it is not possible to raise capital for one or more projects, even if profitability meets the required rate of return (Vernimmen, 2005).

structure hedging policies, which leaves most of the minor firms extremely vulnerable to market risk.<sup>21</sup>

*Credit risk* in the film industry is a synonym for the *insolvency risk* faced by film companies. The level of credit risk in the industry is extreme: two out of three films are usually unprofitable at the box office; for films to break even, it is necessary to recover up to two or three times the amount allocated to the budget (Freshfields Bruckhaus Deringer, 2002); inflows obtained from financiers are often repaid with the cash flows generated in the secondary markets, collected many years after the first release of the movie in the theatres (Moul, 2005).

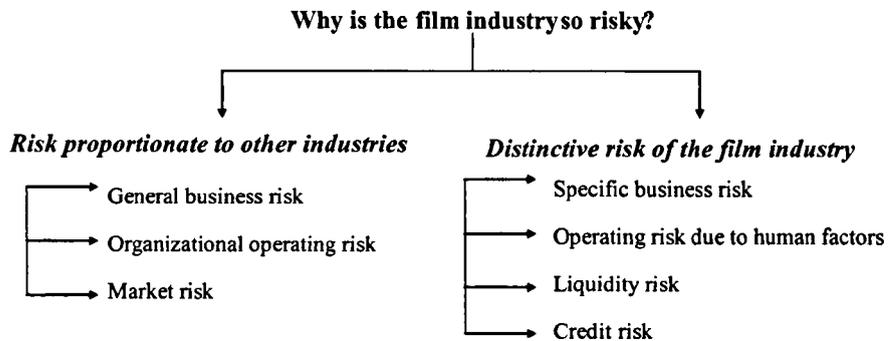
### **3.2.3.6 Risk management in the film industry**

It has been explained in the previous section that, even though the categories of risk that film companies must face are similar to those met in traditional sectors, specific factors in the movie industry make some of these risks particularly striking. While general business risk, organizational operating risk and, in some ways, market risk can be dealt with at a level of concern similar to that which is appropriate in other sectors, specific business risk, operating risk related to human factors, liquidity and credit risk make the film industry one of the most highly risky and volatile (Sedgwick, Pokorny, 1998; De Vany, Walls, 1997), in a way that makes box office performance unpredictable (De Vany, 1999).

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<sup>21</sup> In the Italian context, an advanced example of coping with market risk is that of the film company Medusa, and its financial director Giovanni Soresina.

Fig. 3.8 - Similarities and differences in terms of risk degree. Film industry vs. other sectors



The empirical analyses carried out in the following chapters will examine the product and process variables affecting variance, and related risk management. Risk management in the film industry must rely on sharing, restriction and diversification policies (Crouhy, Galai, Mark, 2000). Efficient companies are those that are able to fulfil these two approaches, so reducing their exposure to risk and appearing as more attractive borrowers to financiers. In this section the specific tools and policies used to face these kinds of risk in a hazardous context such as that of the film industry are described, in order to give an outline of the situation and the main techniques the film companies use to hedge against these risks.

***Business risk management***

The possible interventions to mitigate film companies' business risk are represented by risk restriction, and by risk sharing, in which financiers are granted so-called *covenants*. In the film industry positive rather than negative covenants are the most common and significant. Increasingly, the 'packaging' of well-known talent that has been successful in previous productions is necessary to reassure and persuade financiers to grant the

large amount of financial sources needed to make would-be blockbusters. Again, it has been observed that sequels of movies that were profitable at the box office in the past are also considered by financial institutions as positive covenants, because the previous success is regarded as a reassuring clue about the expected economic performance of the sequel. Nevertheless, empirical investigations – examined at par. 3.3.3 – have proved that these “recognising signs” are often only a snare and a delusion (Bowser, 1990; Kerr, 1990; Pokorny, Sedgwick, 2001). Two examples drawn from the empirical dataset used in subsequent chapters to analyse the US industry will suffice to illustrate the risks incurred with these covenants. The movie *Waterworld*, produced by *Universal* in 1995, attracted massive financial support corresponding to a production budget of more than \$129 million<sup>22</sup>, mainly thanks to the participation, as leading actor, of Kevin Costner, a star on the crest of a wave in the 90s. In spite of that the film did not live up its expectations and was an economic failure (Weinraub, 1995). In contrast, the 1999 movie *The Blair Witch Project* collected amazing revenues in the US theatres, equal to \$93.5 million, with an extremely low budget of only \$0.7 million and no famous actors, director or other well-known artists in the production. However, the sequel, *Book of Shadows: Blair Witch 2*, released in 2000 did not repeat the success of the original, generating about \$26 million at the US box office, with about \$15 million production costs (source: boxofficemojo.com).

### ***Operating risk management***

First, *monetary operating risk* occurs if the planned inflow and outflow schedule of goods is not followed. While in a corporate finance view the missing funds can be easily

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<sup>22</sup> The production cost of this film is in fact equal to about 8.5 times the \$15.4 million mean production budget of the movies composing the dataset analysed.

be replaced by drawing upon cash flows from other corporate operations, the risk is extreme in the movie industry, since new resources must be raised, or planned costs must be cut, to the detriment of the quality of the final output. The opposite tension in the inflow and outflow plan can occur in case of unexpected costs, the so-called *cost overrun* (Flyvbjerg, Holm, Buhl, 2002). Certainly this is true of many other products, but the uncertainty concerning film as commodity and the complete impossibility to predict its economic results make this risk even more troublesome in the movie industry.

Second, an *economic operating risk* results when box office performance disappoints expectations, lowering the profitability of the project. Of course, the worst outcome of operating risk occurs when the work is not completed.

Companies can mitigate operating risk by drawing up *completion bonds* with sponsors and financial institutions, which guarantee the funds necessary to repay creditors and shareholders, for the whole amount – unconditional completion bond – or up to a definite threshold because of a franchise – conditional completion bond (Yescombe, 2002).

### ***Financial risk management***

*Liquidity risk management* is grounded on three essential points. First, *financing timing* is critical, as the resources must be obtained before the production starts, so as not to incur production delays, or, even worse, the failure to complete the work. One of the most advantageous ways film companies can manage this risk is by drawing up *pre-sale financing*, by which a film's production budget is funded by granting a license for the film's rights to a distributor before the work is completed (Di Gregorio, 1998). The great benefit of pre-sale financing in reducing liquidity risk is that it can make available a

large part of the financial resources needed to make the film before shooting takes place, so reducing pressure on the creative process.

Second, it is vital that the *financial cycle* is adhered to, enabling the producers to use the funds in the production stages according to schedule.

Third, the *debt repayment schedule* needs to be carefully set up according to the categories of creditors involved.

*Market risk management* is critical because the risk in the film industry is even more significant. Some sectors are cyclical, so variations in their performances are strictly correlated to the variations occurring in the market: public utilities are the typical example of a cyclical sector (Lovejoy, Bowers, 1962). Other industries, such as pharmaceuticals, are not so clearly correlated to the market (Flavin, Hurley, Rousseau, 2002). The problem with the film industry is that there is no correlation with market variables (see par. 3.2.3.4 on beta), so a variation in interest rates, currency rates or other financial indicators can considerably affect the range of financial results for a production, with no possibility of forecasting the direction of this change (Vogel, 2004).

*Credit risk management* within a not very financially advanced sector like the film industry is essentially grounded on corporate *collateral securities*. This is important, since film companies do not invest to any considerable extent in tangible assets, and the only fixed assets that constitute valuable securities are *libraries* of movies. From this emerges the first step, recognition of the need to shift from a corporate finance to a project finance perspective, an approach that would make it possible to set up a juridically independent company for the production of a film – the so-called *special purpose vehicle* (SPV) – isolated from the parent company's corporate assets, thus

reducing considerably the default risk in the event that the film does not succeed. Here, then, the probability default is ascribable only to the specific project carried out, and it is not affected by other dynamics concerning the firm as a whole. The advantages resulting from the project finance perspective are the subject of investigation of the “policy implications” chapter (ch. 7).

### **3.2.4 Technical focus on Subsidy**

#### **3.2.4.1 Introduction**

The following chapters deal with the subsidy allocation to a film industry, in particular in chapter 5 a complete paragraph is dedicated to the analysis of public subsidy allocation procedure in the Italian film industry during the time span examined in the thesis (par. 5.1); in chapter 6 the results concerning the financial efficiency of subsidy as an instrument to bridge the gap in financial performance between the Italian film industry and that of the US are presented (par. 6.5, 6.6, and 6.7); in chapter 7 the main policy implications arising from results obtained in the light of the new regulatory framework that has come into effect in Italy in the years after the time span of the work are also explored (par. 7.2).

This paragraph aims to offer a technical exposition of the subsidy procedures relating to the European film industry, by carrying out a comparative analysis of the different

options of funding systems of all the European countries with available information<sup>23</sup>. Actually, a wide spectrum of modalities and instruments to bring about public support to national film industries exist. An elucidation of the different ways in force in the different European countries is appropriate to understand the practical mechanism by which funds flow to film institutions.

#### **3.2.4.2 Types of public funding to the film industry**

Five categories of comparative public funding to national film industries can be distinguished in the European context:

- 1) Subsidy to specific project vs. structural funding to companies
- 2) General subsidy vs. specific subsidy
- 3) Automatic Subsidy vs. selective subsidy
- 4) Repayable subsidy vs. non-repayable subsidy
- 5) *Ex ante* Subsidy vs. *ex post* subsidy

These categories are analysed below with specific focus on their significance with regard to the empirical analysis conducted in the thesis on the Italian background from 1995-2003.

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<sup>23</sup> The film funding systems of the following countries are analysed, with differing degrees of depth depending on available information: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Finland, France, Greece, Croatia, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Republic of Macedonia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Switzerland, Russian Federation, Spain, Sweden, Slovak Republic, Turkey, United Kingdom. The main focus is on the leading countries in the film industry: United Kingdom, France, Germany, Italy, Spain (see ch. 2.3). Data: European Audiovisual Observatory.

### *1) Subsidy to specific project vs. Structural funding to companies*

Public financial backing can be made supporting single projects and portfolios of projects, or supporting instead companies rather than single productions. As for this difference, it must be affirmed that the majority of European countries fall within the first category, and more specifically subsidies are usually granted to finance the making of a single production. The subsidies examined in this work belong to this category of funding, as the following chapters will investigate the financial effectiveness of single subsidies assigned to 566 individual Italian films. Some countries also fund a series of productions rather than a single production only: this mechanism is known as slate funding, which is extensively used in the United Kingdom, and Germany, but also in Norway. In addition to feature films, dramas, animations and creative documentaries often benefit from slate funding, on condition that they are of a minimum length and the producing company holds the copyright (European Commission, Media, 2008).

Structural funding to companies is also made in some European countries. This does not represent the kind of financing to promote single productions, but funds assigned by agencies specialised in the business practices of the film industry, and often by those of the European Union, to reduce the disequilibrium of an economic nature involving the companies. Sometimes structural funding also aims to promote investment whose sphere of activity is not confined only to the film industry. Even though this kind of financial support is secondary to specific projects subsidies, many European countries use this form, such as Germany (with Nordmedia agencies), France (with the national film board CNC), and United Kingdom (with the various regional Screen funds), as well as Austria, Belgium, Norway, and Ireland. Finally, it must be noted that tax facilities implemented

by local institutions to foster activities in film centres and media centres also fall within the category of structural funding.

### ***2) General subsidy vs. Specific subsidy***

General subsidies are those that are usable in all kinds of film productions, while specific subsidies are forms of funding devoted to specific kinds of productions with defined characterising traits, e.g.: feature films, documentaries, films distinguished by cultural interest, first or second works, animated productions, etc. As a general rule, it can be said that the most industrially developed and largest European countries incline towards systems with specific subsidies to specific forms of productions, while smaller countries often provide for general funding accessible to all kinds of productions. However, most European states have specific subsidy programmes, given that small countries such as Switzerland, Portugal, Greece, Ireland, Denmark, Hungary, and Netherlands also have differentiated subsidy practices for different kinds of productions. Italy adopts specific programmes for different kinds of productions, as the Data chapter will show (see par. 5.1). The subsidies analysed in this work fall within the category of specific funding.

### ***3) Automatic Subsidy vs. Selective subsidy***

Automatic subsidies are contributions that the candidates directly receive on condition that some pre-established requirements are met, and the application for these subsidies has been submitted properly. Automatic subsidies can be general or specific, and in this last case they can be devoted in different ways to film production, distribution or exhibition. The most common automatic system by far is represented by automatic contributions linked to the success of films, used in most European countries since the

early years of the nineties. The purpose of automatic system funding is to foster investment in films that have a large economic potential, in order to develop allied industries and correlated activities, so improving the general economic national base. Depending on the European countries analysed, different automatic subsidy systems can be identified. The main models are listed briefly hereafter, indicating the countries in which they have application.

- Automatic subsidy is usually administered by national film agencies, although there are exceptions. In Italy the management of this procedure was in the hands of a Bank – Banca Nazionale del Lavoro (BNL) first, and now Artigiancassa S.p.A, after the incorporation of the latter in BNL in 1996<sup>24</sup> – that manages funding for the provision of services for the Italian Ministry of Cultural Heritage.
- Automatic subsidies are usually destined for production companies, but exceptions exist, since in Italy and Switzerland directors, screenwriters, authors and other economic agents can also obtain subsidies for the productions in which they are involved.
- The automatic subsidies do not usually coerce companies into reinvesting the money obtained in new film productions. However, there are numerous exceptions in this case, as in many European countries – among which Germany, Italy, France, Portugal and Austria – an obligation to reallocate the money deriving from subsidies in the industry exists. It must be also pointed out that the obligation has turned into a form of incentive to reinvestment in Italy since the

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<sup>24</sup> <http://www.artigiancassa.it/Pagine/chisiamo.aspx>

tax shelter regulation of 2008 has come into effect<sup>25</sup>, but this rule does not apply to empirical analysis of this work, since the most recent films of the Italian dataset examined refer to year 2003.

- Automatic subsidies can be calculated on different bases. In most cases on box office takings recorded by films – this is the case of Italy, as well as Spain, Belgium, Portugal, Sweden, Norway, and Hungary; in other cases, on the number of spectators registered in the movie theatres – as occurs in Germany, Finland, Estonia, Austria, and Switzerland. Some countries also link box office takings or admissions with the nominations and awards obtained by the production in recognised film festivals (Germany has adopted this mixed method since 2004). France uses the amount of additional tax on film tickets as a base to calculate the sum to grant. Whatever the circumstance, the film producers obtain the cash flows some months or years after the release of the movie in theatres, and sometimes on condition that they are reinvested in new film productions.
- Automatic subsidies are determined according to different methodologies, some of which use points systems, while others use percentage systems. The schemes based on the number of attendances assure a fixed sum proportionate to the number of admissions recorded. For instance, in Germany the amount is established according to a points system, so the films that can collect the higher automatic funding are those with the highest number of theatre attendances registered and the most prestigious awards achieved at film festivals. The schemes that are grounded on box office takings determine the amount of

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<sup>25</sup> Finance Bill 2008 (Law no. 244/2007) has introduced a series of tax relieves for the film industry, included in the Article 1, paragraphs 325 to 343. In particular paragraphs 338 to 339 provide for measures on tax shelter. Also see ch.7.3, par. “Toward a project finance perspective”

automatic funding according to a percentage of the revenues the film has recorded in the theatres. This last scheme is largely used in most European countries, such as Spain, France, Sweden, Norway, and also Italy. In Italy up to the new regulation that came into effect in 2004, the film companies could obtain an automatic funding of 13 per cent of the box office takings of their films over a period of five years after the first release of the film in the theatres, while the regulatory framework in force as from 2004 provides for different percentages to be applied to the box office revenues recorded by movies over a period of 18 months after their theatrical release<sup>26</sup>.

Some schemes also provide for a ceiling for the amount of subsidies obtainable, fixed following different criteria; as well as the attainment of minimum requirements, failing which the automatic contribution is not applied. For instance, to take advantage of automatic funding in Germany a film must achieve at least 150,000 attendances in the theatres, while in Portugal the qualifying minimum box office revenue is set at 25,000 euros (EAO, 2004).

Selective subsidies are granted by the funding body on the basis of a discretionary power, since the productions are assessed according to qualitative criteria. The main reason behind the implementation of selective subsidy systems is the recognition that films must be financially supported for their cultural and aesthetical value. Following this principle, film productions are enabled to develop and sustain the national cultural identity, and thus boost the reputation of the society as a whole. Besides these cultural reasons, over time minimum economic preconditions have been attached. More and

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<sup>26</sup> Legge "Cinema" (Law "Cinema") 1213/1965, and decreto legislativo (order in council) no. 28/2004.

more often, large parts of European regulations provide both for cultural and economic requirements that films and companies must comply with to take advantage of selective contributions. Selective funding is particularly significant for our purposes, as the subsidies assigned to the 566 films analysed in this thesis are based on this system. More explicitly, the specific modalities followed in the Italian regime are fully described at paragraph 5.1<sup>27</sup>.

Unlike automatic subsidies, selective funding can be administered by bodies other than national film agencies, that is – various national, regional and local authorities. Moreover, different procedures are also provided for different kinds of productions. More specifically, different processes can be followed depending on:

- category of feature film: different procedures are provided for first and second works, co-productions, films that aim only to achieve recognition as nationally produced films.
- stage of production: specific funding for pre-production, production, screenwriting, distribution, and exhibition.
- productions other than feature films: specific modalities for short films, documentaries, animated productions, films for children.

#### ***4) Repayable subsidy vs. Non-repayable subsidy***

In an economic perspective, this distinction is extremely significant. Non-repayable subsidies scheme are explored first, as they are largely popular in the European context.

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<sup>27</sup> Besides Italy, selective subsidy systems are also used in the other four main European film industries: France, Germany, Spain, and United Kingdom; and also in Austria, Denmark, Finland, Hungary, Luxembourg, Netherlands, Poland, Portugal, Sweden, and Switzerland. French Community of Belgium also assigns selective funding to finance feature-length television productions.

The reasoning behind non-repayable funding is that public institutions consider film productions meritorious of financial support for cultural, social or aesthetic motives, but understand that the profitability of these projects is too limited to assure sufficient cash flows to refund the subsidies obtained. Even though the non-repayable funding system was widely accepted in the past, the recent tendency is to increase the companies' financial sense of responsibility in the production budget management. Accordingly, at the present time these schemes are usually opted for by those countries with a track record of limited commercial potential of their productions. It is in force in Portugal, and partially in Hungary and Belgium. During the time span analysed in the thesis, also in Italy some of the subsidies assigned to films of national cultural interest adhered to a sort of non-repayable funding scheme, due to the presence of the so-called Guarantee Fund (see ch. 5.1).

Repayable funding schemes provide for the repayment of the sums granted according to different forms and modalities. The most common types in use in the European film industries are described below.

a) *Repayable advances*: these are granted to launch a new production or distribute a project in a phase when it does not generate positive cash flows yet. The funds are repaid once the film is screened in the theatres and produces income. The repayment arrangements can adhere to different models:

- from the very first takings. The first revenues generated by the movies in the theatres are used to repay the subsidies obtained. This model was in force in France and the French Community of Belgium. More recently, the new rules are a little laxer, allowing companies to repay the financial aid obtained “wherever

possible” from the box office receipts – so that the very first revenues can be used by companies to cover other expenses.

- From the first day of release. This model is quite harsh, as the subsidies must be repaid starting from the first day the film is screened in the cinemas, irrespective of its positive or negative economic trend in the following weeks. This option is of course particularly severe for producers, as they could face scarcity of resources if the box office takings are insufficient to cover the operative costs and the sums to repay the subsidising bodies. A similar pattern has been adopted by the Scottish Film Fund to finance national productions.
- Above a definite level of takings. The subsidies obtained must be refunded – at least partially – when the films obtain revenues above a certain floor. This procedure allows companies not to be under financial pressures in periods when the movie does not generate adequate cash flows yet, and to comply with their obligations once the movie has exceeded a break-even point. This model is used in Austria and Finland. In the latter country, companies are required to repay the subsidy when the cash flows of the films amount to double the investment cost, during the first year of release.
- According to the theatre admissions. Higher the number of admissions recorded by a film, higher is the percentage of subsidies that must be repaid. This system is used in Sweden and Denmark. For instance, in Denmark film companies must repay half the subsidy if the film sells at least 30,000 tickets in the cinemas, and the total amount if more than 60,000 tickets are sold.

b) *Subsidies in the shape of loans.* Loans can be allotted to sustain the production, distribution, and exhibition of movies. They can be interest-free, but most European countries stipulate interest payments, commonly at low rates (as in Spain, Germany, and Italy), but in more limited cases at standard interest rates (Finland). In Italy, the low-rate loans are also assured by the presence of a Guarantee Fund, that covers 70 per cent of the funds assigned to films of national cultural interest, and 90 per cent of financial aid to first and second works, in case the companies are not able to refund the sums granted.

Some mixed forms exist, which provide for non-repayable subsidies and repayable advances and loans. In most cases, non-repayable funding is granted up to a defined sum, above which loans or other financing can be given on the condition that they are repaid. This occurs for some kinds of financial aid in Germany, and in Portugal, where 20 per cent of grants received by feature films and 25 per cent by short films are repayable advances.

c) *Contributions.* In this case the subsidising institutional body is a sort of co-producer in the film, so it will receive an amount of the cash flows deriving from box office revenues in proportion to the initial investment made in the production. Greek and Basque Country of Spain, and to some extent German regimes follow this scheme. Co-production schemes are also widespread in France, United Kingdom, Belgium, Denmark, and Netherlands. After the 2007 reform, Italy also adopted this scheme, as it moved from a system based on loan financing to one based on contributions to films. The key improvement for the Italian State – which does not apply to the Italian dataset specifically analysed in the thesis, based on the loan financing system

– is the opportunity to share the business risk as well as the net incomes with the linked film companies<sup>28</sup>.

### 5) *Ex ante subsidy vs. Ex post subsidy*

The last distinction should be evident on the basis of the previous analyses. *Ex ante* subsidies are those that are directly usable to companies before and during production, and usually refer to selective subsidies, in the shape of loans, repayable advances, or contributions. They can be either specific or general, designed for a single project or for companies as structural funding. All the European countries analysed provide different categories of *ex ante* funding to national film industries.

*Ex post* subsidies can be used only some months or years after the production has been released in the theatres, and commonly consist in the assignment of automatic funding proportionate to the box office revenues or attendances recorded by the film. Italy, France, Germany and Spain have fully operational *ex post* automatic funding methods, and taking into consideration minor European film industries, Austria, Belgium, Switzerland, Estonia, Hungary, Norway, Portugal, and Sweden also adopt them.

The subsidies of the dataset analysed in this thesis are entirely *ex ante* funding, since they aimed to promote the making and release in the theatre of the 566 films subsidised.

The following Table 3.4 summarises the types of public funding referring to the Italian dataset analysed in this thesis that will be introduced in chapter 5. Concisely, the subsidies analysed in the Italian dataset are for specific projects (single subsidies to 566 individual films); for specific subsidies (different procedures for features films, films of national cultural interest, and first and second works); for selective subsidies (granted if

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<sup>28</sup> For this aspect, see chapter 7.2.2.

both cultural and economic requisites are fulfilled); for partially repayable and partially non-repayable subsidies (because of the existence of the Guarantee Fund); and for *ex ante* subsidies (available to companies before production). All these issues are extensively discussed and examined at chapter 5.1.1.

Table 3.4 - Types of public funding with regard to the Italian dataset introduced at chapter 5.

To specific projects	<i>yes</i>		Structural funding
General		<i>yes</i>	Specific
Automatic		<i>yes</i>	Selective
Repayable	<i>yes</i>	<i>yes</i>	Non-repayable
Ex ante	<i>yes</i>		Ex post

Notes: Table completed on the basis of information provided in par. 3.2.4.2 together with the information on the background history of the subsidy allocation in Italy presented at chapter 5.1.1.

**3.2.4.3 Sources of public funding to European film industries**

The previous section has defined the different types of public funding used in the European countries to support their national film industries, linking this exposition to the specific dataset used in the research work. The question of the different possible sources of these subsidies has not been addressed. The most obvious source is the state budget. Although this represents a major origin of financing, it is not the only source. This section casts light on the different origins of contributions to film productions used in the European context, by analysing all the European countries with available information during the years to which the dataset examined in the thesis refers (see footnote 18 of par. 3.2.4).

- *State budget.* This often constitutes the central, if not the unique, instrument to support the national film industries: Slovenia, Slovakia, Cyprus, Latvia, and Estonia sustain national productions exclusively by means of the state budget, and the same was true of Italy before new regulations on automatic funding and tax on TV revenues came into effect. For Spain, Denmark, Poland, Norway and Poland this source covers 80 to 90 per cent of subsidies to film productions. The amount of resources that can be drawn from state budgets is in some cases fixed annually (this is so for Italy, and the subsidies investigated in the analysed dataset conform to this arrangement), but in other cases it is fixed for a period of at least four years. The five leading European film industries – that is, United Kingdom, France, Germany, Italy, and Spain (as described in par. 2.3.3) – draw heavily on state budgets, which thus constitute a primary source of financing. Taking Italy specifically, the method used to move financial resources from state budgets to film production has been discussed in ch. 5.1.1.

- *Local bodies.* This includes funding of bodies set up by regional, provincial, local authorities, or the European community. Spain and Germany are the countries with most developed regional funds, but also United Kingdom, Sweden, Belgium are active with noteworthy local funding bodies. Italy did not operate in this manner up to the new regulations in force as from 2004, which accelerated the creation of different regional funds, such as those of Sardinia, Apulia, and Friuli Venezia Giulia, but in Italy this source of funding is still limited and confined to a few cheap local productions.

- *Tax on cinema tickets.* This is one of the oldest sources of funding, having been in force in many countries since the middle of the 20<sup>th</sup> Century. It has extensive application in Germany, France, Greece, Portugal, Sweden, Romania, and Czech Republic, covering

up to 25-50 per cent of the total funds allotted to their respective national film industries, while major countries such as United Kingdom and Spain abandoned it in the 1980s. In Italy contributions proportionate to the box office takings recorded in the cinemas were introduced by the Ministerial Decree of 16<sup>th</sup> July 2004.

- *Tax on TV revenues.* Although a limited number of countries resort to this source to fund their film industries, the amounts disbursed are very substantial to the extent that this source is comparable to the state budget aid in other countries in terms of the sums allotted. Portugal, Netherlands, and Romania allocate considerable resources by applying taxes on TV revenues, but without doubt France is the reference model, given that about two thirds of funds managed by the national film board (CNC) derive from levies on TV receipts. Italy has introduced taxes on TV revenues since 1998, as a result of a rule that imposes on the main Italian television companies RAI (publicly owned) and Mediaset (private firm) the payment of taxes from revenues of the films projected on their channels<sup>29</sup>.

- *Tax on videocassette and DVD sales.* This is an additional source of financing whose importance is strategic due to the increasing weight of secondary markets in the generation of film incomes. In this case, the base for funding is not the amount of revenues generated by TV stations or publishers, but by the retailers. Germany and France are on the cutting edge in this field, and to a lesser extent Romania.

- *Cable operators contributions.* Similarly to the previous source, in this case the funding is assured by agreements concluded with operators of cable systems. This

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<sup>29</sup> Law 122, dated 30<sup>th</sup> April 1998, published on the Official Gazette no. 99.

option is still limited in amount and diffusion. Significant instances have been observed in the French Community of Belgium.

- *Other taxes.* In the same way, special taxes can be fixed to assure additional funds to the national film industries. The peculiarity here is that the base is not revenue produced by allied industries or correlated operators: Estonia has assured funds to cinema through taxes on tobacco, while Hungary has taxed cultural products and services, but also technological products to this end.

- *Voluntary contributions from broadcasters.* This a specific form of funding, since TV public broadcasters can decide to invest directly in subsidy systems, through a formal agreement concluded with the national film institutions and the appropriate Ministry. Since it is a non-mandatory form of funding, the relative economic weight cannot be forecast accurately year by year; however, different countries such as Germany, Sweden, Denmark, Finland, Belgium, and Switzerland have achieved satisfactory results from this source.

- *Lotteries.* Some of the proceeds obtained from lotteries are distributed to activities of cultural or social interest. The striking case is that of the United Kingdom where, since 1993, a predefined amount of the revenues deriving from a National Lottery are used to support the national film production. The only other European countries that use this source of financing are Finland, Greece, and Switzerland.

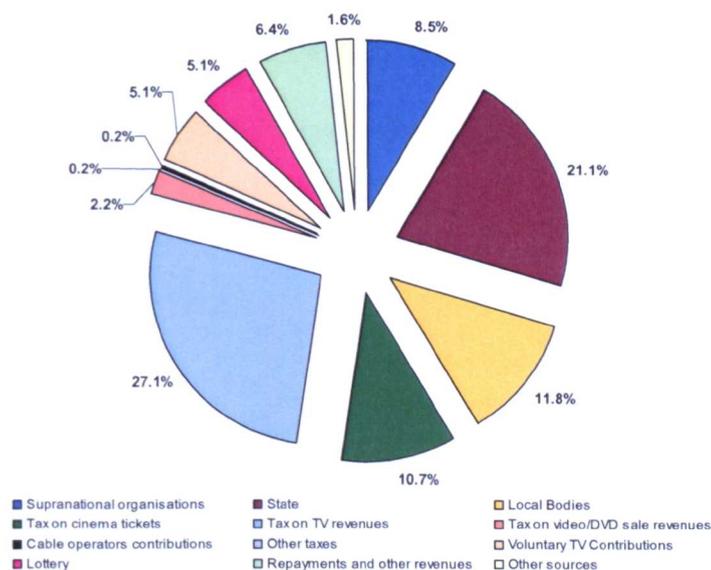
- *Repayment of funds.* Another method is represented by the reimbursement of the resources that the film companies obtain through taking advantage of some of the sources of funding previously identified. Most of financial aids to the European film industries are repayable rather than non-repayable, but it is hard to quantify the amount

of loans that are actually refunded, and the detail of published information provided by states on this topic is limited. Data provided by German institutions report that about 5 per cent of subsidies granted are repaid; also, French and Polish institutions say that repayments of funds represent a percentage between 8 to 13 per cent of the total budget allocated to sustain the respective national film productions (EAO, 204).

- *Supranational organisations.* The two most important programmes are: Eurimages, which was set up in 1998 and belongs to the Council of Europe, encompassing 33 Member States; and the Media Programme, which was initiated by the European Union in 1991 and sustains the European audiovisual industry. None of the subsidies belonging to the dataset analysed in the thesis derive from supranational organisations.

Figure 3.9 offers an overview of the relative weight of the different sources of funding to European film industries during the period to which the empirical analyses of this work refer to.

Figure 3.9 – Source of funding to European film industries



Source: European Audiovisual Observatory

Notes: Data weighted on the basis of data available on 31 European States, year 2002

## **3.3 Empirical Literature - A Systematic Review of Empirical Studies**

### **3.3.1 Introduction**

This section, the second part of the chapter, offers a systematic review of empirical studies conducted by other researchers. The extent of studies available is different depending on the specific subject reviewed, as is clarified below. The section is broken down into two sub-sections.

- Par. 3.3.2, ‘Public policies and subsidies’’: this investigates the contributions on different topics about this extensive field of study.
- Par. 3.3.3, ‘Risk and return trade-off’’: this analyses contributions on frequency distribution of revenues; The effect of early viewers in shaping the uncertainty of the industry; Frequency distributions of profits, losses, and rates of return; superstars and production budgets; the project finance perspective and the diversification approach.

### 3.3.2. Public policies and subsidies

While numerous empirical studies have been conducted on the risk and return trade-off in the film industry, investigations of subsidy and state support to the sector are more limited. The essential points of that debate mainly concern the aesthetico-ethical and economic rights and wrongs of financing movies through public money.

On the basis of their analysis of all the movies produced in Italy between 1985 and 1996, Bagella and Becchetti assert that the public funding of movie productions is justified, provided that it refers to those movies that can be considered a form of art. They identify a bipolar product range along which movies are positioned. The opposite extremes of this range maybe considered the so-called “film d’auteur”, distinguished by low capital intensity and high artistic merit, and the “special-effects” films, with high capital intensity and lower artistic merit. Accordingly, the first category of movies would be merit public support, while the second should be excluded (Bagella, Becchetti, 1999). In another study, based on the contemporary German film industry, Cooke points out that the use of subsidies to support the film industry seems to be increasing. Thus, it is overstating the argument to suggest that the European film industries have moved away from a subsidy-based model to a “free market” model that relies on private investment. However, he recognises the fact that “publicly at least, both politicians and industry officials believe that this is the direction in which the industry should go” (Cooke, 2007, page 42). Behind the publicly stated need to move from a state-supported to a “free market” model, there are also ulterior financial motivations. Some researchers have actually perceived a strong concern that the persistence of state subsidy will be

likely to inhibit the inflow of fresh private capital that the film industry needs (Fischer, 2006; Anon, 2006). In the Italian context, the different state support measures in favour of the film industries are justified in virtue “of the important role the film industry has in the diffusion of cultural contents” (La Torre, 2006, page 70). Accordingly, the support policies have been built up with regard to the specific economic and productive needs of the reference national market, but the institutional support to the film industry can be carried out generally at three levels: transactional, national, and local. In any case, La Torre emphasises the risk implied in the state support model, as the national and European institutional funds are destined to decrease, so openness to market finance will become hence an inevitable route. Aimed at strengthening this concept is the contribution from Priante *et al.*, who clearly state that at the European level the theme of the abolition of public intervention in the film industry is on the agenda, since it is supposed that the abuses and management modalities of the resources available have given rise to a deep-seated inefficiency. State support would not enable the objective of enhancement of the national cultural industry to be achieved, and is prejudicial to free competition on the global market (Priante *et al.*, 2006, page 126).

At a more general level, researchers have tried to debate the justification of public subsidy of the arts in general, of which film production is a central branch. The supporters base their approval of a government’s patronage of the arts on different rationales that are explained as follows, according to different empirical contributions. First, arts subsidy would be justified because of its “option value”, in the sense that even if current citizens do not wish to engage with the arts, the existence of the arts would allow future generations to benefit from them (Baumol, Bowen, 1996). A second reason

would be related to the steady industrial growth, which could rapidly modify the preferences of consumers who are “acquiring leisure faster than the preparation for using it” (Scitovsky, 1972), so state support would help consumers to get pleasure from their lives. However, the central point in justification of state intervention is probably represented by the objective of developing and supporting cultural identity by means of the creation of masterpieces that enhance the influence and reputation of national cultures. Baumol recognises that – according to empirical studies “there is some feeling that a nation is judged in terms of its cultural accomplishments as well as its economic, military and other achievements” (Baumol, 1995, page 52). Following his argument, the cultural achievement would be provided effectively only with the aid of the public sector. A further concrete motivation in support of public sector involvement is the proved evidence that the production of a film or other artistic production or performance in a certain area produces positive externalities for the activities relating to that area. West (1987) calls these positive externalities “uncontracted benefits”, so recognising the importance of financing the so-called “merit goods” – that is, goods of higher virtue, whatever they mean (Seaman, 1981). Another economic motivation is the so-called “Baumol’s disease” which states that the industrial revolution has caused a substantial increase in art production costs compared to more standardised goods that are the output of Tayloristic industrial processes. Thus, for items such as education and health care, the cost and prices of products offered go up much faster than those of the average industrialised good, and public support would contribute hence to reducing this persistent financial handicap (Heilbrun, 2003). Finally, a social motivation lies at the bottom of the backers’ theories. Like education, the arts generate higher benefits than

those directly visible, as they would contribute to forming better individuals, more productive citizens, to decreasing crime, according to what the economists define as “spillovers” (Baumol, 1995, page 52).

As further developments of the debate concerning the soundness or inappropriateness of public subsidies, different arguments have been brought into play. Harris states that professional arts could not function effectively without adequate government patronage to the extent that – inverting the common thought – “in the future their very existence is likely to depend upon public subsidy” (Harris, 1973, page 407). Cameron recognises that subsidy policies bring to market overproduction, but this would be indispensable in social terms, to meet the option demand for specific kinds of productions (Cameron, 1993). In contrast, Grampp maintains that there is no economic rationale behind arts subsidies in any form (thus, films included) and they should be abolished. The two conditions to meet to economically justify state support should be: first, the marginal rate of return to subsidised activity is no less than that of any other activity in which the same funds could be used; second, individuals who receive the subsidy should pay for it, and in proportion to the benefit they get (Grampp, 1987). Taking the British theatre arts as subject of analysis, Collins and Hand review the cases to the merits of systematic state aid to not-for-profit organisations, with regard to both production and consumption benefit outlooks. Although they acknowledge the arguments adduced by previous researchers in justification of subsidy policies, they reach the conclusion that the reason for persistent art subsidy “is certainly not compelling”, particularly with reference to “the alleged external consumption benefits, and the absence of real evidence presented for the persistence of Baumol’s cost disease” (Collins, Hand, 1998, page 26). More

controversial is the contribution by Lewis and Brooks, who linger over the debate about public funding that is destined to film productions dealing with controversy typical of certain issues, such as abortion, homosexuality rights, capital punishment, censorable scenes, etc. Even though the commentators recognise the disputability of subsidising productions that are offensive to some viewers, they conclude: “the cost of eliminating the small number of controversial grants ... may be too high in terms of the chilling effect on artistic freedom” (Lewis, Brooks, 2005, page 15).

Aside from the opposing contributions concerning the potential justification, a specific empirical analysis has assessed the economic validity of public subsidy in financing a large population of films released in Italy between 1985 and 1996. According to its authors, the investigation proves that “subsidised films do not have a significantly lower performance in the econometric analyses in terms of total admissions and revenues” although subsidised movies report “on average 83 per screen daily admissions against 884 for non subsidised films” (Bagella, Becchetti, 1999, page 246). Taking the theatrical admissions as a reference variable to measure the commercial validity of a film, the analysis would clearly show the *inefficacy* of state support in determining the success of financed productions.

A final topic debated in the literature concerns the typology of public aid to the film industry. One interesting train of thought changes the perspective in which the issue is usually regarded. In fact, while most discussions about arts and film funding focus on direct subsidises to companies, the bulk of public funding is indirect, mainly in the form of tax revenues forgone (Brooks, 2004). Analysing the US market, Brooks demonstrates that every dollar in direct federal funding to art in the United States is accompanied by

about 14 dollars in indirect aid. Seen from another point of view, some researchers assert that direct and indirect financing are basically different on account of their different political motivations (Zelinsky, 1998), although from an economic angle they are undoubtedly comparable, as one category commands an allocation of the state's tax revenues up front, while the other works by means of tax exemptions (tax revenues foregone by the state) (Davidson Schuster, 1987). The last clarification is particularly significant as – even though it is evident to most of academics – it is often difficult to understand for practitioners, among which are the managers of film companies. Empirical evidence shows that the indirect schemes of public support of culture and the film industry, which are largely used in the US, would have proved to be more effective than the direct method, which is still predominant in the European film industries (Cowen, 2006).

Table 3.5 - Public policies and subsidies

<i>Subsidies and the film industry</i>	
Bagella, Becchetti, 1999	Only “Films d’auteur” (as opposed to “special-effects” films) would be meritorious of public support
Cooke, 2007	The use of subsidy is increasing, but there is a need to move from subsidy-based to free market model
Fischer, 2006 Anon, 2006; Cooke, 2007	Existence of subsidy inhibits the use of private capital in the film industry
<i>Subsidies and the Italian film industry</i>	
La Torre, 2006	Subsidies are justified in virtue of the important role of the film industry, as in the diffusion of cultural contents
Priante <i>et al.</i> , 2006	Due to the inefficiency and abuses of the present financing model, subsidies should be abolished
<i>Motivation in favour of arts subsidy</i>	
Baumol, Bowen, 1996	Arts represent an “option value” for future generations
Scitovsky, 1972	State support would help consumers to get pleasure from their life
Baumol, 1995	A nation is also judged in terms of its cultural accomplishments
West, 1987	Arts and films produce positive externalities in the area where they are produced
Seaman, 1981	“Merit goods” are goods of higher virtue that need to be supported
Heilbrun, 2003	According to “Baumol’s disease”, increases in art production costs and prices are higher than those of standardised goods
Baumol, 1995	Arts contribute to forming better individuals and citizens
<i>Different contributions on film and art subsidies</i>	
Harris, 1973	Future existence of the arts depends on public subsidy
Cameron, 1993	Market overproduction caused by subsidy policies is indispensable in social terms
Grampp, 1987	There is no rationale behind arts subsidies in any form and they should be abolished
Collins, Hand, 1998	The reason for persistent art subsidy is certainly not compelling, particularly with regard to the alleged external consumption benefits, and the absence of evidence about Baumol’s cost disease
Lewis, Brooks, 2005	When the arts deal with controversial issues, the cost to freedom of expression of eliminating the small number of grants involved may be too high
Bagella, Becchetti, 1999	Subsidised films do not have significantly lower results at the box office compared to non-subsidised films
Brooks, 2004	The substance of state support is represented by indirect funds rather than direct funds
Zelinsky, 1998	Direct and indirect funding are basically different for different constitutional motivations
Davidson, Schuster, 1987	From an economic angle direct and indirect funding are undoubtedly comparable
Cowen, 2006	In the US, indirect financing is proved to more effective than direct financing

### 3.3.3 Risk and return trade-off

While the studies investigating the causes determining demand for movie theatre experience are quite scanty in number (Collins *et al.*, 2005; Collins, Hand, 2005; Cameron, 1986; Cameron, 1990), empirical analyses to estimate movie profitability and the risk-return of the film industries are substantial and diverse, but they have different viewpoints. Essentially the most debated are those concerning the relationship between the cost and the profitability of motion pictures. In this perspective, it is important to notice that empirical outcomes about the frequency distributions of film revenue are significant and supported by many researchers' contributions; more limited are the conclusions achieved for relative profitability indicators, such as rates of return or profits. However, even here the observations that can be made are sufficiently significant to constitute a starting point for this work of research.

A different trend of studies has dealt with the risk and return trade-off in the industry, trying to establish empirically if the presence of specific factors concerning a production (a famous director, a renowned cast of actors, a specific genre, a movie rating, a good review, the sequel of a previously released film, and so on) are able to guarantee a certain amount of revenue, thus decreasing the risk and return trade-off related to the making of a motion picture.

The main results of all these different empirical contributions are analysed as follows.

### ***3.3.3.1 Frequency distributions of revenues***

One of the bibliographic cornerstones when analysing the risk and return profile of the movie business refers to the results derived from observations and experiments from De Vany (and with other authors). The main financial facets distinguishing the industry can be drawn from a study based on a population of 2,015 films released in the closed interval 1984-1996, in which the authors conclude that the probability distribution of box-office revenue has infinite variance, with a “heavy” upper tail, which demonstrates that the business is dominated by a few blockbuster productions (De Vany, Walls, 1999). The revenue distribution “has fatter tails than log normal and mass points at the far right, where the superstars are located” (De Vany, Walls, 1996, page 1512). An even more interesting conclusion the authors reach empirically is that managers are likely to predict the expected mean revenue, since this value really exists and is finite, but – this is the central point – the confidence interval of the expected result is without bounds. In a following empirical study based on the same dataset, they substantiate that mean revenues increase as costs rise, but the variance associated with this relationship is extreme. In addition, it is also proved that the connection between cost and box-office gross is virtually identical when breaking down movies by fifteen main genres, and also by rating (G, PG, PG13, and R-rated films), confirming the impossibility of predicting the profitability of a movie by means of a pre-established reference variable (De Vany, 2004, chapter 6). Investigating a dataset of 216 films released in the theatres between January and November 1998, Collins *et al.* prove that the results found by De Vany and Walls in the US context are in agreement with those obtained in the UK market. They show that the statistical distribution of film revenues in the UK has “unbounded

variance”, undermining the assumptions of the classical linear regression model (Collins *et al.*, 2002). In addition, they also show that some genres are revealing in affecting the box office revenues of films, but suggest a refined analysis of this result, as “even though some genres are significant, the effect is less certain”, and also “the genre results may be artefacts of the data and as such, the genre variables are best regarded as control variables” (Collins *et al.*, 2002, page 352).

Other researchers reach concordant conclusions by analysing a database consisting of the films produced in Italy between 1985 and 1996. The distributions of movie box office performances analysed are highly skewed, with an extremely high probability of lack of success, which explains why producing a film is considered such a risky bet (Bagella, Becchetti, 1999). It must be noted that all the distributions examined are right-skewed, since the magnitude of the mean of motion picture box-office revenues is heavily weighted by “a few extreme revenue outcomes in the upper tail whose chances (*ex ante*) are extremely small”. As a consequence, in the film industry, “success is tied to extremal events, not the average; the average is driven by the rare, extremal events” (De Vany, Walls, 1999, page 71). The importance of this last conclusion has led to the coinage of the so-called “Murphy’s Law” expression that – according to a study conducted in the UK – has observed that 20 per cent of films earned 85 per cent of the revenue in 1997, and 83 per cent in 1998. Almost identical results have been obtained in the US (20 per cent of films produced 80 per cent of box office takings). Sedgwick and Pokorny integrate De Vany’s studies with their own. In fact, while De Vany’s analyses derive from an environment that is dominated by independent production companies, the two authors focus on the more controlled studio system (Sedgwick, Pokorny, 1998). The

methodological procedure makes it possible to corroborate the findings reached by the other investigators. In particular, they establish a positive association between production budget and both box-office revenue and its variability. So, increasing budgets usually generate higher box-office takings, but also a growing uncertainty to be managed by mitigative strategies. The level of variance in the film industry is also due to the “rapidly diminishing marginal utility with any single product” (Sedgwick, Pokorny, 1998, page 197) – that is, the expected utility from consuming a new film is considerably higher than that of repeat viewing.

### ***3.3.3.2 The effect of early viewers in shaping the uncertainty of the industry***

One of the features – empirically investigated by researchers – that shapes the uncertainty surrounding the film industry and explains the *ex ante* unpredictability of results is the influence of early viewers with the regard to the high or low revenues a movie will record in the following weeks. This effect is known with different names: word of mouth, herd behaviour, contagion, network effects, bandwagons, path-dependence, momentum and information cascades.

Based on an empirical study on the pattern of box office revenues, the rank or position of a specialised journal, and the length of run of the film in the theatres, De Vany and Walls emphasise the importance of the early-viewers effect in determining the trend of box office takings of a film, and reach the conclusion that “film audiences make hits or flops and they do it, not by revealing preferences they already have, but by discovering what they like” (De Vany, Walls, 1996, page 1493). This phenomenon is also explained analytically in a following paper, which defines it as “information cascade”: “movies are

an ideal testing ground for information cascade models” (Lee, De Vany, 2001, page 593). The importance of this feature in shaping the risk of the industry is confirmed by the empirical studies conducted by Austin, who proves that positive “word of mouth” can increase box office takings, in opposition to negative “word of mouth”, which can shrink box office receipts. Like other “early viewers” effects, word of mouth “is viewed as an especially potent variable affecting the success of a film” (Austin, 1989, page 72). The rapidity by which the characteristics of successful films change, which contributes to increasing the volatility of the film business, is another investigated topic. Based on a *Variety* compilation of all-time most successful box office films as available in January 1980, Smith and Smith provide evidence that the features of blockbuster productions have changed significantly over a period of forty years. Therefore, according to this study the factors that are likely to increase the possibility of generating higher revenues at the box office at the present time would be different from those that could produce the same effect in a different period. However, it would be possible to build up empirical models relating a film’s attributes to the likelihood of viewer demand (Smith, Smith, 1986).

Table 3.6 - Risk and return trade-off: revenue and uncertainty

<i>The frequency distribution of film revenue</i>	
De Vany, Walls, 1999	Probability distribution of box-office revenue has infinite variance, ... heavy upper tail, ... the business is dominated by a few blockbusters productions
De Vany, Walls, 1996	The revenue distribution has fatter tails than log normal and mass points at the far right, where the superstars are located
De Vany, 2004	Mean revenues increase as cost rise, but the variance associated to this relationship is extreme... the relationship is the same breaking down movies by genres and rating
Collins <i>et al.</i> , 2002	Statistical distribution of film revenues in the UK has unbounded variance... this undermines the assumptions of the classical linear regression model
Bagella, Becchetti, 1999	The distributions of movie box office performances are highly skewed, with the extremely high probability of low success films
De Vany, Walls, 1999	Extreme revenue outcomes in the upper tail whose chances are particularly small ... success is tied to extreme events, not the average; the average is driven by the rare, extreme events
Sedgwick, Pokorny, 1998	Positive association between production budget and both box-office revenue and its variability. Level of variance is also due to the rapidly diminishing marginal utility with any single film
<i>Effect of early viewers in shaping the uncertainty of the industry</i>	
De Vany, Walls, 1996	Film audiences make hits of flop not by revealing preferences they already have, but by discovering what they like
Lee, De Vany, 2001	Movies are an ideal testing ground for information cascade models
Austin, 1989	Word of mouth is an especially potent variable affecting the success of a film
Smith, Smith, 1986	The factors which can increase the possibility of generating higher revenues at the present time are likely to be different from those that produce the same effect in a different period

### ***3.3.3.3 Frequency distributions of profits, losses, and rates of return***

Extending the analysis on risk and return trade-off from absolute values of profitability (such as revenue) to relative indicators of profitability (such as profits or losses, and especially rates of return), the empirical contributions are less numerous. However, they are sufficient to indicate the extreme variance that distinguishes the industry. The present thesis will contribute to deepening this aspect, which lacks abundant empirical

analysis at the moment, by means of a complete study conducted on more than 1,600 US films first, and then about 600 Italian films.

Referring to the studies available, by investigating a large population of US movies, empirical results show that profit distribution is asymmetric and sharply peaked, so distinguished by high skewness and considerable kurtosis. The mean is finite but the variance is infinite. Also, by investigating profits rather than revenues it is demonstrated that the movies are deeply riskier than what is implied by a Gaussian distribution, as “the heavy-tail propriety of this distribution implies that events of extreme magnitude have a probability that is much larger than a Gaussian distribution would indicate” (De Vany, Walls, 2003, page 1055). The contribution is relevant in that it extends the result on the relationship between cost and box office takings, as it states that the empirically discovered stable distribution represents the correct statistical model of motion picture profit, incorporating its underlying components of cost, revenue, and also returns. The empirical analysis on the frequency distribution of film returns emphasises the extreme volatility of the population examined as – based on the data set used – the standard deviation is about 6, with values of skewness of about 29.3, and even kurtosis of 940. These results are substantiated by another study, which uses as data a standard industry source for published information on the motion pictures, and which supports that return and profit distributions are “highly skewed”, have “infinite variance”, are “not symmetrical”, because of the presence of a few outliers in the upper tail, and the “average and expected values needn’t converge and are unstable” (De Vany, 2004, page 120). It is possible to infer that a “typical” movie does not exist, and as a consequence of the huge influence of few hits the mean return or profit is not representative, and the

median values are lower than mean. Also, there is evidence of “decreasing returns to budget” (De Vany, 2004, page 138). The analyses conducted by Sedgwick and Pokorny are concordant. By analysing an ample population of films released in the periods 1929/1930-1941/1942, the authors find that – while a positive relationship between costs and revenues can be identified – the scatter plot of profits against film costs is completely random, and a high production budget is hence not a guarantee of higher returns. Expensive films such as *The Wizard of Oz*, which cost \$3.5 million, generated a loss of about \$0.5 million, while cheaper films such as *Love Finds Andy Hardy* produced profits of more than \$1 million, with a cost of \$0.3 million (Sedgwick, Pokorny, 2005). The same results are supported by a further paper of theirs, based on the films produced between 1921 and 1940 by the US major Warner Bros. The unpredictability of the industry is also indicated in their finding that “low to medium cost films were more reliable in the sense that they were less likely to make losses”, but their “contribution to annual profits was necessarily limited”. On the contrary, higher cost films “were more likely to generate higher profits, but at an increasing risk of incurring losses” (Sedgwick, Pokorny, 1998, page 206). The extreme uncertainty surrounding movie production and the impossibility of predicting either expected revenues or profits (and hence rates of return) explain why the film business is considered one of the more risky industries (Balio, 1995).

#### ***3.3.3.4 Superstars, publicity signalling and production budgets***

One of the most interesting aspects regarding the risk and return profile of the film industry that has been consistently analysed by researchers is the use of so-called

“publicity signalling” in order to increase the possibility of getting higher revenue, and hence reduce risk (Sedgwick, Pokorny, 1998, page 197). It is about strategic devices, such as famous actors, renowned directors, genre, number of awards or nominations gained by the members of the production crew, sequels of past films and, of course, amount of production budget, that would be likely to reduce the uncertainty about the performance of films at the box office. Several empirical analyses have been carried out to understand if such “recognising signs” are effective and, most of all, if the possible economic benefits could be predicted. The area of study is ample, but mainly refers to the evaluation of the so-called “superstar phenomenon” carried out by Rosen, who emphasises the importance of superstars to generate satisfactory amounts of revenues (Rosen, 1981). In the same vein are other studies (Chung-Cox, 1994; Hamlen, 1991, and 1994).

Hereafter, the main empirical contributions on the topic are presented. The relevant point to notice is that most of them come to the conclusion that publicity signals, such as stars, usually influence the final level of revenue, but – what is important – it is impossible to predict the possible results, since “each film is unique and plays its own way” (De Vany, 2004, page 12), and the commercial result is completely unknown until a film has been screened in the theatres (Austin, 1989).

Simonet studied the relationship between the inclusion of famous directors, stars, and awards achieved by members of the cast, and box office performance of films, with regard to the US market. He found that a relationship exists, but correlation and prediction do not necessarily entail causal connections. Based on a sample of very successful rentals, the author states that as “arthritis pain may predict rain, but it surely

does not cause rain ...” in the same way for films “the predictive findings of this study do not imply causal relationships, but explanations underlying the findings may lead to causal interferences or hypotheses” (Simonet, 1977, page 155-156). Collins *et al.* investigated the role of stars and good reviews by working on a population of 216 films obtained from *Empire* film magazine in 1998-99, and reached conclusions quite concordant with those of Simonet. They found that both the use of stars and obtaining good reviews increase the probability of success of a production, but unlike the situation if a linear model were applicable, a “star or good review may be associated with a hit, but the impact is far from certain” (Collins, *et al.*, 2002, page 352). Awards, nominations, and time of release were the subject of investigation by Sochay, using a population of films released in the United States and Canada between 1987 and 1989. He established that these variables are significant in affecting the box office result, although the impact is very uncertain, but he found that genre is an insignificant marker in explaining the different performances of movies (Sochay, 1994). Wallace *et al.* essentially focused on the role of stars, but also considered other variables, such as rating, year of release, genre, and length of the production. They found evidence that a film’s likely cumulative, weekly, or opening-week takings are enhanced by the rank of the renowned actor associated with it (Wallace *et al.* 1993). Analysing 960 top 20 films released in the United States and Canada between 1940-1955 and 1960-1995, Albert showed that an established star does not guarantee the commercial success of a movie, because so many other inputs can affect this result. Nevertheless, famous actors are very important for film companies because “stars give the film producer one consistent way in which to understand consumption patterns in relation to successful films” (Albert,

1998, pages 264-5). In that light, the star is not a key ingredient in determining the success of a film, but is often the key variable to getting a film made. Even more restrictive are the benefits that celebrities might bestow on movie revenue, according to a study conducted on 200 films released between 1991 and 1993 by Ravid. He found that “stars play no role in the financial success of a film”, even though just considering univariate tests would support the industry view that renowned actors can increase box office receipts (Ravid, 1999, page 488). The relative influence of stars has also been empirically investigated by Elberse, who showed that while stars are likely to impact the level of film revenues, the predictability of this result is almost nonexistent, and the author does not “find support for the idea that stars also drive the valuation of film studios or the media conglomerates to which they belong” (Elberse, 2006, page 28).

Neither genre nor star can ensure that a production will become a blockbuster (De Vany, 1996) since predicting a hit is virtually impossible: no one would produce *Forrest Gump* until Tom Hanks and Robert Zemeckis consented to give up their usual millionaire standard contracts and accept a share of the profits generated by the movie (Weinstein, 1998). The movie then collected about \$250 million in the US theatres alone, with just \$42 million of costs (our dataset on *AC Nielsen* data). A further important point regarding stars and renowned personnel must be considered: although they could constitute “publicity signalling” able to generate higher revenues, their inclusion in the production crew is also very risky because they are “sunk costs”. The money spent “up front” on famous and expensive actors cannot be recovered if the movie does not attract enough ticket buyers to cover the costs, so the film companies that decide to resort to big names must face a considerably higher risk and return trade-off (De Vany, Walls,

2003). This observation is supported by Sedgwick and Pokorny, based on a significant dataset of films derived from Warner Bros output during the 1930s. The minor impact that the use of high rate of return stars has on the performances of the films analysed “is probably to be explained by the high costs of using such stars, and therefore the high profitability that such films required in order to cover these costs” (Pokorny, Sedgwick, 2001, page 177). According to their analysis of the dataset, the inclusion of stars is not an effective strategy in the production of expensive movies. Similar observations concerning the hiring of stars and high budget movies are made by Ravid (1999). Further corroboration of the role of stars comes from a study based on a population of Italian films produced between 1985 and 1996, which shows empirically that the economic results of movies at the box office is influenced by the presence of famous actors in the cast, but these actors have positive nonlinear effects on movie box office performance (Bagella, Becchetti, 1999).

Only one empirical contribution is extremely drastic in relation to the superstar phenomenon theory, which it considers is almost completely uninfluential. Anderson states that the proliferation of new media channels, particularly the internet, will make niche products more prevalent, in a way that audience will decide even more than now which films will be successful (Anderson, 2006). However, this analysis is centred on a very specific context, without taking traditional distribution channels into consideration. Other examples of publicity signalling have been studied empirically. In addition to stars and awards, Litman examined the influence of Motion Picture Association of America, rating and genre in determining the level of revenues (Litman, 1983). Genre in particular has been often subject of investigation, and different studies have not always

led to concordant conclusions. Based on a statistically reliable population of 216 films, Collins, Hand and Snell found Romantic Comedy significant as a dummy variable in explaining film revenue, and – though to a lower extent – Horror, Action and Adventure, but the dummies exhibit large standard errors, so the real effect of genre remains uncertain (Collins *et al.*, 2002).

A good review is also considered as a possible bandwagon able to enhance box office takings. Affirming that the movie's aesthetic value is inversely related to its entertainment value, Hirschman and Pieros provide evidence that an explicit and obvious connection between positive reviews and success at the box office cannot be postulated (Hirschman, Pieros, 1985). Reviews, as well as other variables such as ratings, production budgets, and the presence of star performers, are variables investigated to estimate film rentals in the studies of Prag and Casavant. Their innovative contribution is that a link between these variables and advertising costs can be identified. In their empirical analyses they conclude that “among the many factors ... quality and marketing expenditures are important determinants”, and other publicity signalling markers are “only important determinants when marketing is not included”. Therefore, advertising costs would be positively connected to production costs, Academy Awards won and the inclusion of famous actors (Prag, Casavant, 1994). Sequels of past movies are another category of “recognising signs” that should be able – according to producers – to lessen the risk and return trade-off, as a certain level of revenues should be guaranteed by the support of previous viewers for the past movie. Collins *et al.* discredit this commonplace, through empirical instances. While a sequel can be a less risky strategy than the production of a new film, empirical evidence shows

that “sequels do not normally outperform their predecessors at the box office” (Collins *et al.*, 2002, page 346). The dataset built up in this thesis will further corroborate the evidence found by Collins *et al.*: *The Blair Witch Project* collected \$93.5 million of revenues in the US theatres, while its sequel, *Book of Shadows: Blair Witch 2* generated about \$26 million at the US box office, but with costs twentyfold the first one. *Home Alone 1*, and its sequels *Home Alone 2*, and *Home Alone 3* collected respectively about \$237 million, \$136 million, and \$21 million at US box offices, and similar examples to mention would be numerous. Of course, it must be stressed however that the fact that sequels do not normally outperform their predecessors at the box office does not mean that their financial results are not worth having, or least not until the later entries in the series lose money.

The relationship between cost and profitability has been already investigated at the beginning of the literature analysis of risk and return trade-off. Two further contributions are reported here. Litman used distributor film rentals rather than box office revenues, and found that production budgets - together with ratings, reviews, some genres, period of the year of release, and achievement of awards or nominations - have noteworthy effect on economic performance of films (Litman, 1983). The unpredictability about the positive effect is such that in his empirical investigations Ravid states: “big budgets do not contribute to profitability. If anything, they may contribute to losses” (Ravid, 1999, page 488).

Table 3.7 - Risk and return trade-off: rates of return and production budgets

<i>Frequency distributions of film profits, losses, and rates of return</i>	
De Vany, Walls, 2003	Profit distribution is asymmetric and sharply peaked, thus distinguished by high skewness and considerable kurtosis. The mean is finite but the variance is infinite.
De Vany, 2004	Return and profit distributions are highly skewed, with infinite variance ... are not symmetrical ... the average and expected values needn't converge and are unstable
De Vany, 2004	Mean return or profit is not representative ... There is evidence of decreasing returns to budget
Sedgwick, Pokorny, 2005	Scatter plot of profits against film costs is completely random, ... high production budget is hence not a guarantee of higher returns.
Sedgwick, Pokorny, 1998	Low to medium cost films are more reliable, as they are less likely to make losses, but contribution to annual profits is limited. Higher cost films could generate higher profits, but at an increasing risk of incurring losses
Balio, 1995	The film business is considered one of the more risky industries: impossibility of predicting either expected revenues or profits
<i>Superstars and production budgets</i>	
Sedgwick, Pokorny, 1998	"Publicity signalling" can be important to increase the possibility to get higher revenue, and hence reduce risk
Rosen, 1981 Chung-Cox, 1994 Hamlen, 1991 and 1994	Emphasis on importance of superstars to generate satisfactory amounts of revenues
De Vany, 2004	Stars usually influence the final level or revenue, but it is impossible to predict result for a particular film
Austin, 1989	The commercial result is completely unknown until a film has been screened in the theatres
Simonet, 1977	The use of stars, famous directors and awards does not imply causal relationships, but may lead to causal interferences or hypotheses
Collins <i>et al.</i> , 2002	Stars and good reviews increase the probability of success of a production, but unlike the situation if a linear model were applicable, a star or good review may be associated with a hit, but the impact is far from certain
Sochay, 1994	Awards, nominations, and time of release are significant in affecting the box office result, although the impact is very uncertain. Genre is an insignificant feature
Wallace <i>et al.</i> , 1993	A film's likely cumulative, weekly, or opening-week takings are enhanced with the rank of the renowned actor associated with it
Albert, 1998	Although famous actors are important they are not a key ingredient in determining success of films
Ravid, 1999	Stars play no role in the financial success of a film, even though just considering univariate tests renowned actors could increase box office receipts
Elberse, 2006	Stars impact revenues but predictability of this result is almost nonexistent ... stars do not drive the valuation of film studios to which they belong
De Vany, 1996	Neither genre nor stars can ensure that a production will become a blockbuster
De Vany, Walls, 2003	Inclusion of stars in the production crew is also very risky because they are very expensive "sunk costs".

Pokorny, Sedgwick, 2001	Use of high rate of return stars has minor impact on film performances... probably due to the high costs of using such stars, and the high profitability that such films required in order to cover these costs
Ravid, 1999	Inclusion of stars is not an effective strategy in the production of expensive movies
Bagella, Becchetti, 1999	Movies box office results are influenced by the presence of famous actors in the cast, but these actors have positive nonlinear effects on movie box office performance
Anderson, 2006	Proliferation of new media channels will make niche products more prevalent ... audience will decide even more than now which films will be successful
Litman, 1983	MPAA rating and genre affect the level of box office revenues, but these are not easily measurable
Collins <i>et al.</i> , 2002	Romantic Comedy and to a lower extent Horror, Action and Adventure are significant in explaining film revenues, but the real effect of genre remains uncertain
Hirschman, Pieros, 1985	An explicit and obvious connection between positive reviews and success at the box office cannot be postulated
Prag, Casavant, 1994	Quality and marketing expenditures are important determinants... advertising costs are positively connected to production costs, awards and inclusion of famous actors
Collins <i>et al.</i> , 2002	Sequels do not normally outperform their predecessors at the box office
Litman, 1983	Production budgets – and also ratings, reviews, some genres, period of the year of release and awards/nominations – have noteworthy effect on the economic performance of films
Ravid, 1999	Big budgets do not contribute to profitability. If anything, they may contribute to losses

### ***3.3.3.5. Project finance perspective and diversification approach***

The main limitation of all the papers that have dealt with the portfolio approach in the film industry is that, despite their different approaches, they do not empirically estimate the validity of this strategy by means of the setting up of numerous diversified portfolios. The reason for the inadequate study of the efficacy of the portfolio approach to film production can be attributed to the belief that “the studio model of risk management lacks a foundation in theory or evidence” (De Vany, Walls, 1999, page 2). A concept that will be emphasised in the final part of the thesis is the need for shifting from a corporate finance to a project finance perspective. This need is recognised in one paper, in which Ravid states that films are basically projects, comparable to a new product line or a new restaurant. Also, he confirms that “there are very few empirical

investigations of profitability at a project level” (Ravid, 1999, page 464). While in the Italian and most European markets project finance is still far from being effective, in the US the majors apply the specific technique of securitisation with the explicit goal of shifting “more film performance risk to investors”. In addition, film securitisation has been demonstrated to be valuable a source of financing to meet specific capital requirements of considerable magnitude (Eisbruck, 2005, page 11).

Risk diversification through the setting up of portfolios of movies based on film production budgets is a strategy that has been active in the United States since the 1930s. Based on a population of films released by Warner Bros between 1921 and 1940, Sedgwick and Pokorny prove that, analysing the variability and structure of production budgets through the application of portfolio theory, a “strategic approach to risk” clearly emerges, both “in terms of the global sum they were willing to invest for any single production season and the manner in which it was spread across the set of production projects” (Sedgwick, Pokorny, 1998, page 219).

By using a database of earlier movies to investigate the transfer of risk associated with the particular instrument of options on streams of movies revenues, Chance *et al.* substantiate the validity of diversified portfolios of films in the management of risk, since “cash flow volatility can have wealth effects and thus portfolio diversification can be of value”. As is well known from financial theory (Markowitz, 1952), the researchers show that portfolio diversification diminishes volatility but never eliminates it completely. The authors also consider risk sharing as a common and useful instrument used to lessen variance (Chance *et al.*, 2006, page 7). The uncertain results also distinguishing the portfolio approach are demonstrated in another paper in which

Sedgwick takes the 1946–1965 US box-office receipts as data. In those years revenues fell noticeably, but became more and more unevenly distributed. He notices that such changes made the portfolio strategy, which had been successful in the preceding two decades, no longer sustainable (Sedgwick, 2002). Therefore, according to specific changes in the business environment, it can be conceded that the portfolio diversification approach can show some evident limitations.

The superiority of the portfolio approach compared to the management of single films is also recognised by De Vany and Walls who – using a sample of over 2000 films – aim to answer the following research questions: How risky is the movie business? Do strategies exist that reduce risk? They conclude that the possibilities of forecasting results for single movies are so negligible that “a strategy of choosing portfolios of movies is more sensible than the current practice of ‘greenlighting’ individual movie projects” (De Vany, Walls, 1999, page 29). Although very important in qualitative terms, the contribution from De Vany and Walls on the efficacy of portfolio strategy is limited, because – in common with most of the other researchers – no attempt is made to assess quantitatively the strategies that are adopted by studios or film producers across their portfolios of films.

Why does the portfolio approach lend itself to being so attractive in the movie business? The specific distribution of revenue and rates of return previously explained, distinguished by heavy tails and high asymmetry, would be a key factor in determining the validity of portfolio policies in the industry. This matter has been debated in a number of empirical contributions. The schemes aimed to exploit the asymmetry of film distributions to improve the risk and return trade-off in the industry were first introduced

by Andersen and Sornette (2001). De Vany and Walls assert that because of the asymmetrical distribution of profits, with a heavier positive than negative tail, the portfolio strategies that decrease volatility for a given expected return are ruled by choices that take advantage of the high skewness of distributions. The authors also analyse a very specific aspect, by examining the impact of R-rated films within diversified portfolios, noting that overloading the portfolio with this kind of film increases the chances of high losses and decreases the possibilities of great profits. Therefore, a film company that accepts this less attractive option “is clearly trading profit for something or does not understand the odds” (De Vany, Walls, 2004, page 121). Bakker’s contributions also focus on the advantages in terms of easier assessment and prediction of the possible benefits arising from the adoption of portfolio diversification. Actually, movie companies can diversify volatility by “releasing complete and fine-tuned portfolios of films” with the benefit – compared to individual films – that costs and revenues of portfolios can be approximately “calculated/forecasted with a far lower margin of error than for individual films” (Bakker, 2005, page 327). Goettler and Leslie analyse the impact of co-financing as an instrument to lessen risk, based on the movies produced by major studios between 1987 and 2000, of which about one third were co-financed. They show that co-financing is beneficial in terms of risk-management, by reducing the volatility of a portfolio, owing to “the law of large numbers”. To this end, they show that film companies tend towards co-financed films, which account for a large portion of their annual production budget. On the one hand, they do not find any evidence that “majors selectively cofinance films that are relatively

high risk”; on the other hand, “firms cofinance movies that are inclined to reduce the variance of their overall portfolios” (Goettler, Leslie, 2005, page 260).

The empirical analyses included in this thesis also focus on production budgets as the reference variable for setting up portfolios. In their study, Sedgwick and Pokorny demonstrate that high budget films are more volatile but can also generate more substantial profits, while low budget movies are less likely to generate losses (because of the lower cost to recoup with revenues), but usually produce less considerable profits. So, an appropriate mix of low budget and high budget films would seem a sensible strategy to reduce risk, and this thesis aims to prove that. In the same paper, they also establish that the use of famous actors does not seem to be an effective strategy in the production of expensive movies. It must be stressed that the population on which the authors conducted these analyses refers to the films produced by Warner Bros. during the 1930s (Sedgwick, Pokorny, 2001). Since some high budget productions become blockbusters, while other high budget films are unsuccessful at the box office, the setting up of annual diversified portfolios in terms of cost is the answer to this uncertainty. This way “low to medium budget productions provide a reliable source of profits (given the relatively low box-office revenues that are required to cover costs)”, and sometimes also result in unexpected commercial successes, although their role is to cross subsidise the volatility of more expensive films. During the 1930s – to which the study refers – as well as now, the most effective way to reduce risk can be found in “the aggregate financial performance of the annual film portfolio, with hits often emerging from quite unexpected parts of the portfolio” (Sedgwick, Pokorny, 2005, page 80-81).

Table 3.8 - Project finance perspective and diversification approach	
Pokorny, Sedgwick, 2001	The objective of the producer is to maximise the return over the entire cluster of films produced, and the budgets allocated to each film are determined with reference to the distribution of risks across the films
De Vany, Walls, 1999	The studies on film diversification efficacy are inadequate as the studio model of risk management lacks a foundation in theory or evidence
Ravid, 1999	There are very few empirical investigations of profitability at a project level
Eisbruck, 2005	Film securitisation has been demonstrated to be a valuable source of financing to meet specific capital requirements of considerable magnitude
Sedgwick, Pokorny, 1998	“Strategic approach to risk” in terms of the global sum invested in any single production season, and the manner in which it is spread across the set of production projects
Chance <i>et al.</i> , 2006	Cash flow volatility can have wealth effects and thus portfolio diversification can be of value ... diversification diminishes but never eliminate volatility completely
Sedgwick, 2002	According to specific changes in the business environment, the diversification approach can show some evident limitations in some periods.
De Vany, Walls, 1999	A strategy of choosing portfolios of movies is more sensible than the practice of ‘greenlighting’ individual movie projects
Andersen, Sornette 2001	The specific distribution of revenue and rates of return with heavy tails and high asymmetry is a key factor in determining the validity of diversification policies in the industry
De Vany, Walls, 2004	R-rated film increase the chances of high losses and decreases the possibilities of great profits
Bakker, 2005	Movie companies can diversify volatility by portfolios of films ... costs and revenues of portfolios can be approximately forecasted with a far lower margin of error than for individual films
Goettler, Leslie, 2005	Majors selectively cofinance films that are relatively high risk ... firms cofinance movies that are inclined to reduce the variance of their overall portfolios
Pokorny, Sedgwick, 2001	High budget films are more volatile but can also generate more substantial profits ... low budget movies are less likely to generate losses but usually produce less significant profits
Sedgwick, Pokorny, 2005	The most effective way to reduce risk can be found in the aggregate financial performance of the annual film portfolio, from which some hits emerges quite unexpectedly

### 3.4 Concluding remarks

The thorough literature review offered in this chapter is a relevant propaedeutic analysis for the empirical work developed in the following chapters. In detail, the chapter presented a review of the theoretical approaches to film industry first, and then empirical contributions by different researchers.

In the theoretical approaches section the main distinctive traits that characterise film productions have been highlighted, to bring out the uniqueness of film as a commodity, and the fact that each single movie “playing on the screens every day is unique”, delineating a characteristic which makes the analysis of risk and return trade-off of films productions such a tough and challenging activity. This aspect emerged both in considering film as a durable product, and as part of the whole entertainment sector: underlying the uniqueness of film compared to other business activities, there is its specific life cycle, its seasonal trend, the rapid falling audience’s marginal utility, and the process of film supply adjustment, as well as the extremely high market turnover, and the expanding possibility to reproduce it and consume it at different places, time, and durations.

Then, state-of-the-art theory on risk and return, which applies to finance was introduced. The main point of this part was to highlight the reasons why much of this theory does not apply to film. The analysis showed that, although the state-of-the-art theory of risk and return has extremely solid foundations, its theoretical contribution needs to be considered with extreme caution in the film industry, since the studies conducted by different researchers over a very long span of time have demonstrated that the key

economic performance indicator of a film – its rate of return – is completely unpredictable. No relationship between industry or market variables can be assumed to predict the range, and probability, of possible returns that would be needed to calculate. In other words, it is possible to state that different kinds of risk surround the film industry, such as business risk, operating risk, and financial risk, and different risk management strategies can be implemented to reduce their invasive power, but the possibility to forecast these risks is virtually nonexistent.

The third section of chapter 3.2 presented a technical exposition of subsidy procedures to the European film industry, by carrying out a comparative analysis both of the different options of subsidy systems, and different sources of public funding to European film industries. This analysis is relevant in that it makes it possible to set in its context the data used in the following chapters of the thesis. In fact, it summarises the types of existing public funding linking them to the Italian dataset analysed that is introduced in chapter 5, and the sources of these funds on the basis of the framework delineated in this section.

Chapter 3.3 extensively examined the empirical literature through a systematic review of empirical studies. The empirical contributions on public subsidies to films are not numerous, but significant (such as Bagella, Becchetti, 1999; Cooke, 2007; Priante, 2006, La Torre, 2006); some explaining the motivation in favour of arts subsidy (Baumol, Bowen, 1996; Scitovsky, 1972; West, 1987; Heilbrun, 2003); others, the different contributions on film and art subsidies (Cameron, 1993; Collins, Hand, 1998; Harris, 1973; Grampp, 1987; Lewis, Brooks, 2005; Cowen, 2006).

Empirical analyses to estimate the risk-return of the film industries are instead substantial and diverse, but they have different viewpoints. Studies of film revenue essentially highlight the fact that box-office revenue distribution has “has unbounded variance” (Collins *et al.*, 2002), “is highly skewed” (Bagella, Becchetti, 1999), “ has heavy upper tail” (De Vany, Walls, 1996), that a positive association between production budget and both box-office revenue exists (Sedgwick, Pokorny, 1998), and that the role of early viewers in shaping the uncertainty of the industry is major (Lee, De Vany, 2001; Austin, 1989; Smith, Smith, 1986).

Different empirical analyses of rates of return and profits/losses have also been conducted, but they lead to the same conclusion, which is that the rate of return and profits/losses distributions are asymmetric and sharply peaked, hence distinguished by high skewness and considerable kurtosis. The mean is finite but the variance is infinite. The focus on superstars and other “recognising signs” (famous director, a renowned cast of actors, a specific genre, a movie rating, a good review, the sequel of a previously released film, and so on) as a strategy to predict positive box office performances has often proved to be only a snare and a delusion, as different empirical contributions have established (among the others: Rosen, 1981; Simonet, 1977; Collins *et al.*, 2002; Albert, 1998; Ravid, 1999; Elberse, 2006; Sedgwick, Pokorny, 1998; Hirschman, Pieros, 1985; Prag, Casavant, 1994; Litman, 1983).

Finally, the focus on empirical works on project finance perspective and diversification strategies demonstrates the validity of these approaches, essentially because of the particular nature of films: in fact, costly movies are usually more risky but can also generate more substantial profits, while less expensive productions are less likely to

produce losses but usually generate smaller profits. Worthy of mention among the different empirical contributions analysing this approach are: Bakker, 2005; Chance et al., 2006; Eisbruck, 2005; Pokorny, Sedgwick, 2001; De Vany, Walls, 1999; Andersen, Sornette 2001, which are examined in more detail in the “policy implications” chapter, ch. 7.

To conclude, the extensive review of theoretical approaches to film (ch. 3.2) and empirical literature (ch. 3.3) presented in this chapter constitutes a solid grounding to bring out the specific traits of film as commodity, so that the empirical analyses and results presented in the next chapters can be more effectively digested and interpreted.

**4**

# **Methodology**

## **4.1 Introduction**

The analytical aspect of this work is based primarily on quantitative data, although a qualitative data process is entered into when investigating the efficacy of the Italian state subsidy for films. The work is essentially quantitative because it principally uses data analysis procedures such as graphs, tables, statistics, that give rise to, or use, numerical data. More specifically, the research is based on a multiple method choice, in that has used more than one data collection technique and analysis procedure to satisfy the research questions posed at the beginning of the thesis.

The analyses have been conducted by means of different categories of descriptive statistics, together with graphics analysis, in order to depict the fundamental characteristics and traits of the data collected. The pithiness and clarity that typically characterise descriptive statistics are very important strengths for the purpose of this research because, as stated in the introduction, the work is based not on models and predictions of the expected returns, profits or losses of film investments, but rather on the assessment of indicators that can depict the scale or degree of dispersion of these expected values – that is, the risk that the companies are willing to entertain. In this perspective, descriptive statistics offer a simple synoptic view of the samples investigated and the measures.

The advantage of using descriptive statistics, together with graphics analysis, is that they are able to depict quantitative descriptions in a highly manageable form. As the amount of data analysed in this thesis is considerable, descriptive statistics make it possible to condense this information in a rational way, such that a relatively small number of results can represent the extensive amount of data investigated. This process is helped

through the use of graphical analysis, which is an instructive way of summarising the results, allowing different comparisons to be made in the two contexts investigated.

In the following sections a full exposition of the techniques used to address the research questions is provided, with considerations from a critical perspective.

## **4.2 Risk and return trade-off**

This part of the work is firstly based on re-discussing previous results obtained by different researchers in the field, then going on to advance the analysis through an investigation of relative indicators of profitability, such as rates of return, that have not been adequately and closely examined in previous research (see par. 3.3.3.3). The study moves from a general analytical investigation – aimed at depicting the general characteristics distinguishing the risk and return profile in the industry – to a comparative analysis that reveals the different traits of the US and Italian contexts.

For each research question posed, a complete description of the techniques used is given, together with any critical comments that seem necessary. For each research question two main datasets have been used, one for the US context, consisting of 1,636 films, and one for the Italian context, made up of 566 films, as well as sub-samples derived from these two main datasets. The US population of 1,636 films taken as main dataset includes those productions that cost at least \$5 million to make in real in terms, since the inclusion of very low budget films would have distorted the statistical results of the frequency distribution. Only for some analyses – for example cost distribution analysis – is the broadened dataset of 2,156, which includes films that cost less than \$5 million, considered.

Two methodological aspects of the datasets must be touched on here. Full details are given in the following chapter 5, “Data”:

1. The research considers only the box-office revenues from theatrical release; revenues from secondary markets are not taken into consideration. This is consistent with the purpose of the thesis, which examines the level of risk and asymmetry distinguishing the industry. In addition, surely the reason for dealing only with box-office revenues is that relatively recent past research dates from a time when theatrical release was all that existed as a source of revenue and a means of amortization.
2. The Italian dataset comprises only the films produced by Italian companies or co-produced with other countries, hence excluding foreign and particularly US productions, of which the latter represent a sizeable market share, between 50 and 60 per cent on the local market. However, the US dataset does include films produced by foreign film companies – among which Italian – and distributed in the US theatres, but it must be emphasised that the market share of non-Hollywood films in the US theatres is marginal, since about 90 per cent of films screened in the US cinemas are Hollywood productions (see par. 2.3.9).

The assembly, construction, cleaning and dimensions of the two datasets are extensively described in chapter 5.2.

The first research question posed in this section was:

*1. In either the US or the Italian context, does the statistical distribution of film revenues conform to that found in earlier studies?*

This question is answered by analysing the frequency distribution of revenues for both contexts, considering respectively all the revenue generated in the twelve-year period in the US market (from 1988 to 1999), and in the nine-year period in the Italian market (from 1995 to 2003). For each context, the four statistical moments have been measured and, in addition, the median has been calculated. The coefficient of variation has been determined only for the US context, and it has then been excluded from the Italian one. The coefficient of variation has been finally discarded from analysis because of its doubtful methodological value in this case, as proved in the “Results” chapter (see ch.6, footnote 8). The statistical distribution of film revenues is hence based on the analysis of the following descriptive statistics:

- mean;
- median;
- standard deviation;
- skewness;
- kurtosis.

The descriptive statistics analysis was conducted on different samples – extrapolated from the two previously mentioned datasets – according to two criteria.

- First, the annual populations of films distributed in both contexts are considered. To this end, twelve annual populations and nine annual populations were constructed, respectively, in the US and Italian contexts, referring to each one of the years of analysis considered in the respective periods of observation. This criterion makes it possible to compare the results obtained in the same context

over different years, and depict the trend changes or validations over an extended period of time.

- Second, the frequency analysis of revenues of the whole US population and the whole Italian population were analysed, to represent the general traits of the two contexts and provide an overall view of the situation in the two contexts. To gain an insight into what gives rise to the highly skewed distributions that emerge from the annual analysis, whole-dataset indicators are useful because they make visible the high inequality and randomness of revenues in the industry. The frequency distribution of the 1,636 films constituting the US dataset is fully explained and graphically displayed by histograms distributed over 16 unit intervals, and a final unit interval exhibited for the sake of presentation in the “Data” Chapter (see chapter 5.3.3). The frequency distribution of the 566 Italian films – broken down into twenty unit intervals plus a final one comprising the most expensive films, included for the sake of presentation – is presented and shown graphically in Chapter 5.3.3.

To refine the results, the scatter plot methodology was also used in both contexts. This technique has been widely employed by other researchers investigating the statistical distribution of film revenues, since it makes it possible to analyse graphically the relationships between production costs and revenues in the two main datasets of films created (De Vany, Walls, 1999; Izod, 1988; Sedgwick, Pokorny, 2005). The scatter diagram analysis for the US industry includes all the 1,636 films of the dataset, investigating the relationship between their costs – between \$5 and \$140 million – and their box office revenues – between a few thousands of dollars and about \$420 million

(see Figure 6.2, Ch.6). For the Italian industry the figures are very different, as the scatter chart analysis relates the costs of the 566 films whose costs range between €25,823<sup>30</sup> to make the production “*Intolerance*” (the lowest-budget film of the dataset) and €30 million, and their revenues, contained in a range of values between a few thousands of euros and about €43 million. As the most expensive Italian movies, those that cost more than 10 million to be made, correspond to only 0.2 per cent of population, the examination in the Italian context was conducted using a scatter diagram analysis that considers only the movies with a production budget of less than €10 million (see Figure 6.5, Ch.6). Scatter plot technique is a useful complementary analysis, as has been shown in the work of previous researchers studying this issue (Simonoff, Sparrow, 2000; Sedgwick, Pokorny, 2005). Even though this method is extremely important, because it can suggest the existence of a cause and effect relationship between cost and revenue, the following investigation on rates of return is of even greater value, as it highlights whether an effective relationship between the budget allocated to a film and its profitability exists, improving the current knowledge on the topic, essentially devoted to the connection between cost and revenue only (De Vany, Walls, 1999; 1996; Collins *et al.*, 2002; Bagella, Becchetti, 1999; Sedgwick, Pokorny, 1998; Austin, 1989; Smith, Smith, 1986).

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<sup>30</sup> Due to the extremely low cost of the lowest-budget movie of the Italian population, for ease of presentation from now on the “production cost floor” in this chapter is considered equal to €0 ( $\approx$  €0).

Table 4.1 – Methodology used for research question 1

<b>Research question</b>	<b>Methodology</b>
<i>1. In either the US or the Italian context, does the statistical distribution of film revenues conform to that found in earlier studies?</i>	<ul style="list-style-type: none"> <li>- Frequency distributions of revenues</li> <li>- Descriptive statistics: Mean, Median, Standard Deviation, Skewness, Kurtosis</li> <li>- Scatter plot methodology</li> </ul> <p>Samples analysed:</p> <ul style="list-style-type: none"> <li>a) Annual populations:               <ul style="list-style-type: none"> <li>- 12 annual populations for US (1988-1999);</li> <li>- 9 annual populations for Italy (1995-2003).</li> </ul> </li> <li>b) Whole Italian (566 films) and US (1,636 films) populations               <ul style="list-style-type: none"> <li>- 15 unit intervals considered + 1 final interval unit for sake of presentation for US;</li> <li>- 20 unit intervals considered + 1 final interval unit for sake of presentation for Italy.</li> </ul> </li> </ul>

The second research question posed in the introduction was:

*2. To what extent are production costs a good indicator of the rates of return generated by the films in the datasets?*

An additional research question strictly linked to the previous one was the following:

*3. Are the cost frequency distributions comparable in the two contexts analysed?*

The analysis of the annual distribution of rates of return is aimed at providing even more significant information than that derived from revenues, since it connects costs and profits or losses, offering a relative measurement of the industry's profitability. In addition, while some previous contributions have systematically investigated the frequency distribution of revenues in the industry (Collins, et al., 2002; De Vany, 1994; Prag, Casavant, 1994; Ravid, 1999), no studies have dealt empirically with the frequency distribution of rates of return.

The same methodology as that used for the revenue distributions is consistently applied here. As in most cases, descriptive statistics are used to investigate one variable at a time (Sternstein, 1996), the same techniques used to identify a possible relationship between costs and revenues are adopted here to analyse the possible connection between cost and rates of return of films, to draw an inference from the two main data sets.

The statistical distribution of film rates of return is therefore examined by means of the following descriptive statistics:

- mean;
- median;
- standard deviation;
- skewness;
- kurtosis.

The reasons for the exclusion of coefficient of variation in measuring the variance of distribution is due to the low values (close to zero) of the mean annual rates of return, which are the denominator of the formula<sup>31</sup>. So, the standard deviation was used as an appropriate proxy of variance of the distributions in both contexts.

The statistical studies were carried out considering three different categories of samples, all derived from the two main datasets (see ch.5.2).

a) *Annual populations* – The twelve annual populations of films released in the US market are considered for the American context, together with the nine annual populations of Italian films distributed in the Italian theatres, to analyse the rate of return frequency distributions in the two contexts. A further scatter plot analysis was

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<sup>31</sup> The main drawback of the coefficient of variation is its sensitivity to small changes in the value of the mean when the mean is close to zero. In fact in this case, the coefficient of variation is sensitive to alterations in the standard deviation, considerably curbing its statistical significance (Livers, 1942).

conducted to identify the annual relationship between production costs and rates of return of the movies, resulting, respectively, in twelve and nine annual scatter diagrams for the US and Italian markets.

- b) *US and Italian whole populations* – These are the US and Italian populations corresponding to the datasets consisting of 1,636 and 566 movies respectively. The different unit intervals considered within the frequency distributions of rates of return in the American and Italian contexts are fully dissected in the Data Chapter, paragraph 5.2. 14 intervals of rates of return – plus a final unit interval including a small number of movies with exceptional rates of return – were identified for the US distribution. Ten unit intervals – plus a final unit interval including a small number of movies with exceptional rates of return – were identified for the Italian distribution (chapter 5.3.4).

In both scenarios a scatter chart analysis was conducted to further corroborate the results and give them visual representation. Different diagrams were produced to emphasise the different relationship between cost and rates and return in the two contexts, depending on the specific cost range considered.

Therefore, in addition to the whole population of 1,636 films, the diagram plot analysis in the US market considers sub-samples of films with cost between \$5 and \$20 million; \$20 and \$35 million; \$35 and \$50 million; \$50 and \$70 million; and \$70 and \$140 million. The widening of the range selected in the last sub-samples analysed is justified by the decreasing scatter density as production cost rise (see ch.6, Figures Figure 6.8 to 6.12). In the Italian market, in addition to the whole population of 566 films, sub-samples of films whose production budget was between

$\approx \text{€}0^{32}$  and  $\text{€}10$  million were further examined; this additional sample was then broken down into further samples including the films that cost between  $\approx \text{€}0$  and  $\text{€}2$  million;  $\text{€}2$  and  $\text{€}4$  million;  $\text{€}4$  and  $\text{€}6$  million; and  $\text{€}6$  and  $\text{€}10$  million. A separate scatter analysis of the films that cost more than  $\text{€}10$  million was not necessary, as this group of observations corresponds to only 0.2 per cent of the whole Italian population (see par. 6.1, Section ‘The relationship between costs and revenues – Italian Dataset’).

c) *Main companies operating in the two markets* – The datasets were then grouped by production studios to analyse the comparative statistics distinguishing the main companies competing in the two markets. In the US market 18 companies were considered, corresponding to those studios that have produced at least 20 films during the period of observation. The mean production statistic of the US Studios is particularly revealing, since the 18 competitors analysed released a mean of 99.8 films each during the 12 years analysed. The wide spread of production of films in the Italian context made it possible to examine only the main eight companies in terms of films produced. Among these eight competitors, only three are responsible for a statistically significant number of movies over the nine years investigated: *Cecchi Gori*, 81; *RAI*, 47; *Medusa* 37. During this time span, the other five players produced a statistically insignificant number of films, with the rest of the production output scattered over an extremely high number of companies (111). Clearly, this is very different from Hollywood’s activity, in which the first main competitors produce the vast majority of US productions. The eight main Italian competitors

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<sup>32</sup>  $\approx \text{€}0$  is used for ease of presentation to indicate the lowest-budget production, which cost only about 26 thousand euros, as mentioned in the previous pages.

produced only 255 films, about 45 per cent of the 566 produced altogether, while 55 per cent came from 111 different companies, each of which produced on average about two films over the entire period of nine years investigated.

Table 4.2 – Methodology used for research question 2

<i>Research question</i>	<i>Methodology</i>
2. <i>To what extent are production costs a good indicator of the rates of return generated by the films in the datasets?</i>	<p>The same methodology as that used for the revenue distributions is consistently followed here.</p> <ul style="list-style-type: none"> <li>- Frequency distributions of rates of return</li> <li>- Descriptive statistics: Mean, Median, Standard Deviation, Skewness, Kurtosis</li> <li>- Scatter plot methodology</li> </ul> <p>Samples analysed:</p> <p>a) Annual populations:</p> <ul style="list-style-type: none"> <li>- 12 annual populations for US (1988-1999);</li> <li>- 9 annual populations for Italy (1995-2003).</li> </ul> <p>b) Whole Italian (566) and US (1,636) populations:</p> <ul style="list-style-type: none"> <li>- 14 unit intervals considered + 1 final interval unit for sake of presentation, for US;</li> <li>- 10 unit intervals considered + 1 final interval unit for sake of presentation, for Italy</li> </ul> <p>Scatter plot analysis also conducted for sub-samples of films within the whole US and Italian populations, including in each sub-sample the films with cost ranges:</p> <p>b1) 5-20; 20-35; 35-40; 50-70; 70-140 for US (\$ million);  b2) ≈0-10; ≈0-2; 2-4; 6-10 for Italy (€ million).</p> <p>c) Main companies operating in the two markets:</p> <ul style="list-style-type: none"> <li>- 18 US companies (each producing a mean of 99 films during the 12-year period from 1988-1999);</li> <li>- 8 Italian companies (each producing a mean of 32 films during the 9-year period from 1995-2003).</li> </ul>

To answer question 3 an analysis of the decile cost film distributions of both the US and Italian datasets was conducted to identify whether a common trend is identifiable in the two contexts (can an increasing or decreasing number of observations be noticed over the decile classes?), and to infer the different levels of budget assigned to an typical

production in the US and Italy (mainly low budget, medium budget, or high budget films?).

The cost distributions per decile were also examined by company, for the five most productive US majors:

- Paramount;
- Buena Vista;
- Twentieth Century Fox;
- Universal;
- Warner Bros;

and for the three main Italian companies:

- Cecchi Gori;
- RAI;
- Medusa.

This analysis was conducted to determine whether the trend observed on the whole population is in line with that of the main competitors operating in the respective markets. A methodological aspect concerning the cost analysis of US majors needs to be noted. For each of the five competitors a double cost distribution analysis per decile was conducted: one on the company population drawn from the main data set of 1,636 observations, which excludes the movies that cost less than \$5 million; one on the company population drawn from the data set of 2,156, which includes the 520 movies that required cost less than \$5 million.

The cost examination helps to further support the results on rates of return and revenue frequency distributions analyses, in that it makes it possible to see whether the frequency polygon or the smooth curve that connects the variables is normal/symmetrical, or is positively or negatively skewed. Skewed distributions delineate a specific scenario that must be taken into particular account when analysing the results concerning the risk and return trade-off results. In the research this analysis is also represented graphically by means of bar charts (Chakravarti *et al.*, 1967).

Table 4.3 – Methodology used for research question 3

<b><i>Research question</i></b>	<b><i>Methodology</i></b>
<b><i>3. Are the cost frequency distributions comparable in the two contexts analysed?</i></b>	<ul style="list-style-type: none"> <li>- Decile cost film distributions analysis</li> <li>- Bar chart analysis</li> </ul> <p>Samples analysed:</p> <ul style="list-style-type: none"> <li>a) Whole Italian (566) and US (1,636) populations               <ul style="list-style-type: none"> <li>- 10 unit intervals with costs from <math>\approx 0</math> to \$140 million for US;</li> <li>- 10 unit intervals with costs from <math>\approx 0</math> to €30 million for Italy.</li> </ul> </li> <li>b) Representative main companies operating in the two markets (The 5 main US companies and the 3 main Italian companies)</li> </ul>

The focus on the availability of finance to the industry was further investigated in the following question:

*4. To what extent does mean production cost affect the results in the two contexts? More specifically:*

*Is the production of lower budget films always less risky than that of high budget ones?*

Most of previous researchers have claimed that producing high budget productions is more risky than producing low budget productions, as the revenues from the former are

more volatile. They justify this observation by the fact that the larger costs to produce them involve larger sunk costs, while low budget movies are less likely to produce losses because the revenues needed to recoup their costs are correspondingly low, although they usually generate considerably less profit (Bakker, 2005a). This research question is answered by testing this assumption, both for Hollywood and for Italian productions. This was carried out through a comparative quantitative analysis for some of the main film companies in the two contexts.

In the US context, based on the initial dataset of films broken into the 18 company populations introduced at *point c) of research questions 2, and 3*, the whole populations of the five main competitors – *Paramount, Buena Vista, Twentieth Century Fox, Universal, and Warner Bros* – were considered. In the Italian context, based on the initial dataset of films broken into the 8 company populations introduced at *point c) of research questions 2, and 3*, the whole populations of the three main competitors – *Cecchi Gori, RAI, and Medusa* – were considered. For each company population further sub-samples of films were selected in order to calculate their profitability – in terms of rate of return – and their variance – in terms of standard deviation. Two criteria for constituting the sub-samples were adopted. According to the first, each sub-sample comprised a number of films comparable in terms of costs – that is, samples of only low-budget films or samples of only high-budget films:

a) Four to twelve sub-samples were created for each company (if this is possible, depending on the number of films produced in each national context). Taking as a model the US context, a “(3+3) x (3+3) criterion” was adopted – that is, two series of simulations, each one made up of three sub-samples of “low-budget” films, and two

series of simulations, each one made up of three sub-samples of “high-budget” films. Hence, for each firm twelve new sub-samples were created, half of which constituted of low-budget movies only, the other half being constituted of high-budget movies only. Taking *Paramount* as the US model (for both types of sub-samples), three sub-samples of 15 “low-budget” films, three sub-samples of 10 “low-budget” films, three sub-samples of 15 “high-budget” films, and three sub-samples of 10 “high-budget” films were set up. In the Italian context, the number of company sub-samples that could be created was lower, due to the much smaller number of observations and high-budget productions. The number of films forming each sub-sample was adjusted in accordance with the total number of films released by each company (larger sub-samples for major players, smaller sub-samples for minor competitors). The limits for distinguishing a low-budget film from a high-budget film were different for each company, and based on the cost frequency distribution of the films. More precisely, a decile cost frequency distribution was first constructed for each company, in both contexts, distinguishing low-budget or high-budget movies, depending on the respective decile groupings, and according to the mean and median cost per company. In the case of *Paramount*, which recorded a mean cost per film of \$21.7 million and median cost of \$17.1 million (see chapter 5.3.2.2), the films belonging to the first three decile groupings – corresponding to 86 out 161 movies (53 per cent) – with costs from \$4 to \$17.7 million were considered as low-budget productions. The 75 films (47 per cent of the firm’s population) belonging to the decile groupings from fourth to tenth, with production costs from \$18.2 to \$61.7 million (excluding the outlier *Titanic* which cost \$139 million) were identified as high-budget productions. The highest or lowest weight (in terms of costs)

of different films belonging to different decile cost groupings was offset in each sub-sample by setting up portfolios of films distinguished by similar average cost.

For each of the sub-samples created, both mean rate of return and standard deviation were calculated.

According to the second criterion adopted, each sub-sample created comprised a number of films with different costs (so including both low-budget and high-budget films):

b) For each company, the mean, the interquartile mean and the median production budget were calculated. Then, nine simulations were carried out for each studio, according to a 3x3 matrix criterion – three packages of simulations, each one made up of three sub-samples with the same number of films: the first package with a mean production cost lower than the company's mean production budget; the second package with a corresponding mean production cost; and a third package with a mean production cost higher than the company's mean production budget. Each sub-sample was diversified, taking films belonging to different decile classes, in order to represent all the categories of films in terms of costs. As previously noted, *Paramount* was taken as the US model: the mean production budget of the 161 films released is \$21.6 million; the interquartile mean and the median production budgets are lower and equal to \$17.8 million and \$17.1 million, respectively. Three sub-samples of 15 films, three sub-samples of 10 films, and three sub-samples of 5 films respectively were set up; for each package, lower costs were assigned to a first portfolio (around \$17.5 million – that is, 15/20 per cent lower than the mean production budget, and equivalent to the interquartile mean and median costs); higher costs were assigned to a second portfolio (around \$24 million – that is, 10 per cent more than the company's mean production

budget); and costs around the mean value of \$21.6 million were assigned to a third portfolio. For each of the nine sub-samples both mean rate of return and standard deviation were calculated.

Then, the same empirical analysis as that conducted on the whole populations of the eight companies considered – the five US Majors and the three Italian main competitors – was then carried out on an annual basis, by examining the annual populations of each one of these companies. However, it must be specified that this analysis was conducted where possible, according to the annual number of films produced by each one of the firms investigated.

Table 4.4 – Methodology used for research question 4

<b>Research question</b>	<b>Methodology</b>
<p><i>4. To what extent does average production cost affect the results in the two contexts?</i></p> <p><i>Is the production of lower budget films always less risky than high budget ones?</i></p>	<ul style="list-style-type: none"> <li>- Descriptive statistics: Mean Rate of Return, and Standard Deviation of Rate of Return.</li> </ul> <p>Based on the initial datasets of films broken down respectively into the 18 (US) and 8 (Italian) company populations (populations introduced <i>at point c</i>) of <i>research questions 2, and 3</i>), the populations of some of the main competitors are considered:</p> <ul style="list-style-type: none"> <li>- 5 major US companies (Paramount; Buena Vista; Twentieth Century Fox; Universal; Warner Bros);</li> <li>- 3 major Italian companies (Cecchi Gori; RAI; Medusa).</li> </ul> <p>Samples analysed for each company population:</p> <ol style="list-style-type: none"> <li>a) 4 to 12 sub-samples including some films with similar costs are created for each company (samples with only high-budget or low- budget productions);</li> <li>b) 9 sub-samples including some films with differentiated costs are created for each company (samples including both high-budget and low- budget productions).</li> </ol>

As a result of the previous questions, the final research question concerning the risk and return trade-off section was the following:

*5. Can a common pattern of risk and return trade-off behaviour be identified in the two contexts, US and Italian?*

Answering this last question makes it possible to pull together the strings of risk and return behaviour in the film industry, and it can be met on the basis of the methods used for the four previous research questions. Therefore, using the descriptive statistics (mean, median, standard deviation, skewness, kurtosis), together with graphics analyses (bar charts, histograms, tables, and scatter diagrams) revenue, rate of return, as well as cost frequency distributions were analysed, to provide an exhaustive answer concerning the risk and return trade-off behaviour in both the US and Italian contexts. The different techniques used allow a clear and general distinction of the contexts to be drawn, but also make it possible to investigate, by observing specific implications, whether different behaviours can be detected over the twelve and nine years investigated, respectively, in the US and Italy; or if different behaviours can be observed by examining the risk and return trade-off of the different individual companies active over the time span considered.

The methods applied to answer this question make it possible to pass judgement on the possible reward from the extremely risky features characterising the film industry, as extensively pointed out in the literature review (Balio, 1995). Therefore, this section reveals whether the high variance distinguishing the industry is compensated, or not, by an adequate profitability at the box office, both with regard to the Hollywood majors

and the Italian companies, so clearly delineating the respective risk profiles that characterise their business.

Table 4.5 – Methodology used for research question 5

<b>Research question</b>	<b>Methodology</b>
<i>5. Can a common pattern of risk and return trade-off behaviour be identified in the two contexts, US and Italian?</i>	<p>Based on previous research questions and previous methodology – descriptive statistics and graphic analysis – a qualitative approach can be adopted.</p> <p>The methods applied to answer this question make it possible to state whether the high variance distinguishing the industry is compensated, or not, by an adequate profitability (through a comparative analysis of the two contexts).</p>

### 4.3 State support

The issue of state support for the film industry was examined both with data collection techniques and with data analysis procedures – that is, focusing on numeric data and non-numeric data. The research questions concerning the state support sections were hence answered with qualitative, as well as quantitative data, according to the specific question posed.

The first question was:

*6. Why is state support for the film industry justified in the case of Italy, but not in the case of the US?*

This had to be resolved before further questions needing an empirical answer could be introduced, and it was approached through a multi-method qualitative study (Cooper, Schindler, 2000). The following techniques were adopted:

- *Primary Sources.* Diary accounts, state regulations and their procedures, and various research materials were studied methodically, but the researcher strove to be as discreet as possible, in order not bias the observations, adopting an impartial standpoint. Most of the material observed was provided by the appropriate agents in the subsidising process: superintendents and managers belonging to “Direzione Generale per il Cinema” of the Italian Ministry belonging to the Cultural Heritage of Rome, the Council of Europe of Strasbourg, the European Community of Brussels.
  
- *Unstructured Interviewing.* Differently from the traditional structured approach, the researcher of this thesis based his investigation process on some primary guiding queries or central ideas that need to be explained, analysed, and, if necessary, questioned, but without a formal structured tool or *modus operandi*. The researcher also let his investigations be guided in any direction of interest that might emerge during the meetings (Bowerman, *et al.*, 2006). The meetings were also useful to clarify – where possible – some controversial issues that cannot be sorted out solely through analysis of written records and primary sources, and behaviour of the agents (e.g.: the level of objectivity, the presence or absence of conflicts of interest, or vested interests, or potential bribery in the subsidy allocation process). In this phase, both individuals belonging to national bodies – the Italian Ministry of Cultural Heritage as well as Cinecittà Holding – and supranational bodies – the European Commission and the Council of Europe

– were questioned<sup>33</sup>. In addition, representatives of the financial institutions involved in the financing process of the film industry in its many aspects were interviewed, both those active in the supranational market – such as Société Générale – and those in the local Italian market, – such as Artigiancassa S.p.A. BNL (Banca Nazionale del Lavoro)<sup>34</sup>.

- *Case Studies*. Specific subsidy procedures of some selected films were dissected to establish the possible connection between the use of subsidies as an effective and practical tool to permit the survival of the national industries, and the possible market inefficiencies and dependency on the state, dependency that could create moral hazard and contribute to decreasing the companies' sense of responsibility in its budget management. Case analyses – some of which spontaneously emerged during the “unstructured interviewing process” – also made it possible to sort out some issues that remained quite vague when only the material concerning the general subsidy methods adopted was examined. Case studies also made it possible to strengthen some convictions and correct some

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<sup>33</sup> The most important unstructured interviews conducted at their premises, and the main contacts established with the exchange of material for direct observation were with: Alessandra Priante, Director of the Italian Audiovisual Observatory, Cinecittà Holding; Antonio Breschi, Previous Director of the Italian Audiovisual Observatory, Cinecittà Holding; Gaetano Blandini, Chief Executive for the Direzione Generale per il Cinema (Italian Film Management) belonging to the Ministry of Cultural Heritage; Raimondo Del Tufo, General Secretary for the Generale per il Cinema; Maria Giuseppina Troccoli, Director of the Film Activity promotion office of Generale per il Cinema; Ugo Baistrocchi Manager of the Film Activity promotion office of Generale per il Cinema; Nicola Borrelli, Director of the General Business, Budget, Planning and Control, Human Resources, Reassessment Office of the Direzione Generale per il Cinema; Susan Newman-Baudais, Analyst, Department Analyst, Department for Information on Markets & Financing, Council of Europe, European Audiovisual Observatory, Strasbourg; Irina Orssich Slavetich, European Commission - Information Society and Media Directorate-General, Directorate A - Audiovisual, Media, Internet, Unit A2 - MEDIA programme and media literacy, Brussels; Isabella Tessaro, European Commission - DG Société de l'Information – Unité A2 – Programme Media, Brussels; Nils Koch, European Commission, DG Information Society and Media, Audiovisual, Media, Internet, MEDIA programme and media literacy, Brussels.

<sup>34</sup> Artigiancassa was established in 1947, whose core business is the management of public, among which those assigned to the Italian Cinema. It was privatized in 1994, and in 1996 was absorbed by BNL Group.

preconceptions that the researcher might have brought to the investigation: is the public subsidy allocation truly an objective and transparent procedure? Do bigger competitors usually take advantage of the subsidy policy to the disadvantage of the smaller ones? Is the subsidy a sort of sunk-cost allocation by the State to the industry? Do really minor, fly-by-night firms take advantage of the financial aid, acting as “free riders” and exploiting “hit-and-run”?

- *Archival research.* Administrative documents and records – mainly provided by Cinecittà Holding – made it possible better to support the answers for this research question. Although supportive to the analysis, it must be noted that this technique is subsidiary, since it is concerned with secondary source data analysis (Hakim, 2000).

Table 4.6 – Methodology used for research question 6

<b>Research question</b>	<b>Methodology</b>
6. <i>Why is state support for the film industry justified in the case of Italy and not in the case of the US?</i>	<p>Multi-method qualitative study using:</p> <ul style="list-style-type: none"> <li>- <i>Primary Sources.</i> Diary accounts, state regulations and their procedures, and different research material are studied methodically;</li> <li>- <i>Unstructured Interviewing.</i> Both individuals belonging to national bodies – the Italian Ministry of Cultural Heritage as well as Cinecittà Holding – and supranational bodies – the European Commission and the Council of Europe – are questioned (but not resorting to the “participant observation method”);</li> <li>- <i>Case Studies.</i> Specific subsidy procedures of some selected films are analysed;</li> <li>- <i>Archival research.</i> Administrative documents and records analysed – mainly provided by Cinecittà Holding. To be considered as secondary source data analysis.</li> </ul>

The answer to this first question (6) was a preliminary to the following one (7), in which empirical data were introduced. The introduction of quantitative data further corroborated the qualitative results of the investigation conducted for question 6, particularly emphasising the different behaviours towards subsidy policies in the US and the Italian contexts.

Thus, the second research question to be answered in this section is fundamental:

*7. How efficiently does state support for Italian film production bridge the gap in financial performance between the Italian film industry and that of the US?*

Related to the previous one, another research question was posed:

*8. Is the subsidy regime effective in developing and supporting cultural identity, thereby enhancing the prestige of the society as a whole?*

Question 7 essentially required the use of quantitative methods, while question 8 could be met by postulating a qualitative conclusion, based on the empirical observations from question 7.

The starting point was the complete Italian dataset of 566 films (see chapter 5.2), some of which are directly affected by subsidy policies, unlike the population of the US dataset. From the Italian dataset two further groups of sample populations were created:

- nine annual sample populations, made up of only those films that obtained a public subsidy for their production. 131 films (23.1 per cent) were distributed over the 9 annual populations (see chapter 5.3.5). However, it must be made clear that these samples do not correspond to all the films that obtained a subsidy during the period from 1995 to 2003, but rather only to those films that received

a subsidy during this period for which revenues and costs are completely reliable in statistical terms.

- nine annual sample populations, made up of those films that did not obtain, or did not resort to, public subsidy during the time span analysed. These nine annual populations number 435 films in total, equal to 76.9 per cent of the Italian whole population of 566 movies.

The source used to separate non-subsidised films and subsidised films, and the precise amount of public funding granted to each subsidised film, is the confidential information provided by Cinecittà Holding based on BNL's files regarding the subsidies to the Italian film industry. These data are considered strictly confidential, so a deal to assure that they are not circulated outside the context of the research work and the people involved in it (e.g.: supervisors) was concluded with Cinecittà Holding's managers as a condition of access for reading, dissecting, selecting, using and shaping them to create the Italian dataset used in the thesis. The collection phase and handling modality of this confidential information are more extensively explained in chapter 5.2.

Descriptive statistics were used to compare subsidised to non-subsidised films, and expressly the respective profitability in terms of rate of return generated. For the dataset of the 131 subsidised films, the total production cost and the amount of public subsidy granted by the State were both taken into consideration, to identify the net cost actually supported by the companies for each film – as the difference between the total production cost of film and the public funding obtained. This made it possible to compare the gross and net profitability of the annual populations of subsidised films with the profitability of the annual populations of non-subsidised films.

Table 4.7 – Methodology used for research questions 7 and 8

<b>Research questions</b>	<b>Methodology</b>
<i>7. How efficiently does state support for Italian film production bridge the gap in financial performance between the Italian film industry and that of the US?</i>	<ul style="list-style-type: none"> <li>- Descriptive statistics: “incremental profitability” of subsidised films – in terms of rate of return – as a consequence of subsidy.</li> </ul> <p>Based on the Italian dataset of 566 films, two new categories samples of films are created:</p>
<i>8. Is the subsidy regime effective in developing and supporting cultural identity, thereby enhancing the prestige of the society as a whole?</i>	<ul style="list-style-type: none"> <li>- 9 sample annual populations, made up of only those films that obtained a public subsidy (equal to 23.1 per cent during the period 1995-2003);</li> <li>- 9 sample annual populations, made up of those films that did not obtain, or did not resort to, public subsidy (equal to 76.9 per cent during the period 1995-2003);</li> </ul> <p>Source: confidential and never published data on public subsidy to films provided by Cinecittà Holding (Refer to Chapter 5.2 for full explanation of confidential data collection)</p>

Based on the empirical observations that were brought to light, and also through qualitative methodology, the researcher was able to answer the related additional question whether the subsidy regime is effective in developing and supporting cultural identity, thereby enhancing the prestige of the society as a whole.

To evaluate the efficacy of public policy in the Italian film industry, a further research question was put in the introduction:

*9. What kinds of firms do resort to public aid, and what conclusions can be drawn from this?*

Based on the empirical observations of the previous two questions, quantitative research was used here, with the collection of data based on a widely entertained hypothesis that the least successful movies in terms of the economic performance are frequently those

whose producers resort to financial state support. This process was followed by the application of descriptive statistical methods aimed to identify:

- the different profitability performance of subsidised films relative to non-subsidised films, referring to the annual population samples used for the previous questions. Considering the revenue of the movie ( $R$ ), its overall production cost ( $C$ ), the producer's contribution to the cost ( $P$ ), and the (potential) public subsidy assigned to the film ( $S$ ), so that  $C = P + S$ , if:

$R < C$ , and the production cost is supported in full by the producer ( $S=0$ , so  $C=P$ ), the company does not break even. Contrariwise, if:

$R > C$ , with no subsidy granted ( $S=0$ , so  $C=P$ ), the movie is profitable for the company.

- the percentage of films that became profitable as a consequence of public subsidy (and, among these, those that are in any case already profitable, even without the subsidy obtained), compared to those that do not break even, despite the contribution of public aid to mitigate production costs. In this case if:

$R < C$ , and a subsidy is granted ( $C=P+S$ ), so that  $R - S > P$ , the movie become profitable for the company as a consequence of subsidy assigned. If:

$R < C$ , and a subsidy is granted ( $C=P+S$ ), so that  $R - S < P$ , the company does not break even despite the support of subsidy. If:

$R > C$ , and a subsidy is granted ( $C=P+S$ ), whatever its amount, the movie is already profitable for the company even without the subsidy.

Through mixed-methods research, grounded on previous empirical observations and a qualitative approach, it became possible to conclude whether public subsidy policies efficiently reduce the financial burden of the companies, bringing about a redistribution effect, so assigning resources to those productions that would not have any opportunity to keep themselves afloat, to the detriment of those productions that have more potentiality to attain satisfactory revenues at the box office; or contrariwise, the analyses could demonstrate that the Italian film subsidy, as it works now, is wasted, and is neither an efficient nor a helpful instrument in competing against Hollywood.

Table 4.8 – Methodology used for research question 9

<i>Research question</i>	<i>Methodology</i>
<i>9. What kinds of firms do resort to public aid, and what conclusions can be drawn from this?</i>	<p>Mixed-methods research, grounded on previous empirical observations and qualitative approach</p> <ul style="list-style-type: none"> <li>- Descriptive statistics: profitability in terms of rates of return, based on the sample annual populations examined in <i>research questions 8 and 9</i>.</li> <li>a) profitability performance of subsidised films vs. non-subsidised films;</li> <li>b) percentage of films that become profitable as a consequence of public aid vs. films that do not break even, despite the contribution of public aid</li> </ul>

Using the empirical observations and conclusions that can be drawn by answering the previous research questions, the researcher was able to deal with the final question:

*10. Is it possible to work out a new framework for the problem of subsidies that the Ministry of Cultural Heritage could submit to the government, which could constitute a more efficient system to finance, manage and stimulate the Italian film industry?*

Through an association of quantitative observations based on descriptive statistics, and qualitative research methods, the answer to this final query should make it possible to suggest an outline for the Italian industry – and for the larger European industry as well – that could represent a new cultural model not aimed at acclaiming or blaming the public subsidy – depending on the results obtained – but granting the film companies adequate monetary support in a more efficient and competitive market.

Table 4.9 – Methodology used for research question 10

<i>Research question</i>	<i>Methodology</i>
<i>10. Is it possible to work out a new framework for the problem subsidies that the Ministry of Cultural Heritage could submit to the government, which could constitute a more efficient system to finance, manage and stimulate the Italian film industry?</i>	<p>Association of previous quantitative observations based on descriptive statistics, and qualitative research methods.</p> <p>This part is influenced, but not based, upon two methodologies:</p> <ul style="list-style-type: none"> <li>- <i>Action research</i>. By answering the question the researcher put forward action for change in the present subsidy policy models. Planning about a new model to be implemented, and decision taking.</li> <li>- <i>Grounded theory</i>. “Inductive/deductive approach”. The data collection and analysis starts without the formation of a preliminary researchers’ framework about a possible “right” model to present and develop.</li> </ul>

#### 4.4 Conclusions

The chapter has explained the range of methodologies used in the thesis. It has been stated that the work is based principally on quantitative data, and specifically for the risk and return trade-off section (see par. 4.2), while qualitative data process is proposed in addition to quantitative methods when discussing the state support section, in which the efficacy of the Italian state subsidy for films is examined (see par. 4.3). The work is basically quantitative since it mainly uses data analysis procedures such as graphs, tables, statistics,

that originate or use numerical data. More specifically, it has been explained that a multiple method choice is adopted, in that the researcher uses more than one data collection technique to meet the research questions that were posed at the beginning of the thesis and that are re-presented one by one in this chapter, together with the methods and criteria adopted to satisfy each of them.

The methodologies selected are pertinent to the analyses conducted, since they permit quantitative analyses to be conducted in an very convenient and comprehensible form. In addition, the methodologies used are pertinent in that they allow the researcher to summarise the results referring to the extremely high number of observations included in the thesis with few representative indicators, able to characterize the very large amount of information and statistics processed and examined. Also the graphical analyses conducted in the thesis support this process, since they make it possible to have a direct visual representation of the results obtained.

**5**

**Data**

This chapter is about the data sources used in this work. It is broken down into three parts:

1. Background history of the subsidy allocation (5.1);
2. Sources, assembly, construction, cleaning, dimensions of data (5.2);
3. Full descriptive analysis (5.3)
4. Limitations of this data (5.4)..

## **5.1 Background history of the subsidy allocation**

In this first section the background history of public subsidy in the Italian film industry, and documentation of the subsidy allocation process referring to the 1995-2003 time span analysed in the thesis is described and discussed. In order to do this, the information included in this paragraph refers to all the subsidies assigned by the Italian State to the Italian film industry during the period 1995-2003. These statistics do not correspond to those used in the thesis, as only complete and statistically reliable data were included in the final dataset of 566 Italian films, as explained in the methodology chapter (See chapter 4). Data on the subsidies analysed in the thesis are described in paragraph 5.3.5 “Descriptive analysis of subsidies”. In the same way, all the other data included in paragraphs 5.2 and 5.3 refer to the specific dataset used in the research.

The information comprised in paragraph 5.1 was obtained through:

- direct observation of public records and primary sources. This includes: first, the analysis of each of the nine annual official FUS (Fondo Unico per lo Spettacolo – Performing Arts Fund) reports reported to the House of Parliament containing all relevant regulatory and financial information concerning amount and allocation modalities of subsidies to the Italian Cinema. Second, the collection and analysis of all the related laws and regulations adopted over the years, and which constitute the background on which the subsidy allocation procedure evolved over the time span analysed.
- unstructured interviews of individuals belonging to national bodies such as the DGC, Direzione Generale per il Cinema (Directorate General for Cinema) of the Italian Ministry of Cultural Heritage, and Cinecittà Holding; supranational bodies such as the European Commission and the Council of Europe; and financial institutions involved in the film financing process;
- analysis of specific case studies concerning the subsidy procedure of some films;
- residually, archival research with investigation of administrative documents and records.

These aspects are explained in the methodological chapter (paragraph 4.2).

The main phases that brought about the subsidy regime in Italy and the reasons behind its application are described in this section to give an idea of state of public financial support of the Italian film industry throughout the years covered by the analysis.

### **5.1.1 The subsidy regime in Italy**

The Italian state, in common with most countries competing with the US, finds it necessary to provide financial support for its film industry (Perretti, Negro, 2003). This support dates back to the 1920s in Europe, and in Italy – along with the other main European countries – “after an initial wave of protectionist regulation in the form of screen quotas” (Lange, Westcott, 2004, page 11), from 1927 public intervention rapidly started as direct economic aid.

Decision-making processes about the available funds to be assigned to the Entertainment sectors, and to Cinema as a result, are up to the Government in charge, on an annual basis. Through the approval of the annual finance bill, from the national accounts budget a variable sum is assigned to the FUS. The regulatory foundation on which financial public aid to the film industry and other performing arts rests was formulated in Law no.163, dated 30<sup>th</sup> April 1985, which set up the FUS – the exclusive legal institution created for the purpose of financing different artistic and cultural activities and administering all the financial resources necessary to support bodies, institutions, associations, authorities and companies working in the sectors of activities of:

- cinema;
- music;
- dancing;
- theatre and drama;
- circus arts and travelling shows.

This law provided for a financial adjustment of the FUS every three years. However, the 1989 finance bill started to reduce the amount of funds assigned to the FUS, so that its

financial adjustment still now occurs on an annual basis. The trend of resources allotted to FUS during the 1995-2003 time span (to which the decade 1985-1994 has been added for the sake of presentation) is shown in the following Table 5.1. It emerges that although the current euro values of resources assigned to FUS have risen over the years (+10.35 per cent from 1995 to 2003), the amount of money expressed in constant 1985 euros has significantly decreased (-8.65% per cent from 1995 to 2003).

Table 5.1 – 1985-2003 FUS trend, expressed in current value euros and constant 1985 euros

Year	Current Euros		Constant 1985 Euros	
	Annual Fund	Variation	Annual Fund	Variation
1985	363,484,985		363,484,985	
1986	415,130,675	14.21%	391,263,570	7.64%
1987	440,953,520	6.22%	397,255,464	1.53%
1988	463,261,838	5.06%	397,649,650	0.10%
1989	487,018,856	5.13%	392,124,659	-1.39%
1990	511,808,787	5.09%	388,392,400	-0.95%
1991	438,988,364	-14.23%	313,067,117	-19.39%
1992	480,304,916	9.41%	324,954,702	3.80%
1993	464,811,209	-3.23%	301,796,802	-7.13%
1994	464,811,209	0.00%	290,371,454	-3.79%
1995	469,975,778	1.11%	278,673,494	-4.03%
1996	473,590,976	0.77%	270,276,382	-3.01%
1997	408,000,950	-13.85%	228,879,219	-15.32%
1998	464,811,209	13.92%	256,144,211	11.91%
1999	485,469,485	4.44%	263,367,349	2.82%
2000	500,963,192	3.19%	264,984,470	0.61%
2001	516,456,899	3.09%	266,059,594	0.41%
2002	512,990,000	-0.67%	257,997,392	-3.03%
2003	518,629,000	1.10%	254,571,639	-1.33%

Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

Notes: "Constant 1985 euro values" indicate the real value of Fund as of 1985, taking into account the purchasing power of resources obtained.

The sums shown in the tables are expressed in terms of the euro currency unit, which has been in force in Italy since 1<sup>st</sup> January 2002 only. Therefore, the annual funds allocated from 1985-2001 have been converted into euros, according to the fixed exchange rate of 1,936.27 Italian lire for 1 Euro.

Article 2 of the mentioned law 165/85 provided for the following share-out percentages among the five different sectors the FUS deals with, to be calculated on the total annual resources that the FUS can command:

- music and dancing: not less than 45 per cent;
- cinema: 25 per cent;
- theatre and drama : 15 per cent;
- circus arts and travelling shows: 1 per cent.

These share-out quotas remained in force up to 1990. The subsequent Ministerial Decree D.M. 18<sup>th</sup> June 1990 modified these percentages – by renaming some of the sectors – with a substantial squeeze for the slice of funds dedicated to Cinema:

- opera and lyric activities: 47.8110 per cent;
- cinema: 18.8696 per cent;
- theatre: 16.2641 per cent;
- music: 14.0176 per cent;
- circus arts and travelling shows: 1.5166 per cent.

The remaining 1.5211 per cent constitutes residual resources that FUS can use annually for specific needs of the different sectors.

As from 2002 this scheme was abolished, and since then the Minister of Cultural Heritage decides annually the share-out percentages for each FUS sector.

Concerning Cinema specifically, Law no.1213, dated 4 November 1965, laid the foundations for public intervention in the Italian film industry, by recognising that the “State considers cinema as a way of artistic expression, cultural training, and social communication and recognises its economic and industrial importance”. The reason justifying the public intervention in the industry is that “production, distribution and screening of film activities are reckoned as activities of significant general interest”.

The scope and detail of public intervention has changed significantly since then, especially after the promulgation of the Decree no.26, dated 14<sup>th</sup> January 1994, then converted with amendment into the Law no.153, dated 1<sup>st</sup> March 1994. This directive came into force in the first year of the dataset used in this thesis, so assuring a high degree of statistical homogeneity in the data. The motivation of this regulation is the intention of the State to promote “Cinema of national cultural interest”. Of the nine articles constituting the Decree, those especially relevant to this work are: (1) about the determination of criteria and general principles to be used in granting loans to nationally produced films and films of cultural interest; (4) about the determination of the maximum amount of a loan assignable to productions of cultural interest and with significant cultural and artistic purposes; (6) about the determination of share-out percentages and admissible costs for nationally produced films and films of national cultural interest.

Which categories of films can be financially supported by the State? The law identifies different situations, which are described hereafter.

### ***Public aid to films of national cultural interest***

Law 153/1994 states that a production can be recognised as a “film of national cultural interest” (from now on “film of NCI”)<sup>35</sup>. This recognition is given by the Advisory Committee for Cinema, on the basis of the screenplay and the production in its whole conception. A recognised project then passes through the examination of the Committee

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<sup>35</sup> In addition to regulations mentioned in the text, the Italian Republic itself – in the execution of articles 21 and 33 of the Constitution – acknowledges Cinema as an essential means of artistic expression, cultural education, and social communication.

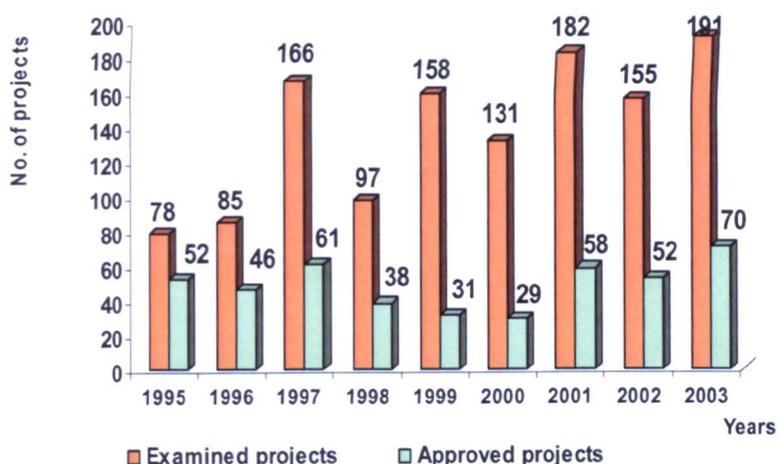
for Cinema Credit, which decides – based on a survey carried out by Banca Nazionale del Lavoro (BNL), the Italian bank also involved as Trustee Bank in the film subsidy allocation process – on the loan-worthiness of the producer(s) and the maximum amount of the loan. Additionally, films of national cultural interest can take advantage of the Participation Fund (Fondo di Intervento), assisted by the Guarantee Fund (Fondo di Garanzia). Through this Guarantee Fund the State takes on a considerable share of the funds assigned, in case the films are not successful in commercial terms, by putting aside a provision equal to 70 per cent of the financing given. This information is important because, on the one hand, the aim of the State is to foster and facilitate the production of “high quality” films of cultural interest, even by minor companies; on the other hand, it could be argued that these resources often become ‘moral hazard’ *sunk costs* for the State since the producers are not required to repay them, so they could be lax with the subsidies. This critical aspect will emerge from the outcomes obtained, and presented in the “Result chapter”. Table 5.2 and Figure 5.1 summarise the trend of the number of films that have applied for the recognition of national cultural interest, and those that attained this acknowledgment over the time span of analysis.

Table 5.2 – Trend of films of national cultural interest 1995-2003

Year	No. examined projects	No. approved projects	% approved projects
1995	78	52	66.7%
1996	85	46	54.1%
1997	166	61	36.7%
1998	97	38	39.2%
1999	158	31	19.6%
2000	131	29	22.1%
2001	182	58	31.9%
2002	155	52	33.5%
2003	191	70	36.6%

Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

Figure 5.1 – Trend of films of national cultural interest 1995-2003



Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

Table 5.3 displays the number of subsidies granted to films of NCI over the years investigated. Note that this number is usually lower than that shown in Table 5.2, as not all the productions that achieve the recognition as films of NCI are entered for consideration for a subsidy by their production companies. However, the numbers in 1998 marked an exception to this regularity, with 44 films financed, although only 38 films attained the national cultural interest acknowledgment. This is due to the fact that

the Committees that take the two decisions are different and autonomous, and work with different modalities and times. The mean annual current value subsidy varies from a minimum of €1 million to a maximum of €2.4 million.

Table 5.3 – Films of NCI subsidised and amount of subsidies assigned: 1995-2003

Year	Subsidies assigned (current value)	No. of NCI films subsidised	Mean subsidy (current value)
1995	47,754,704	40	1,193,868
1996	41,006,677	40	1,025,167
1997	55,260,888	41	1,347,827
1998	80,163,923	44	1,821,907
1999	75,402,707	45	1,675,616
2000	40,025,409	25	1,601,016
2001	47,227,401	25	1,889,096
2002	110,844,380	52	2,131,623
2003	109,442,473	46	2,379,184

Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

### ***Public aid to nationally produced films***

Nationally produced films<sup>36</sup> (from now on also NP films) are not submitted to any assessment from the Advisory Committee for Cinema<sup>37</sup>. They can benefit from cut-rate credit granted by BNL to produce films, once they have obtained a favourable opinion from the Committee for Cinema Credit. The producer must repay in full the loan to BNL. The maximum admissible cost the State can finance is €3,200,000 (conversion from the now obsolete Italian lira, based on the fixed conversion rate of 1,936.27), and

<sup>36</sup> A nationally produced film is a film whose production, distribution, export belong to companies with registered offices and fiscal domicile in Italy, or – according to reciprocity clauses – with base and nationality of other member countries of the European Union that have a subsidiary, branch or agencies in Italy, conducting most of their business there.

<sup>37</sup> The regulatory framework on nationally produced films refers essentially to the following regulations: Law no. 440, Article 17, paragraph 3, dated 2<sup>nd</sup> August 1988; Law no. 1213, 4<sup>th</sup> November 1965; Decree no. 26, dated 14<sup>th</sup> January 1994, converted with amendment into the Law no. 153, 1<sup>st</sup> March 1994; Ministerial Decree no. 457, dated 13<sup>th</sup> September 1999.

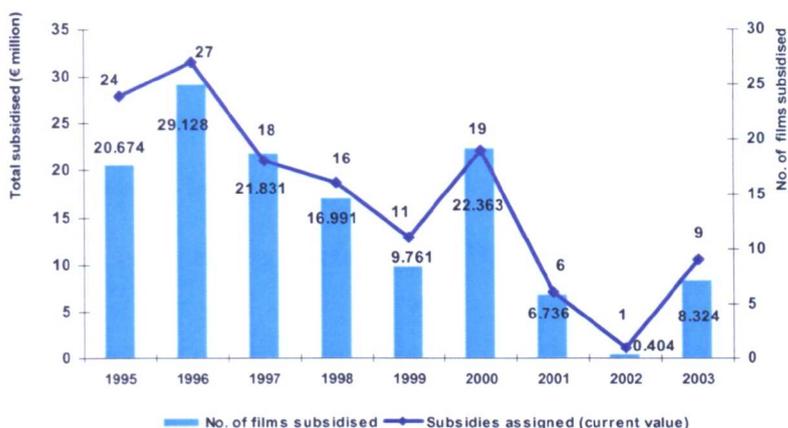
the percentage of the loan can cover up to 70 per cent of this cost. As from the D. Lgs. (Order in Council) 492/98, the loan has been converted into interest account financing. The most important observation here is that these kinds of films cannot “take shelter under the umbrella” of the Guarantee Fund, as films of NCI can do. Unlike films of NCI, nationally produced films must meet free market rules and compete in the market, since the financing obtained must be repaid in full. Thus, subsidies to NP films are a form of support to Cinema in its industrial acceptance, and BNL, in this respect, would operate in a manner similar to that of any other bank granting funds to an entrepreneurial undertaking. It is interesting hence to compare the number of NP films subsidised with the analogous number of films of NCI, as well as the monetary amount assigned to the two categories of films, since only those in the second category could potentially act as free riders, disregarding corporate financial sustainability. The following Table 5.4 and Figure 5.2 provide the data to make the comparison, by indicating the number of nationally produced films subsidised, the amount of subsidies allotted, and the mean subsidy per film.

Table 5 4 – Trend of nationally produced films 1995-2003

Year	No. of films subsidised	Subsidies assigned (current value)	Variation in subsidies	Mean subsidy (current euros)
1995	24	20,674,286		861,429
1996	27	29,128,169	40.9%	1,078,821
1997	18	21,830,633	-25.1%	1,212,813
1998	16	16,991,431	-22.2%	1,061,964
1999	11	9,761,035	-42.6%	887,367
2000	19	22,362,583	129.1%	1,176,978
2001	6	6,736,147	-69.9%	1,122,691
2002	1	403,869	-94.0%	403,869
2003	9	8,324,063	1961.1%	924,896

Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

Figure 5.2 – Trend of nationally produced films 1995-2003



Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

### *Public aid to first and second works*

Films in this category<sup>38</sup> can apply for funds of the Special Fund instituted at BNL, and can obtain the recognition of films of national cultural interest given by the Advisory Committee for Cinema, while the amount of the loan obtained is resolved by the Committee for Cinema Credit. For the purpose of the thesis, these films are important since, together with films of NCI, they can take advantage of the resources of the Guarantee Fund. Thus, also for first and second works, the State supports a kind of *sunk cost*, as the producers are not required to repay the sums received if the film is not successful enough. The maximum admissible cost to be supported by the State is €1,291,142, and the Guarantee Fund can cover up to 90 per cent of the granted loan to first and second works. According to the regulations, not more than 20 productions can belong to the category of first and second works each year.

<sup>38</sup> The regulatory basis of first and second works is set out in Law no. 1213, dated 4<sup>th</sup> November 1965, article 28, amended in Law no. 153, dated 1<sup>st</sup> March 1994, Article 8.

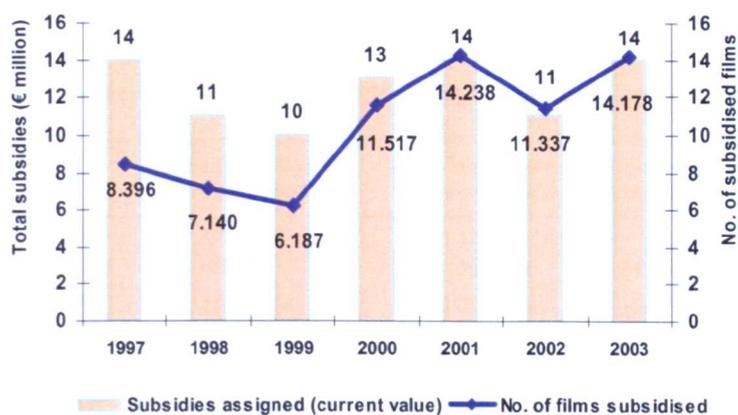
Table 5.5 and Figure 5.3 show the annual number of first and second works backed, the amount of subsidies assigned, and the mean subsidy per film. No data are available about first and second works before 1997, as the Special Fund was frozen in 1994, until the juridical legitimation of carried out by the Committee for Cinema Credit was cleared up. The unfreezing of financing occurred in 1997, thanks to the Ministerial Decree D.M.24<sup>th</sup> May 1997.

Table 5.5 – Trend of first and second works 1997-2003

Year	No. of films subsidised	Subsidies assigned (current value)	Variation in subsidies	Mean subsidy (current euros)
1997	14	8,396,039		599,717
1998	11	7,139,500	-15.0%	649,045
1999	10	6,186,637	-13.3%	618,664
2000	13	11,516,988	86.2%	885,922
2001	14	14,238,407	23.6%	1,017,029
2002	11	11,337,096	-20.4%	1,030,645
2003	14	14,178,456	25.1%	1,012,747

Source: 1995-2003 annual official FUS reports reported to the House of Parliament

Figure 5.3 – Trend of first and second works 1997-2003



Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

### ***Public aid to short films***

Short films can also be financially supported. Only for the sake of presentation are they mentioned here briefly, as they are included in the dataset of the thesis. Short films distinguished by “significant cultural and artistic purposes” can apply for cut-rate credit provided for first and second works<sup>39</sup>. From our analyses, it emerges that less than €1 million were allotted annually during the nine years investigated, to subsidise an annual number of short films between 10 and 25 on average.

### ***Public aid to technical industries, distributor and export firms***

Financial resources assigned to endorse technical industries, distributor, and export firms are not the subject of analysis in the thesis. Here public aid is aimed to promote film activities other than production. 28.6 million euros were allotted annually on average during the nine years from 1995 to 2003 to support these activities. Table 5.6 outlines the annual trend of public aid for this purpose.

Table 5.6 – Public aid trend to technical industries, film distributors and exporters 1995-2003

Year	Subsidies assigned (Italian lire million)	Subsidies assigned (current euros)	Variation in subsidies
1995	20,181.36	10,422,801	
1996	136,000.00	70,238,138	573.9%
1997	55,800.00	28,818,295	-59.0%
1998	35,700.00	18,437,511	-36.0%
1999	33,300.00	17,198,015	-6.7%
2000	52,000.00	26,855,759	56.2%
2001	46,800.00	24,170,183	-10.0%
2002		22,727,813	-6.0%
2003		38,745,952	70.5%
1995-2003 annual average		28,623,830	

Source: 1995-2003 annual official FUS reports reported to the House of Parliament.

<sup>39</sup> Law no. 1213/94, Article 8, paragraph 8.

An exhaustive overview of annual public aid to the Italian film industry in the period examined in the thesis is presented in Table 5.7. This Table includes the share of FUS appropriation attributable to the sector of Cinema, corresponding to the percentage mentioned in the previous pages, to be calculated on the total FUS resources granted annually by the governments in office. The Table also shows the annual actual available funds to the Cinema, which are usually higher than the annual share of FUS appropriation for the Cinema. Taking 2002 as a reference year, in addition to €55.5 million assigned to Cinema from FUS, €21.8 million were attributed through different ministerial decrees to Cinecittà Holding, The National School of Cinema, and the Venice Film Festival (La Biennale di Venezia, Settore Cinema – Mostra Internazionale d'Arte Cinematografica di Venezia). Also, in November 2002 the Ministry of Cultural Heritage freed previous idle funds, addressing €78.5 million to the Participation Fund to endorse film production. As a result, the actual available funds to Cinema in 2002 were €155.8 million.

The Table presents detailed information – in terms of funds received and number of films supported – about the categories of films included in the dataset of the thesis: films of national cultural interest (NCI); nationally produced films (NP); and first and second works. Subsidies to short films and technical industries, distributor, and export firms are not included, as they are not a part of the subject matter of the dataset used in the work (See chapter 5.2).

Aggregating the data referring to the nine years analysed, it emerges that €557.9 million were assigned to 382 films that could take advantage of the Guarantee Fund – respectively: 305 films of NCI, which obtained € 496.3 million, and 77 first and second

works, which obtained €61.6 million – while 130 nationally produced films, which cannot resort to the Guarantee Fund, instead obtained €135.8 million. Therefore, in the nine years examined, almost 80.5 per cent of public resources were addressed to productions that were not bound to make repayments to the State (in detail, 71.5 per cent to films of NCI, and 8.9 per cent to first and second works), while only about 19.5 per cent of these subsidies were destined to films that needed to achieve adequate market shares to be solvent. In terms of the number of productions subsidised, 74.6 per cent were films sheltered by the Guarantee Funds – 59.6 per cent of national cultural interest, and 15.0 per cent of first and second works – leaving only 25.4 per cent nationally produced films, which had to compete in the market to generate satisfactory cash flows.

Table 5.7 – Trend of FUS and Sector of Cinema 1995-2003: current euro values

		FUS appropriation to film production	Films of National Cultural Interest	National Produced films	First and second work
<b>1995</b>					
FUS appropriation - Section Cinema	85,697,242	68,428,990	47,754,704	20,674,286	0
% of total FUS	18.87%		40 subsidised films	24 subsidised films	0 subsidised films
Actual available funds to Cinema	110,549,986				
Total FUS appropriation	469,975,778				
<b>1996</b>					
FUS appropriation - Section Cinema	87,810,739	70,134,836	41,006,667	29,128,169	0
% of total FUS	18.87%		40 subsidised films	27 subsidised films	0 subsidised films
Actual available funds to Cinema	112,174,438				
Total FUS appropriation	473,590,976				
<b>1997</b>					
FUS appropriation - Section Cinema	88,533,365	85,487,560	55,260,888	21,830,633	8,396,039
% of total FUS	18.87%		41 subsidised films	18 subsidised films	14 subsidised films
Actual available funds to Cinema	105,873,664				
Total FUS appropriation	408,000,950				
<b>1998</b>					
FUS appropriation - Section Cinema	92,638,010	104,294,854	80,163,923	16,991,431	7,139,500
% of total FUS	18.87%		44 subsidised films	16 subsidised films	11 subsidised films
Actual available funds to Cinema	115,634,700				
Total FUS appropriation	464,811,209				
<b>1999</b>					
FUS appropriation - Section Cinema	94,292,634	91,350,379	75,402,707	9,761,035	6,186,637
% of total FUS	18.87%		45 subsidised films	11 subsidised films	10 subsidised films
Actual available funds to Cinema	109,230,634				
Total FUS appropriation	485,469,485				
<b>2000</b>					
FUS appropriation - Section Cinema	94,529,740	73,904,980	40,025,409	22,362,583	11,516,988
% of total FUS	18.87%		25 subsidised films	19 subsidised films	13 subsidised films
Actual available funds to Cinema	101,018,969				
Total FUS appropriation	500,963,192				
<b>2001</b>					
FUS appropriation - Section Cinema	99,002,721	68,201,955	47,227,401	6,736,147	14,238,407
% of total FUS	18.87%		24 subsidised films	6 subsidised films	15 subsidised films
Actual available funds to Cinema	99,002,722				
Total FUS appropriation	516,456,899				
<b>2002</b>					
FUS appropriation - Section Cinema	55,519,210	122,585,345	110,844,380	403,869	11,337,096
% of total FUS	11.08%		52 subsidised films	1 subsidised film	11 subsidised films
Actual available funds to Cinema	155,817,731				
Total FUS appropriation	512,990,000				
<b>2003</b>					
FUS appropriation - Section Cinema	93,193,200	131,944,692	109,442,473	8,324,063	14,178,156
% of total FUS	18.00%		46 subsidised films	9 subsidised films	14 subsidised films
Actual available funds to Cinema	170,689,144				
Total FUS appropriation	518,628,000				

Source: nine annual official FUS reports to the House of Parliament, Direzione Generale per il Cinema. Ministry of Cultural Heritage, 1995-2003

### 5.1.2 The selection Committee and the subsidy allocation process

A major issue here relates to doubts about the decision-making bodies responsible for subsidy allocation. Who deals with this process, and how fair is its/their conduct?

The bodies responsible are the Film Committees, whose membership is renewed every two years, renewable for a further two-year period only, through appointment by the Minister of Cultural Heritage<sup>40</sup>. Although the real decision-making takes place in the Film Committees, the law formally establishes that the executive responsibility resides with the sitting Chief Secretary of the DGC, based upon that official's assessment of the Committees' deliberations. However, from my meetings at the Ministry of Cultural Heritage it emerged that, despite this formal attribution of power, the different Chief Secretaries over the years have never obstructed the decision-making process, which, effectively, has always been determined by the Film Committees.

How are the Committee made up? Are the members independent to express an objective assessment?

Two Committees, previously mentioned, concern Cinema:

- *Advisory Committee for Cinema* is constituted of film critics, lecturers, and eminent cultural figures. It judges the qualitative aspects of films, and assigns the recognition of "national cultural interest" and "significant cultural and artistic purposes" to films.
- *Committee for Cinema Credit* is made up of economists, and experts in banking and corporate finance. It judges the admissibility requirements of films to subsidies, with reference to projects approved by the Advisory Committee for

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<sup>40</sup> See: Decree no. 545, dated 23<sup>rd</sup> October 1996, converted with amendment into Law no. 650, dated 23<sup>rd</sup> December 1996.

Cinema, and resolving directly for “nationally produced films” projects. It also identifies the monetary amount of subsidies to be given to each film, based on the congruity survey carried out by BNL.

The productions that are put forward to receive support from the Guarantee Fund – films of NCI and first and second works – are subjected to two assessments: the first, carried out by the Advisory Committee for Cinema, delivers the decision as to whether a production should be granted the qualitative recognition and so become eligible for the support of the Guarantee Fund; the second, carried out by the Committee for Cinema Credit, determines the financing. Nationally produced films are subjected only to the second, quantitative assessment by the Committee for Cinema Credit.

The funds are not dispensed in a once-a-year totality; instead, within the year, three sessions are fixed, each being allocated one third of the annual budget assigned to the specific film category<sup>41</sup>. The Committee often recommits unanimously the decision about a proposed film for reconsideration in the following session. The producers of these films have ten days to decide whether to re-present their proposals to the subsequent session or withdraw and wait for the following business year’s sessions. The rationale of this last option is that if a proposal is recommitted, each session’s assessment does not depend on previous ones, but in the case that the Committee definitively rejects a film from the subsidy procedure during a session, that proposal cannot be presented again before the following financial year.

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<sup>41</sup> Up to the half of mid, four annual sessions were fixed, each being allocated a quarter of the annual budget assigned to each film category.

The DGC's Chief Secretary is always at the head of both Committees, as the standing member. The transitory members are selected by the Minister of Cultural Heritage in office, except one of the members, who must have distinguished economic and financial competencies in the film industry, whose appointment is vested in the Commission of the Italian Regions.

One of the most controversial issues, debated time after time, concerns the level of objectivity of the Committee in conducting the subsidy allocation process. In particular, many critics make the point that because the members are elected by the Minister belonging to the Government in office, they could be nominated more for their concordant political views than for their real competencies in the field. The suspicion often put forward is that, instead of going to deserving directors and quality productions, some subsidies have been addressed to film directors close to a certain political wing, or to films conveying a particular political message<sup>42</sup>. As a result of my analyses the most plausible conclusion is that whatever political majority is in charge, the Film Committee's members are chosen in accordance with various opinions and viewpoints. "At the most, elected members are not all equally competent, but their nomination is certainly *super partes* ['above the parties' – impartial] and all the different points of view are protected". Direct observation of primary sources and public records about the people constituting the last Committees confirms the heterogeneity of views and competencies, although the question of the possible link of each of the members with political power as a main reason for their appointment cannot be answered definitively.

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<sup>42</sup> The intention of legislators through the promulgations of Decree no. 545/1996 converted into Law no. 650/1996 was to eliminate potential conflict of interests of people deciding about subsidies for films. In spite of this normative intervention, public opinion remains skeptical.

### 5.1.3 Who are the subsidisers

Up to this point, different percentages of acceptable cost have been reported concerning the maximum public contribution to produce films. The term “public” refers to any kind of public contribution obtainable within the European context. The ensemble of possible contributions an Italian film can get comprises sources from different levels:

- National: essentially by the annual funds guaranteed by FUS whose allocating process has been examined in this section, together with other minor funds such as those assured by law 122/1998<sup>43</sup> (with the obligation for Italian television companies to address part of their financial resources to Italian film productions), and through the “automatic contribution” assured to film companies in proportion to the box office revenues recorded by previous films<sup>44</sup>.
- Local: through regional funds, and the Italian Film Commissions, which operate at the regional, provincial and town level.
- Supranational: essentially through the *Media* programme<sup>45</sup>, and *Eurimages* fund<sup>46</sup>.

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<sup>43</sup> Law 122/1998. As the main Italian television companies are RAI (publicly owned) and Mediaset (private firm), this law determined the entrance into the Italian film industry of the two main television competitors: RAI through RAI Cinema, and Mediaset through Medusa.

<sup>44</sup> Italian film companies can benefit from contributions proportionate to the box office revenues generated by their films. To apply for the contribution, a request must be forwarded to the Ministry of Cultural Heritage by the 30<sup>th</sup> June of each year (<http://www.cinema.beniculturali.it/scadenze.asp>).

<sup>45</sup> *Media* programme “co-finances training initiatives for audiovisual industry professionals, the development of production projects (feature films, television drama, documentaries, animation and new media), as well as the promotion of European audiovisual works” ([http://ec.europa.eu/information\\_society/media/index\\_en.htm](http://ec.europa.eu/information_society/media/index_en.htm)).

<sup>46</sup> *Eurimages* “is the Council of Europe fund for the co-production, distribution and exhibition of European cinematographic works. Set up in 1988 as a Partial Agreement, it currently has 33 Member States. *Eurimages* aims to promote the European film industry by encouraging the production and distribution of films and fostering co-operation between professionals” ([http://www.coe.int/t/dg4/eurimages/default\\_en.asp](http://www.coe.int/t/dg4/eurimages/default_en.asp)).

In addition, forms of sponsorship from private individuals/bodies are sometimes observed, but constitute of course a private rather than a public form of contribution.

How much of the funds obtained by Italian film companies belong to the subsidies that constitute the data studied in this work, referring essentially to the “national sources” mentioned above? Even though an empirical quantification is virtually impossible, my meetings at DGC cast light on this issue, clarifying that at least “85 to 90 per cent of the overall public contribution obtained by Italian film companies in the nine years investigated refer to the funds allocated annually by FUS”<sup>47</sup>, whose allocation procedure is the main topic of this section. So, although other possible sources of financing are present, the subsidies that are the subject of this thesis constitute a very large part of the funds on which companies rely.

#### **5.1.4 An unbiased procedure? Possible overlapping interests**

Documentary analyses and unstructured interviews with different managers involved in the subsidy allocation process<sup>48</sup> have brought into question, firstly, whether impartiality is really possible, and, secondly, the degree of liberty in the decision-making power of the members of Committee.

Does the decision-making process in force during the time span analysed in this work really result in a fair money allocation to film producers?

By its nature, this question cannot be answered in a wholly empirical way, but the unstructured interviews carried out allow some answers to be given. Based on implications that can be drawn from public documentations and especially interviews, it

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<sup>47</sup> U. Baistrocchi, DGC, November 2008.

<sup>48</sup> See chapter 4.3, note 4.

can be stated that the Committee would try to be as fair as possible, but could not avoid – unconsciously or not – favouring some productions to the detriment of some others. Despite that, it could be affirmed that “equivocal phenomena can sometimes exist, but never preconceived preferential actions in favour of, or against, someone”<sup>49</sup>. Clearly, this statement needs to be assessed cautiously, since the people interviewed belong to DCG itself.

Do the decision-makers forming the Committee have overlapping interests with the films that will be subsidised?

Members of the Committee can never put themselves forward as applicants for subsidy during their tenure as Committee members. The people chosen as members must sign a declaration before accepting the appointment, according to which they “must swear they do not have any interest in the allocation process”, and they will not use their power to make indiscriminate decisions to favour or oppose any project. Although this regulation is supported by a formal, signed statement, deception is always a possibility. In particular cases, public records show that when one of the Committee’s members had clear overlapping interest with the project assessed, an informal solution to avoid the conflict of interest was often taken. This was the case when the very famous Italian performer Carlo Verdone was a member of one the Committees, and the film of his brother Luca had to be assessed. According to documentation available, Carlo Verdone left the meeting and did not vote, as was the custom of most of the other members in similar cases.

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<sup>49</sup> R. Del Tufo, DCG, and U. Baistrocchi, DCG, October and November 2008.

### **Regulatory sources mentioned in the text**

Law no.163, dated 30<sup>th</sup> April 1985

Ministerial Decree D.M. 18<sup>th</sup> June 1990

Law no.1213, dated 4 November 1965

Decree no.26, dated 14<sup>th</sup> January 1994

Law no.153, dated 1<sup>st</sup> March 1994

Law no.440, Article 17, paragraph 3, dated 2<sup>nd</sup> August 1988;

Decree no.26, dated 14<sup>th</sup> January 1994,

Ministerial Decree no. 457, dated 13<sup>th</sup> September 1999.

D.Lgs. (Order in Council) 492/98

Ministerial Decree D.M.24<sup>th</sup> May 2007.

Decree no.545, dated 23<sup>rd</sup> October 1996,

Law no. 650, dated 23<sup>rd</sup> December 1996.

Law no. 122, dated 30<sup>th</sup> April 1998

Constitution of the Italian Republic, articles 21 and 33

## **5.2 Sources, assembly, construction, cleaning, dimensions of data**

In this section sources, assembly, construction, cleaning, and dimensions of data used in the thesis are described, with reference to both the US and the Italian context. However, the focus is mainly on the Italian data, since the point of the US data is to provide a contrasting business model and industry structure.

### **5.2.1 Description of the US data**

#### **Sources and data introduction**

The dataset used for the empirical analysis comes from AC Nielsen's data<sup>50</sup>. The database was provided to the author by the supervisor of the thesis, Professor John Sedgwick, who obtained it as private data by kind permission of an AC Nielsen's executive. In an Excel spreadsheet file, it includes data of release in the US theatres, titles of motion pictures, number of US screens where they were projected, US box office revenues, real production cost, US distributor company with reference to 4,178 films released onto the US film market from 1988 to 1999. While many films have complete data for each relevant variable, some gaps are present for some productions, so justifying the following screening process to exclude some of them, and obtain a final dataset with a lower number of observations. It comprises both national and non-national productions released in the national cinemas by Hollywood companies. The percentage of non-US productions released in the American movie theatres is marginal,

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<sup>50</sup> *AC Nielsen* is a leading global provider of marketing research information services, analytical systems and tools, and professional client service. [www.acnielsen.com](http://www.acnielsen.com).

since the market share of Hollywood productions in the national cinemas is 90 per cent, leaving only 4.9 per cent as the market share of European productions, and about 4 per cent as that of US and EU co-productions (Focus 2008, World Film Market Trends).

As with the Italian dataset that will be introduced subsequently, the US dataset analyses the economic performances of films in the theatres only, and does not take other distribution channels into account, as the objective of the thesis is not to predict the overall expected profitability of film investments, but to assess indicators that can depict the scale or degree dispersion of these expected values – that is, the risk and return trade-off the film companies must face.

All the monetary values are in accordance with the financial principle of time value of money<sup>51</sup>, as they are converted into 1987 \$ prices: the values are expressed in real terms rather than in nominal terms, so they are already adjusted for inflationary considerations. The films were distributed by many different US firms, but eighteen main companies are identified. Many of these firms over the period have been the subjects of merger, acquisition and consolidation activity<sup>52</sup>. For market description and analysis of the main competitors operating in the US market, refer to paragraph 5.3.1, “US Dataset and market description”.

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<sup>51</sup> The principle of “time value of money” affirms that the cash flows must be discounted (or capitalized) at a rate expressing how much they are worth depending on the specific period (year) taken as reference (Brealey, Myers, 2003).

<sup>52</sup> This analysis considers the companies at the moment of the starting point of the study. However, it must be borne in mind that since that moment many among these companies have been subjected to various reorganizations. Columbia in 1989 was acquired by Sony; Fox Searchlight, in 1994 by 20<sup>th</sup> Century Fox, is considered as autonomous in the dataset; Gramercy merged with October Films and USA Home Entertainment to form USA Films in April 1999; MGM/UA is part of MGM Entertainment, and since 2001 it has been distributing its films internationally through Fox; in 2005 MGM was acquired by Fox; New Line is a subsidiary of Time Warner; Orion was sold to MGM in 1999 and became part of Sony in 2005; Sony Classics, founded in 1992 by Sony Pictures, is considered as autonomous in the dataset; TriStar, a subsidiary of Columbia Pictures, was transformed into Sony Pictures International from 1990; Triumph, a division of Sony Pictures Entertainment, in 1989 acquired its art-house sister company, Epic Productions Inc.; 20<sup>th</sup> Century Fox has been the international distributor for MGM since 2001.

### **Data assembly, construction, cleaning, and selection**

From the initial population data of 4,178 observations, a sample of 2,156 films has been selected, comprising all the films that have complete cost and revenue data. This population sample contains, however, a small number of films that generated extraordinary rates of return for their producer/distributor – in some cases over 1,000 per cent. These films generally cost very little to produce, but for some reason achieve the level of audience approval to generate such returns. These films have been eliminated from the subsequent analysis on the grounds that they contribute very little in terms of money generated, but distort the analysis of frequency distributions as a consequence of their extreme rates of return, owing to their very small cost denominators. Accordingly, 520 films – those that cost less than \$5 million to produce – have been eliminated<sup>53</sup>. The final US dataset is hence based upon a sample population of 1,636 films, each of which cost at least \$5 million to make in real terms. For each film, the dataset created includes essential information for analysis, such as total budget cost, total revenue at the US box office, year of release and US distributor. However, it must be stated that for some limited analyses, e.g., the cost frequency distribution examination, both the final dataset of 1,636 and the extended dataset of 2,156 films have been considered, in order to provide an even more complete picture of the situation.

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<sup>53</sup> The lowest budget films would interfere with the graphical presentation of the data and the analysis of the statistical distributions of rates of return. To understand the statistical features of these films, consider the film *El Mariachi*, which cost only \$5,500 generating \$1.5 million. The monetary gain generated is only little less than \$1.5 million, compared to an average market gain of \$4.4 million. However, the rate of return of *El Mariachi* is an extreme 28,514 per cent, because of its very small denominator in the formula of rates of return. Such values would distort considerably the graphical interpretation of the data and analysis proposed.

### **Dataset dimensions and sub-samples created**

The final US dataset of 1,636 films is shaped in different ways in the thesis to give rise to diverse sub-samples with different dimensions and purposes, as described hereafter.

- a) The final dataset was first considered in its entirety, but the films were clustered in different classes according to the specific subject of analysis, more specifically depending on the frequency distribution of revenues, frequency distribution of rates of return, or the frequency distribution of cost examined. The different unit intervals considered for each subject of analysis are described in detail in the following paragraph 5.3.2, “frequency distribution of cost”. To conduct scatter plot analyses, the final dataset was then further resolved into sub-samples of films with cost between \$5 and \$20 million; \$20 and \$35 million; \$35 and \$50 million; \$50 and \$70 million; and \$70 and \$140 million (see chapter 4, research question 3).
- b) For other purposes of analysis, the final dataset was also broken down into twelve annual populations, each one including all the films released in the years examined from 1988 to 1999, respectively. Each one of the twelve years includes a substantial number of releases, resulting in a mean annual population of 136.3 films.
- c) Finally, to analyse the comparative statistics among the main companies operating in the US market during the time span analysed, the final dataset was further resolved into eighteen sub-samples, referring to the populations of films released by the eighteen distribution Studios running the US market from 1988 to 1999. The mean company population is equal to 90.9 films, corresponding to a mean annual company population of 7.6 films. Furthermore, the populations of the five main companies in term of market shares have been further analysed (paragraph 5.3.2.2, “Frequency

distribution of cost – US companies' analysis): *Warner Bros* (224 films); *Buena Vista* (202 films); *Universal* (165 films); *Paramount* (161 films); *Twentieth Century Fox* (157 films). Again, these five company populations have been further used to construct: a) different sub-samples of films comparable in terms of costs; and b) different sub-samples of films belonging to diverse cost categories (see chapter 4, research question 4).

## 5.2.2 Description of the Italian data

### Sources and data introduction

The analysis of the Italian context and the inadequacy of data available made the construction of a new, usable and consistent dataset necessary. The raw data were provided by the Osservatorio di Cinecittà – belonging to Cinecittà Holding<sup>54</sup> – the centre for collection, analysis and diffusion of economic, qualitative and personal data of the Italian film industry. The data comprise unstructured information on production costs and box-office revenues, subdivided into year of collection, of all the films released in Italy from 1995 to 2004 by all the Italian companies, irrespective of their size or economic importance. Most of the information was contained in different word-processing programmes (Word, text document), or computer calculation programmes

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<sup>54</sup> *Cinecittà Holding* is the operating branch of the Ministry of Cultural Heritage, with the mission to promote Italian Cinema to increase its visibility and opportunities in Italy and worldwide. The *Osservatorio di Cinecittà* (*Cinecittà Centre for Film and Audiovisual Information's Observatory*) was born as a result of the 28/2004 law for reform of the Italian film industry. According to Cinecittà's website, the Observatory intends to cooperate with the main national and international institutions, professional associations, and main industry participants for an intense, concrete, and steady information exchange to enhance and expand the role of Italian Cinema within and outside national borders.

(Excel). For some observations the information in the computer files was highly compromised or incomplete, so supplemental paper documentation about data of single productions was examined. However, this supplemental process was employed only for a limited number of observations. Cinecittà obtain the data about box office revenues from BNL – the Italian bank also involved as Trustee Bank in the subsidy allocation process to film. The data about cost were strictly confidential, and have never been published or circulated before. As was pointed out in the methodology chapter, a deal to assure that they are not circulated outside the context of the research work and the people involved in it (e.g.: supervisors) was concluded with Cinecittà Holding's managers, as a condition of access for reading, dissecting, selecting, using and shaping them to create the Italian dataset used in the thesis. Only some single examples of cost and revenue for a limited number of selected films – for the sake of argument – are presented in the work, while most of data have been used conjointly to comment on and prove the final results of the total population or companies' populations.

Unlike the US data, the Italian data refer only to Italian productions released in the national cinemas, excluding foreign productions, among which those from Hollywood account for about 60 per cent of total attendances in the Italian theatres (Focus 2008, World Film Market Trends). But as in the US context, the Italian dataset considers only the theatrical revenues of films, and does not take secondary distribution channels, such as television, home video, video rental, into account, for the reasons already explained (chapter 4.2, point 1).

This initial cluster of data provided by Cinecittà Holding was unusable for financial analysis, because of the lack of consistent financial information about the production of

each single film. Therefore, the construction of a specific dataset for the purpose was required. The information was collected in several stages over a time span of ten months – from June 2006 to April 2007 – at the offices of Osservatorio di Cinecittà in Rome<sup>55</sup>.

### **Data assembly, construction, cleaning, and selection**

The dataset assembly and building up process was carried out by applying rules to make the data consistent and suitable for analysis. For each step in the process the state of the initial raw cluster of data is described (in italics) and then the rule applied to deal with it in the assembly, construction and cleaning stages of the dataset is explained.

1. *The economic data (costs and revenues) of each film of Cinecittà's initial database are recorded discretely, in nominal values – costs in the years they were incurred, and revenues in the years they were generated.* To bring them together for the dataset, the films have been ordered according to the year of theatrical release. Note that this year does not necessarily correspond either to the year(s) of box-office takings (which are usually spread over two or more years), or to the year(s) in which production costs were expended. For instance, €3.4 million spent on the production of the film *Non ho Sonno (Sleepless)* – released in the Italian theatres the 5<sup>th</sup> January 2001 - refers to 2002, so incurred after release, and concerning different categories of cost, such as extra publicity, perhaps. €2.9 million revenue was generated at the box offices from 2001 to

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<sup>55</sup> The collection of the data was made possible thanks to the approval of Cinecittà Holding and the Ministry of Cultural Heritage. Particular acknowledgments are first due to Alessandra Priante, Director of the Osservatorio di Cinecittà; then Antonio Breschi, Former Director of the Osservatorio di Cinecittà; and Gaetano Blandini, Chief Executive for the Film Industry at the Ministry of Cultural Heritage.

2004, but in accordance with the rule, this film has been included in the “2001 cluster”, corresponding to the year of its theatrical release.

2. *Cinecittà Holding’s initial database includes economic data from 1995 to 2004.*

The dataset created considers all the films from 1995 to 2003, excluding those produced in 2004, because the box office data for films released in 2004 refer only to 2004. A film screened at the end of 2004 will generate a large part of its revenue in 2005, for which no information is available. Thus, the rate of return calculated only on the 2004 data would be statistically misleading as a representation of the entire economic impact of the film at the box office. As a result, the “2004 cluster” of films has been excluded from the analysis.

3. *The initial raw data comprises all the films released during the period analysed.*

*The economic data of many films included are missing or incomplete: costs and/or revenues are not specified, or only in part.* The final dataset includes only those titles whose essential data – costs, box office takings and film producer – are complete and reliable in financial terms. By the application of this rule the final dataset consists of a sample of 566 films, which is, statistically, a very large and comprehensive population. In addition, the breaking down of the 566 films into the nine years analysed is homogeneous, as each annual sample includes a minimum of 50 films.

4. *In the initial unusable database, the costs and revenues of each film are*

*recorded discretely, in nominal values – costs in the years they were incurred, and revenues in the years they were generated.* So, the database, as assembled under rule 1, is financially inadequate since it does not respect the “time value of

money” principle<sup>56</sup>. Accordingly, all the economic data have been converted into 1994 € prices. 1994 was chosen as reference year, as it was the year when records of the economic data started. At this point, an explanation of the method used for three main issues needs to be given.

- (a) *Currency adopted.* All the monetary values in the final dataset are expressed in euros. However, the euro has been in force in Italy – and in the other countries belonging to the Economic and Monetary Union – only since 1<sup>st</sup> January 2002. Accordingly, a large part of the costs and revenues of films included in the initial raw data are expressed in the pre-euro Italian currency unit, the lira. Therefore, all the monetary values of such films have been converted into euros, according to the fixed exchange rate of 1,936.27 Italian lire for 1 euro<sup>57</sup>. Economic data of some films – straddling the changeover when the euro came into effect – are partially expressed in Italian lire and partially in euros in the raw data, and therefore required careful attention.
- (b) *Nominal versus real values.* Costs and revenues are expressed in nominal values in the raw data. Accordingly, the discounting rate used to deflate all the monetary values into 1994 € prices takes into consideration inflationary issues. Hence, the prices in the dataset are expressed in constant year values.

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<sup>56</sup> As already explained in the sections on the US context (paragraph 5.2.1., “Sources and data introduction”), the principle of “time value of money” asserts that the cash flows must be discounted (or capitalized) at a rate expressing how much they are worth, depending on the specific period (year) taken as reference (Brealey, Myers, 2003).

<sup>57</sup> The exchange rates among the different national currencies and euro were fixed by the Council of Europe on the basis of the different market value of currencies on the 31<sup>st</sup> December 1997, so that 1 ECU (European Currency Unit) was equal to 1 euro.

(c) *Time value of money.* The net present value, of costs and revenues into 1994 values can be easily explained according the well-know cumulative present value formula (Ross, Westerfield, Jaffe, 2002). The issue under discussion here is the decision about how much “time should cost” – that is, what value to attribute to  $k$ , the discounting rate expressing the cost of capital. To give maximum credence to the model, two initial extreme scenarios have been set up with respect to the value attributed to  $k$ . In the first, all the economic data are discounted to a cost of capital expressing the mean ROE (return on equity) of the European entertainment macro-industry over the whole period analysed. As the shareholders’ mean rate of return, this rate should express the maximum possible value to which the flows could be discounted. Assuming that the amount of box office takings is higher than production costs, the analysis conducted using this rate would underestimate the performances on the population investigated (higher denominator). In the second scenario, all the economic data are discounted to the minimum conceivable cost of capital, the risk-free rate. Still assuming that the amount of the receipts is higher than the costs, the analysis conducted would be the most favourable in maximising the performances of the films (lower denominator). However, owing to the insignificant difference in the results generated using the two discounting rates, the outcomes generated through the risk-free rate were taken as a reference in the analysis.

## Dataset dimensions and sub-samples created

The final dataset assembled, constructed and cleaned consists of 566 Italian films released in the Italian movie theatres from 1995 to 2003. This final sample is then re-evaluated and improved using different approaches.

- a) First, for different purposes of analysis the dataset constructed was regarded in its totality, and depending on the explicit subject of analysis – revenue frequency distribution, rate of return frequency distribution, cost frequency distribution – different unit intervals were considered. These data are illustrated exhaustively throughout the following section 5.3 of this chapter. In the same way as the US context, the final dataset of 566 films was also further broken into samples to carry out the scatter plot methodology. Each of these samples counts films respectively with production budgets between:  $\approx \text{€}0^{58}$  and  $\text{€}2$  million;  $\text{€}2$  and  $\text{€}4$  million;  $\text{€}4$  and  $\text{€}6$  million; and  $\text{€}6$  and  $\text{€}10$  million (chapter 4, research question 3).
- b) Second, the year of release of films in the theatres was taken as a key variable, to break down the entire dataset of films assembled into nine annual populations, each one corresponding to all the Italian films released on the Italian cinemas in the nine years from 1995 to 2003. The mean population of the 9 annual clusters is 62.9 films, which is less than half the mean of the US annual populations (See paragraph 5.2, “Dataset and sub-samples created”, the US Dataset). The year of release, not production or revenue collection year(s), was the year to which each film belongs to. Take the film *La Gabbianella e il Gatto*, produced by the *Cecchi*

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<sup>58</sup> The lowest production budget for a film in the Italian dataset is about 25 thousand euros. For ease of presentation the expression  $\approx \text{€}0$  is used to identify this amount throughout the chapter. See note 3 of chapter 4 for details.

*Gori Group*, as a model. It was screened in the theatres from December 1998. Its costs were 6.2 billion Italian lire recorded in 1997 – equivalent to €3.2 million. The box office receipts (converted into euros) generated from 1998 to 2004 were: 1,446,509 (1998); 8,512,417 (1999); 69,263 (2000); 18,318 (2001); 6,804 (2002); 6,352 (2003); 6,894 (2004). According to the first method of analysis (annual analyses), *La Gabbianella e il Gatto* was included in the “1998 cluster”, after discounting all the cash flows (costs and revenues) at the appropriate annual rate to 1994 euros, as explained<sup>59</sup>. In the Italian context the annual populations are further re-assembled in order to satisfy the research questions concerning the financial effectiveness of public subsidy, an issue that does not exist in the US context (chapter 4, research questions 7 and 8). In this perspective, the nine annual populations of the 566 Italian films have been additionally broken down into nine annual populations including the subsidised films only (equal to 131 observations in total, with a mean of 14.5 per year, and 23.1 per cent of the entire dataset); and nine annual populations including the non-subsidised films only (equal to 435 observations in total, with a mean of 48.3 observations per year, and 76.9 per cent of the entire dataset).

- c) Third, the film companies were taken as a key variable, in order to make a comparison of the corporate competitors in the Italian industry, the ways in which the companies operate in it, the characteristics of the performers, and all the idiosyncratic features distinguishing the national film companies. Due to the extremely fragmented Italian market, in which 55 per cent of films were released

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<sup>59</sup> See paragraph 5.2.2, Data assembly, construction, cleaning and selection, point c), Time Value of Money.

by a great number of companies that recorded only one quarter of the total revenues and produced on average little more than two films each during the nine years, the film populations of the eight main companies were analysed, corresponding to those companies that released a mean of at least three films per year. Based on the 255 films released by these eight main competitors from 1995 to 2003, the mean film population of these eight competitors is 31.9 films, and their mean annual population is 3.5 films. 3 out of the 8 company populations have been further examined, as only three firms were responsible for a statistically significant number of films: *Cecchi Gori*, 81 films; *RAI*, 47 films; *Medusa* 37 films, while the other five players released a minor number of films, not significant in statistical terms (ranging from 26 to 12 films in the nine-year research period). So in the thesis, different analyses have been conducted on the film populations of the three companies mentioned (chapter 4, research question 3). Other sub-samples of observations were created from the three companies' populations, to obtain: a) different sub-samples of films comparable in terms of costs; and b) different sub-samples of films belonging to very different cost categories (chapter 4, research question 4).

## **5.3 Full descriptive analysis**

This section conducts a full descriptive analysis of data used in the thesis both for the US and Italian context. Depending on the category of data examined, the section is organised in five sub-sections:

- Dataset and market description;
- Frequency distribution of cost;
- Frequency distribution of revenue;
- Frequency distribution of rates of return;
- Descriptive analysis of subsidies.

### **5.3.1 Dataset and market description**

The degree of concentration of the market is studied here, to observe how it is split up. The US context is described first to provide a contrasting business model and structure to the Italian one, which will be fully analysed then.

#### **US Dataset and market description**

The study brings out the oligopolistic nature of the US industry, in which a small number of competitors take the bulk of the market share, even though eighteen companies were active during the period analysed: Buena Vista, Columbia, Fine Line, Fox, Goldwyn Entertainment, Gramercy, MGM/UA, Miramax, New Line, Orion, Paramount, Sony Classics, Sony Pictures, Tristar, Triumph, 20th Century Fox,

Universal, and Warner Bros<sup>60</sup>. By considering the entire extended dataset of 2,156 films – that is, also including the films that cost less than \$ 5 million – it can be seen that the largest six Studios – *Buena Vista, Paramount, Sony, 20<sup>th</sup> Century Fox, Universal, and Warner Bros* – between them accounted for revenues of \$31,474 million out of the total \$42,564 million, equal to a market share of revenues of 73.9 per cent, although only 49.3 per cent of the films released in the time span explored are ascribable to these six companies. The total production cost of the 2,156 films was \$33,195 million, with a mean production cost per film of \$15.4 million. In greater detail, by considering only the observations referring to the final dataset of 1,636 films mainly used in the analysis – excluding the films that cost less than \$5 million – the picture is very similar: total box office revenues amounted to \$40,907 million – with a total production cost of \$31,727 million and a mean production budget per film of \$19.4 million. Based on the 1,636 films, the market share of revenues of the six largest competitors was even greater – 75.9 per cent – due to their propensity to produce higher cost productions. These six companies released 985 of the 1,636 films of this dataset, equal to 60 per cent. From these observations, it can be asserted that the US industry is hence very concentrated; each firm is aware of the actions of the others and the decisions of one influence – and are influenced by – the decisions of the others. The room for small players appears to be extremely limited. In Table 5.8 the data about revenues, market shares, and number of films of the six main companies are listed and those of the are summarised.

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<sup>60</sup> These are the companies active at the starting point of the investigation, although since then many of them have been subjected to reorganizations, as listed in the footnote 18 of this chapter.

Table 5.8 – No. of films and market share of film companies: US dataset: 1988-1999

Company	No. of films	(%)	Revenues (\$millions)	Market share (per cent)	Company	No. of films	(%)	Revenues (\$millions)	Market share (per cent)
Buena Vista	202	9.4	6,871	16.1	Buena Vista	194	11.9	6,767	16.5
Warner Bros	224	10.4	6,390	15.0	Warner Bros	210	12.8	6,339	15.5
Paramount	161	7.5	5,647	13.3	Paramount	154	9.4	5,571	13.6
Universal	165	7.7	5,044	11.9	Universal	156	9.5	4,967	12.1
20 <sup>th</sup> Century Fox	157	7.3	4,690	11.0	20 <sup>th</sup> Century Fox	150	9.2	4,632	11.3
Sony	153	7.1	2,832	6.7	Sony	121	7.4	2,753	6.7
<b>Total</b>	<b>1,062</b>	<b>49.3</b>	<b>31,474</b>	<b>73.9</b>	<b>Total</b>	<b>985</b>	<b>60.2</b>	<b>31,029</b>	<b>75.9</b>
Other firms	1,094	50.7	11,090	26.1	Other firms	651	39.8	9,878	24.1
Market 1988-1999	2,156		42,564		Market 1988-1999	1,636		40,907	

Notes: The market shares are calculated from the population of 2,156 films (first table), and from the cleaned population of 1,636 films that excludes films that cost less than \$5 million (second table) released onto the US market from 1988 to 1999.

Source: AC Nielsen.

### Italian Dataset and market description

The sample population of the Italian dataset consisting of the 566 films released by the Italian companies onto the national market from 1995 to 2003 indicates a very fragmented market. The market breakdown – in terms of number of films and market share – is summarised in Table 5.9.

Table 5.9 – No. of films and market share of Italian film companies: Italian dataset 1995-2003

Company	Participating as main or only company - No. of films	Participating as an associate or minor company - No. of films	Total No. of films	Revenues (€ million)	Market share (per cent)
Cecchi Gori Group	80	1	81	249.7	28.8
RAI Radiotelevisione	6	41	47	48.0	5.5
Medusa Film	32	5	37	119.7	13.8
Istituto Luce	1	25	26	14.1	1.6
Filmauro	19	3	22	145.4	16.8
Cattleya	11	4	15	21.9	2.5
Mikado Film	10	5	15	8.2	0.9
Fandango	12	0	12	30.8	3.6
<b>Total</b>	<b>171</b>	<b>84</b>	<b>255</b>	<b>637.8</b>	<b>73.5</b>
			(45.1 per cent)		
Other companies			311	229.8	26.5
			(54.9 per cent)		
Market 1995-2003			566	867.6	

Notes: The results are obtained from the population of 566 films released onto the Italian market from 1995 to 2003.

Source: Dataset building started from scratch on the basis of information supplied by Osservatorio Cinecittà

Eight main companies can be highlighted, but in size and performance they are not comparable with the US Majors examined (Table 5.8). The total revenues of the eight main Italian firms during the period amounted to €637.8 million – that is, 73.5 per cent of €867.6 million recorded for the whole market in Italian films. It is important to note that this amount of liquidity is generated by only 255 films, 45.1 per cent of the 566 produced altogether. This information clearly suggests that 54.9 per cent of films were released by a great number of companies that recorded only one quarter of the total revenues. This implies that most of the films produced by minor firms, some of which just entered the market for one or two films and then disappeared, generated substantial losses. The 311 films not released by the eight largest companies were produced by 111 different companies – that is, each of these minor producers released a mean of only 2.8 films during the nine years analysed. Apart from the number of films they released, the different role of the first eight competitors is signalled by the box office revenues registered. The 255 films released by these companies recorded a mean revenue of €2.5 million, whereas the mean revenue of the 311 films released by the other 111 competitors was only €0.7 million. The 566 films record total a production cost of €1,423 million, with a mean cost of about €2.5 million.

In theoretical terms, the Italian context can be defined as an oligopolistic market – like the US market – since it is dominated by a small number of companies that have the bulk of the market share. The first three companies in terms of market share, *Cecchi Gori Group*, *Medusa*, and *Filmauro*, together recorded €514.8 million in revenues, equivalent to 59.4 per cent of the Italian market. However, the huge number of firms

extensively involved clearly indicates the lack of seller entry barriers, thus distinguishing it from the pure form of oligopoly (Pindyck, Rubinfeld, 2001).

An additional consideration needs to be stressed. As already mentioned, the analysis carried out refers only to that share of the market occupied by Italian films, and not to the market as a whole. As Table 5.10 highlights, the national films get only about one quarter of the whole Italian market over the period of analysis (23 per cent on average from 1995 to 2003)<sup>61</sup>. About 61 per cent of the market is dominated by Hollywood productions, a result in line with that observed in the European market as a whole (see Figure 2.15, Chapter 2). This fact needs to be borne in mind to understand the results obtained, which refer to national films only, with only one quarter of the Italian market.

Table 5.10 – Market share of the Italian market by origin of films

<i>percentage values</i>	1995	1996	1997	1998	1999	2000	2001	2002	2003
National films	23.7	23.9	31.3	23.6	24.0	17.5	19.3	22.1	21.8
European films	11.7	12.5	15.9	10.8	21.4	11.5	17.1	12.7	8.3
US films	62.8	60.8	48.7	65.2	53.6	69.5	59.9	60.2	64.5
Other countries' films	1.8	2.8	4.1	0.4	1.0	1.5	3.7	5.0	5.4

*Source:* Media Salles, European Cinema Yearbook.

*Notes:* European refers to the countries belonging to the European Union (EU-15).

### 5.3.2 Frequency distribution of cost

In this section a descriptive analysis of cost is presented. This argumentation is particularly relevant in the light of the results that will be shown in the following chapter for the US and the Italian context, as they are based on an extremely different cost baseline. This analysis considers both the total populations of the US and Italian datasets, and the populations of the main companies of the two contexts.

<sup>61</sup> As of 2008, the market share of Italian productions in the Italian movie theatres is equal to 33 per cent (Focus 2008 - World Film Market Trends).

### **5.3.2.1 Frequency distribution of cost - *Total populations***

The first of analysis is about the production costs of the total populations of films in the two markets.

#### **Frequency distribution of cost - Total US population**

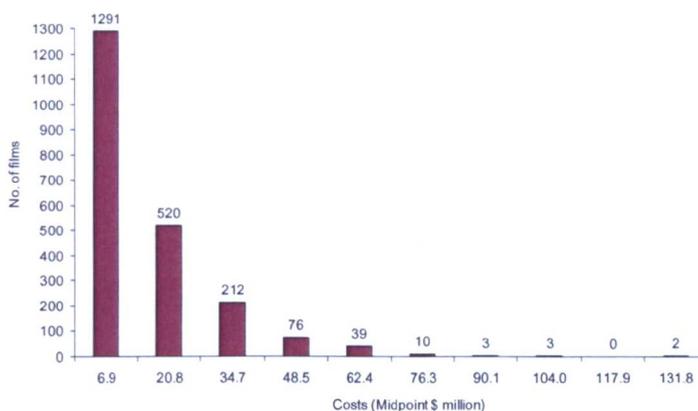
Considering the sample of 2,156 films (referring to all those films that have complete information on costs, including those that cost less than \$5 million, in real terms), 1,291 films fall within the first decile grouping, having a mid-point production budget of \$6.9 million. Furthermore, more than 1,800 films fall into the first two decile groupings, corresponding to more than 83 per cent of the total sample analysed. In fact, the number of films per decile decreases sharply, in a quasi-geometric progression, as the costs increase until, in the last five deciles there are only 18 films (0.83 per cent of the sample) altogether, i.e., only 18 films out of 2,156 cost more than 69 million dollars (see Figure 5.4). The mean production budget of the database of 2,156 is equal to \$15.4 million.

If the final data set of 1,636 films is broken down into deciles of cost, the result is similar (Figure 5.5). Even by excluding the cheapest productions (with the fixed floor threshold of \$5 million), 63.4 per cent of the population belongs to the first decile group, 20.2 per cent to the second decile group – that is, 83.6 per cent of films fall into the first two decile groupings – while only 2.3 per cent of observations is included in one of the unit intervals between the 5<sup>th</sup> and the 10<sup>th</sup>. Due to the exclusion of the 520 productions that cost less than \$5 million, the mean production budget of the final dataset of 1,636

films is naturally higher than the previous sample of 2,156 observations, and is equal to \$19.4 million.

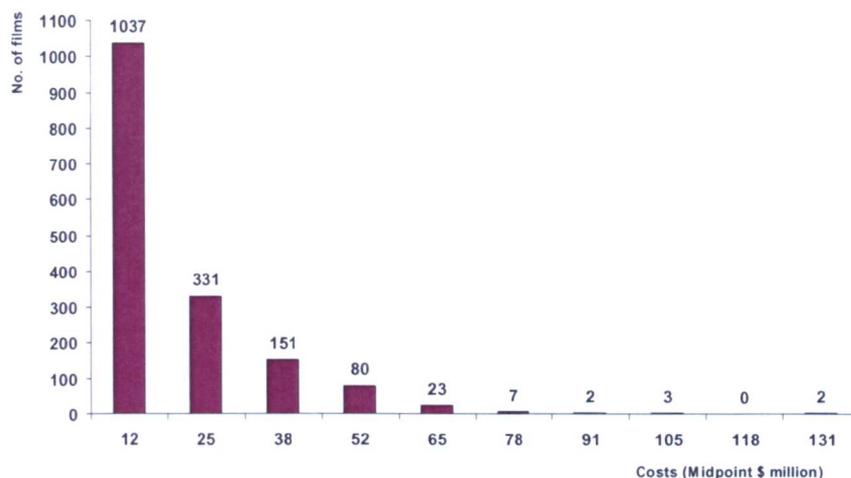
Just looking at Figure 5.4 and Figure 5.5, it could be said that most of the films seem to be low budget, but this is only a visual impression, since even the first unit intervals refer to films for which the costs varied over millions of dollars. In this perspective, the comparison with the Italian cost frequency distribution – presented below – is particularly revealing. With this in mind it has also been interesting to investigate whether a possible relationship between costs and revenues exists (see par. 6.1 for results).

Figure 5.4 – Film distributions of costs per decile – US Population of 2,156 films



*Notes:* The film distribution of cost per decile analysed here refers to the population of 2,156 films, which also includes those that cost less than \$5 million.

Figure 5.5 – Film distributions of costs per decile – US Population of 1,636 films



*Notes:* The film distribution of cost per decile analysed here refers to the final population of 1,636 films, which excludes those that cost less than \$5 million.

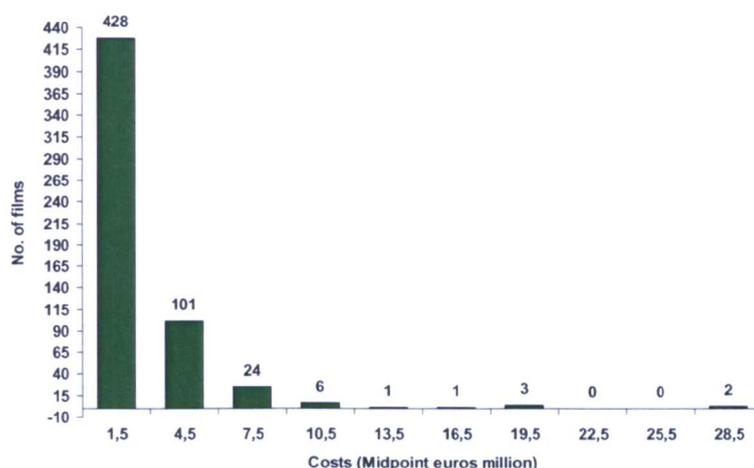
### Frequency distribution of cost - Total Italian population

The analysis of the frequency distribution of costs per decile for the Italian market displayed in the Figure 5.6 is striking and unambiguous. Like that of the US, the Italian market is concentrated on the first two cost decile groupings. However, the mean cost for the first unit intervals is markedly lower than is the case with the equivalent US intervals. The Italian market is almost entirely composed of low-budget films, since 428 observations – 75.6 per cent of the market – are located in the first decile, comprising films that cost less than €3 million (first bar in Figure 5.6, with a midpoint cost of €1.5 million). Taken together with the 101 films in the second decile, it emerges that 93.5 per cent of Italian films had a production budget less than €6 million. The remaining 37 films – 6.5% of the market – are spread across the other eight decile groupings, and just 12, 2.1 percent of the 566 film population, cost more than €10 million. The mean cost of the total population of 566 films investigated is €2.5 million – compared with a mean of

€15.4 or €19.4 million for a US film, depending on the dataset considered – and the median cost is €1.95 million.

From the cost frequency distributions it is clear that there is an order of magnitude difference in the scale of financial resources available to the companies working in the two industries, with the Hollywood majors able to command much higher funds to finance their productions than their Italian competitors.

Figure 5.6 – Frequency distributions of costs per decile



### 5.3.2.2 Frequency distribution of cost – *Companies analysis*

To give some indication of the disproportion in the production budget variable, a cost distribution analysis for the main competitors operating in the US and Italian industries has been conducted.

#### Frequency distribution of cost – US companies analysis

Five Hollywood majors were investigated. The cost distributions per decile for these companies are represented respectively in Figures 5.7, 5.8, 5.9, 5.10, 5.11, and Tables 5.11, 5.12, 5.13, 5.14, 5.15. The common pattern for each company is easily

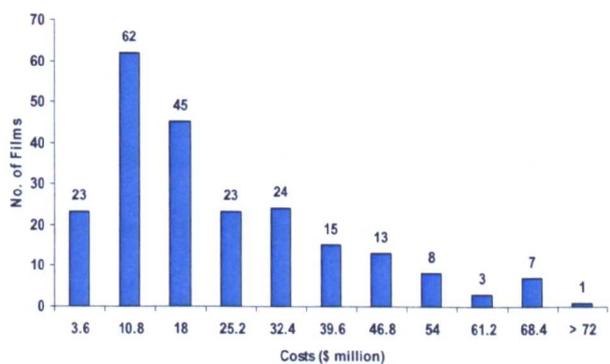
identifiable: the vast majority of productions are placed in first decile groupings, with a steady downward trend across to the last decile groupings. However, the mean cost is considerable, between \$10 and \$30 million, as can be seen in each of the Figures and Tables referring to the five firms analysed. Note that for each Major, the very few films with extraordinary production costs (one or two at the most for each firm) are regarded as outliers, and are not included in the decile classification, but inserted in a separate final interval.

*Warner Bros* was the most prolific firm, producing 224 films over the twelve years analysed, equal to an annual mean of 18.6. The mean production budget is considerable and equal to \$23.4 million (\$24.5 million, if the films that cost less than \$5 million are excluded), with \$5.232 million invested in total. The median cost for this company is \$17.7 million. The most expensive production was *Lethal Weapon 4*, which cost \$92.3 million, while none of the other 223 films cost more than \$72.5 million. Only 5.8 per cent of *Warner Bros*' productions cost less than \$5 million.

Table 5.11 and Figure 5.7 summarise *Warner Bros*' frequency distribution per decile of cost.

Table 5.11 and Figure 5.7 – Film distributions per decile of cost: *Warner Bros*

Cumulative Frequency Distribution	Frequency Distribution	Costs (\$million)
23	23	≈ 0 - 7.2
85	62	7.2 - 14.4
130	45	14.4 - 21.6
153	23	21.6 - 28.8
177	24	28.8 - 36
192	15	36 - 43.2
205	13	43.2 - 50.4
213	8	50.4 - 57.6
216	3	57.6 - 64.8
223	7	64.8 - 72
224	1	> 72

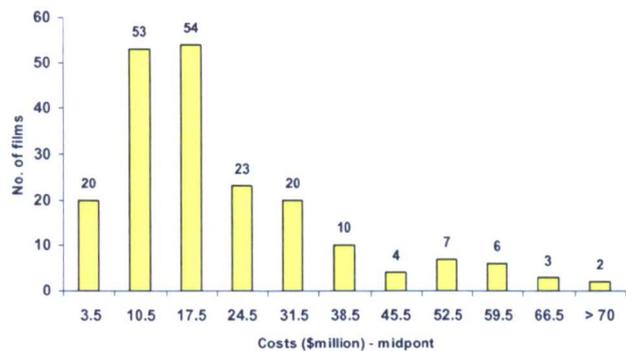


*Buena Vista* released 202 films – that is, an annual mean of 16.3 productions over the twelve years analysed. The mean cost was \$22.7 million (\$21.9 million, considering the \$5 million floor threshold), for a total of \$4.433 billion invested. The company assigned production budgets of less than \$5 million only to eight films, while two productions – *Tarzan*, and *Armageddon* – cost more than \$100 million. The median cost of *Buena Vista*'s productions is \$17.7 million.

Table 5.12 and Figure 5.8 summarise *Buena Vista*'s frequency distribution per decile of cost.

Table 5.12 and Figure 5.8 – Film distributions per decile of cost: *Buena Vista*

Cumulative Frequency Distribution	Frequency Distribution	Costs (\$million)
20	20	≈ 0 - 7
73	53	7 - 14
127	54	14 - 21
150	23	21 - 28
170	20	28 - 35
180	10	35 - 42
184	4	42 - 49
191	7	49 - 56
197	6	56 - 63
200	3	63 - 70
202	2	> 70

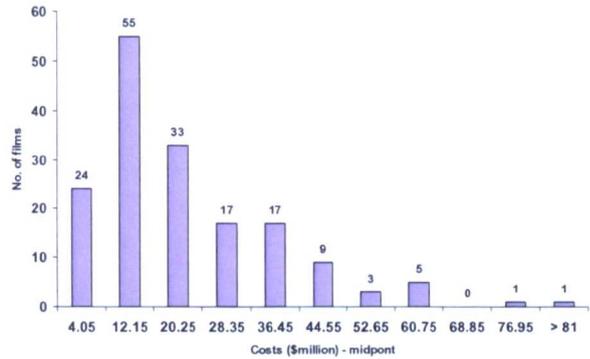


The mean of *Universal*'s 165 productions is \$22.6 million, corresponding to a mean annual population of 13.75 films over the period. The mean production budget is \$21.5 million if the 13 films whose cost is less than \$5 million are excluded. The total capital expenditure allocated to production budgets was \$3.555 billion, with a median cost of \$16.3 million. None of *Universal*'s films cost more than \$62 million, apart from *Dante's Peak*, \$81.3 million, and *Waterworld*, \$129.4 million – both resulting in unsuccessful box office outcomes (also see par. 6.1).

Table 5.13 and Figure 5.9 summarise *Universal's* frequency distribution per decile of cost.

Table 5.13 and Figure 5.9 – Film distributions per decile of cost: *Universal*

Cumulative Frequency Distribution	Frequency Distribution	Costs (\$million)
24	24	≈0 - 8.1
79	55	8.1 - 16.2
112	33	16.2 - 24.3
129	17	24.3 - 32.4
146	17	32.4 - 40.5
155	9	40.5 - 48.6
158	3	48.6 - 56.7
163	5	56.7 - 64.8
163	0	64.8 - 72.9
164	1	72.9 - 81
165	1	> 81

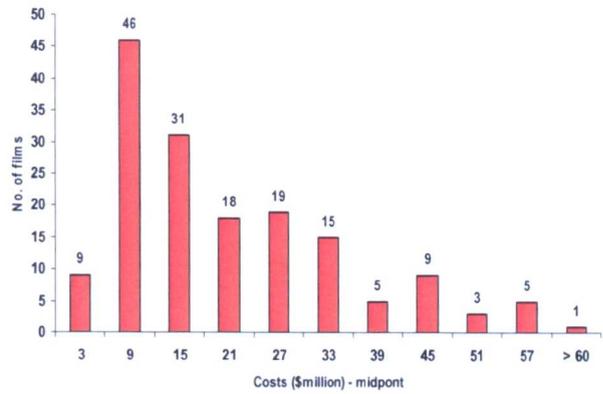


*Paramount's* total population over the twelve years is made up of 161 films corresponding to a mean annual population of 13.5 films. The mean production budget for this company is about \$22 million, even if the cost threshold of \$5 million is taken into account, since only seven *Paramount's* productions are in this category. \$3,486 million were allotted in total to production budgets, while the median cost is \$16.5 million. With the exclusion of the celebrated *Titanic*, which cost \$139 million, no other *Paramount* production cost more than \$61.7 million.

Table 5.14 and Figure 5.10 summarise *Paramount's* frequency distribution per decile of cost.

Table 5.14 and Figure 5.10 – Film distributions per decile of cost: *Paramount*

Cumulative Frequency Distribution	Frequency Distribution	Costs (\$million)
9	9	≈ 0 - 6
55	46	6 - 12
86	31	12 - 18
104	18	18 - 24
123	19	24 - 30
138	15	30 - 36
143	5	36 - 42
152	9	42 - 48
155	3	48 - 54
160	5	54 - 60
161	1	> 60

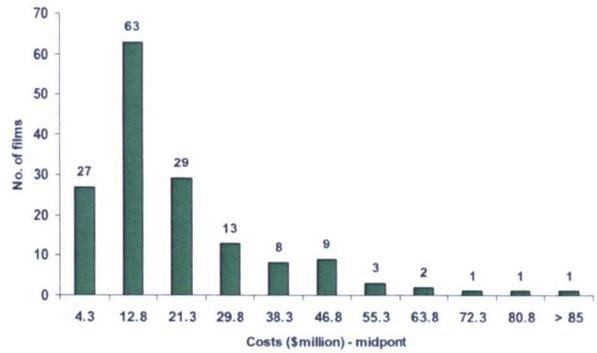


*Twentieth Century Fox* released 157 motion pictures from 1988 to 1999, corresponding to an annual mean of 13.1, for which it allocated \$3.217 million in total to production budgets. The mean cost is \$21.3 million, the median cost is \$15.2 million. Only seven *Twentieth Century Fox's* films – equal to 4.5 per cent of the company's population – cost less than \$5 million; excluding these few films, the company's mean production cost is a little higher, \$21.5 million. 97 per cent of the company's films cost less than \$60 million, while only five exceeded this amount, among which *Speed 2: Cruise Control* was the most expensive, with \$102 million invested in its production budget.

Table 5.15 and Figure 5.11 summarise *Twentieth Century Fox's* frequency distribution per decile of cost.

Table 5.15 and Figure 5.11 – Film distributions per decile of cost: *Twentieth Century Fox*

Cumulative Frequency Distribution	Frequency Distribution	Costs (\$million)
27	27	≈ 0 - 8.5
90	63	8.5 - 17
119	29	17 - 25.5
132	13	25.5 - 34
140	8	34 - 42.5
149	9	42.5 - 51
152	3	51 - 59.5
154	2	59.5 - 68
155	1	68 - 76.5
156	1	76.5 - 85
157	1	> 85



### Frequency distribution of cost – Italian companies analysis

The cost analysis is particularly significant for understanding the Italian industry, since the Italian market has proved to be distinguished almost exclusively by low budget films, with very few expensive productions. Based on these remarks, the cost distributions per decile for the three main companies – the only ones with at least three films produced per year over the period analysed – are investigated and depicted in Tables 5.16 and Figures 5.12 (*Cecchi Gori*), 5.13 and 5.10 (*RAI*), and 5.18 and 5.14 (*Medusa*). The common pattern for each company is easily identifiable: the bulk of the films are placed in the lower decile groupings, corresponding (in contrast to the first decile groupings of the US Majors) to limited production budgets (€5 million for *Cecchi Gori* to €1.9 million for *RAI*). Very few films are located in the higher decile groupings. Taking all three companies together, only three out of the 175 films released cost more than €10 million, which proves the impossibility of setting up portfolios made up only of expensive films. An indirect evaluation of the economic role of the most costly films in compensating for the possible losses of the cheapest production is presented in the

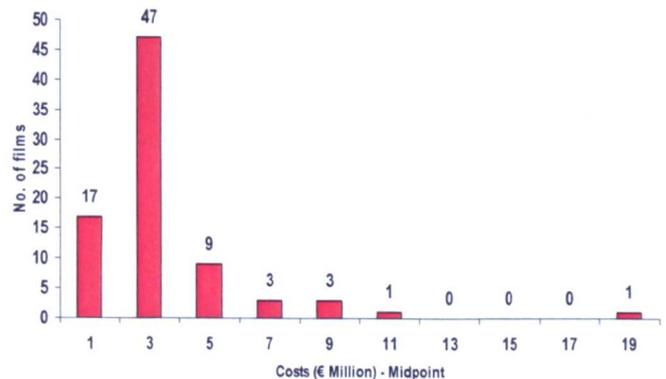
Result chapter (see par. 6.3.2), based on the economic role that can be attributed to high-budget productions by previous research (Sedgwick, 2002, page 686).

*Cecchi Gori* was the most productive company during the nine years examined, with a total cost of €270 million for the 81 productions released, giving a mean cost of €3.3 million. Compared to the other main competitors in the Italian market, it was the highest budget company, although only five of its films cost more than €8 million. It is evident that the mean production budget of this Italian company is in no way comparable to those of the US Majors examined, which spent on average 6 to 7 times more than *Cecchi Gori* to produce a film. The median cost for this firm is €2.5 million, lower than the mean cost, demonstrating that for a small number of films much greater financial resources than average were allocated.

Table 5.16 and Figure 5.12 summarise *Cecchi Gori's* frequency distribution per decile of cost.

Table 5.16 and Figure 5.12 – Film distributions per decile of cost: *Cecchi Gori*

Cumulative Frequency Distribution	Frequency distribution	Costs (€ million)
17	17	≈0-2
64	47	2-4
73	9	4-6
76	3	6-8
79	3	8-10
80	1	10-12
80	0	12-14
80	0	14-16
80	0	16-18
81	1	> 18 (20.3)

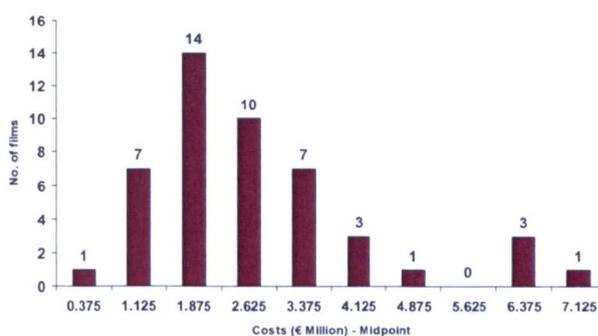


*RAI (RAI Radiotelevisione Cinema)* is the state-owned company, which hence also acts as a public service operator and whose role in the competitive perspective needs to be carefully analysed when the results are presented (see par. 6.3.2). It assigned a lower level of financial resources than its direct competitors to its productions, resulting in mean production budget of €2.7million from its 47 productions, corresponding to a total budget over the nine years of about €127 million. No *RAI* film cost as much as €7.5 million. The mean production cost of this company is eight to nine times lower than the mean of the US firms examined. The median cost is €1.9 million. The higher mean cost compared to median cost is essentially attributable to three (relatively) expensive productions that cost more than €5 million.

Table 5.17 and Figure 5.13 summarise *RAI*'s frequency distribution per decile of cost.

Table 5.17 and Figure 5.13 - Film distributions per decile of cost: *RAI*

Cumulative Frequency Distribution	Frequency distribution	Costs (€ million)
17	1	≈0-0.75
24	7	0.75-1.5
38	14	1.5-2.25
48	10	2.25-3
55	7	3-3.75
58	3	3.75-4.5
59	1	4.5-5.25
59	0	5.25-6
62	3	6-6.75
63	1	6.75-7.5



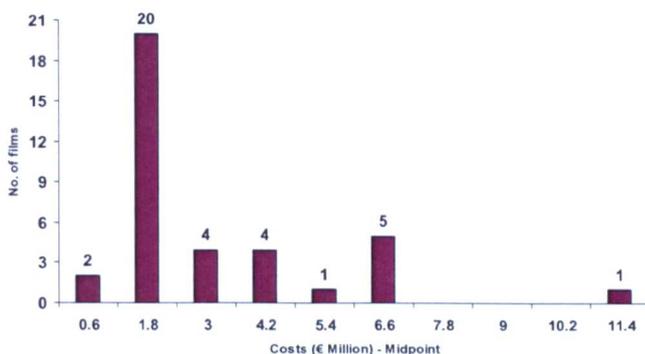
*Medusa* released 37 films during the nine-year period examined, with a mean cost of €3million from a total budget of €104 million. More than half of its productions fall within the second cost decile group, with a midpoint cost of €1.8 million. Although one production cost €11.8 million – an extremely remarkable sum in the Italian market –

none of the other 36 productions cost more than €7 million. The median production budget for this company is close to €2million (€1,974,000), 1 million less than *Medusa's* mean production cost. Even though most of *Medusa's* films were not excessively expensive, the previously cited example that cost €11.8 million, and four productions that cost between €6 and €7 million, account for the large gap between median and mean production budget observed for this company.

Table 5.18 and Figure 5.14 summarise *Medusa's* frequency distribution per decile of cost.

Table 5.18 and Figure 5.14 – Film distributions per decile of cost: *Medusa*

Cumulative Frequency Distribution	Frequency distribution	Costs (€ million)
17	2	≈0-1.2
37	20	1.2-2.4
41	4	2.4-3.6
45	4	3.6-4.8
46	1	4.8-6
51	5	6-7.2
51	0	7.2-8.4
51	0	8.4-9.6
51	0	9.6-10.8
52	1	10.8-12



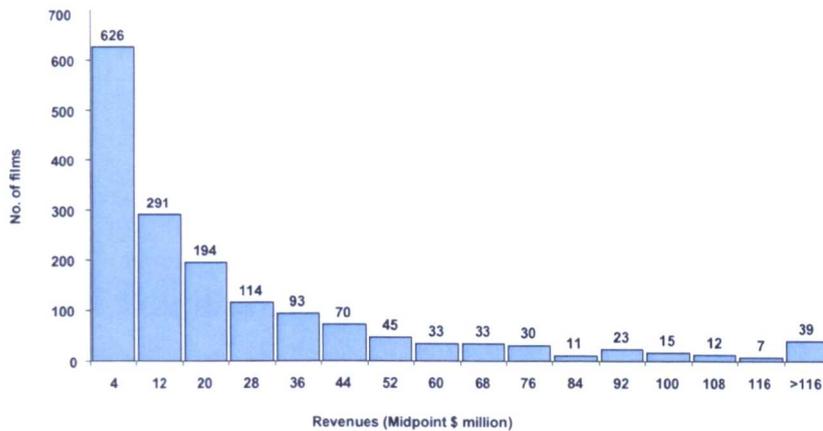
### 5.3.3 Frequency distribution of revenues

In this section the frequency distribution of the box office revenues in the US and Italian movie theatres are analysed.

### Frequency distribution of revenues – US dataset

The graph of revenue frequency distribution of the 1,636 films constituting the US dataset comprises 16 unit intervals, each one (except the last) with a range of \$8 million, whose midpoint is indicated on the x-axis (e.g., the first column represents the 626 films with revenues between zero and \$8 million, with a midpoint of \$4 million). The final unit interval groups together the films with extreme values – revenues higher than \$116 million. For the sake of presentation 39 films are enclosed in this unit interval, which has an extreme range of \$297 million (\$116-\$413 million). Figure 5.15 shows the frequency distribution of revenues for the US dataset.

Figure 5.15 – Frequency distribution of revenues of the US dataset

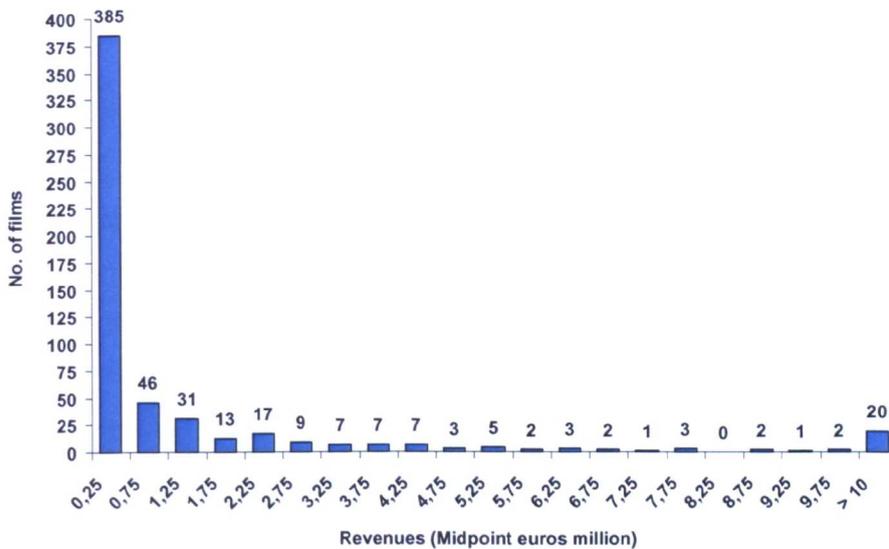


### Frequency distribution of revenues – Italian dataset

The whole population of the 566 Italian films is distributed over the nine-year period considered, with the frequency distribution of revenues shown in Figure 5.16. Twenty unit intervals – each one with a range of €500,000 – are created for the films with revenues from €0 to €10 million. The midpoint of each unit interval is indicated on the

x-axis of the figure. For the sake of presentation, a further, 21<sup>st</sup>, unit interval comprises only 20 films out of 566, corresponding to the rare titles that generated more than €10 million at the box office. The first film of this last interval generated €10.7 million, but the greatest revenue, €42.5 million, was that of Roberto Benigni’s *La Vita è Bella (Life is Beautiful)*. In the “Result Chapter”, the mean revenues observed, with other central indicators, will be compared on the light of their relevance and significance for highly skewed distributions.

Figure 5.16 – Frequency distribution of revenues of the Italian dataset



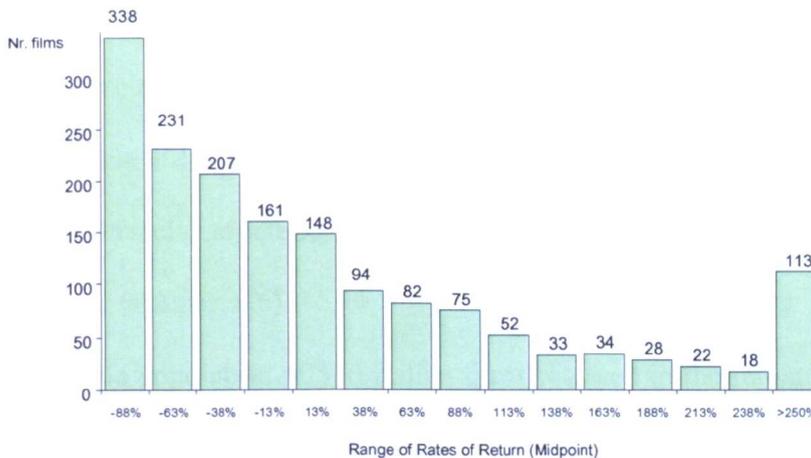
### 5.3.4 Frequency distribution of rates of return

This part describes the frequency distribution of the rates of return of the US and Italian datasets.

### Frequency distribution of rates of return – US dataset

For the US population, 14 groups of rates of return are recorded, each one corresponding to a unit interval with a width of 25 per cent. The value shown on the x-axis is the midpoint of each unit. A final 15<sup>th</sup> unit interval is considered, in which films with extreme values are grouped together, corresponding to those productions generating rates of return greater than 150 per cent. For the sake of presentation 113 films are enclosed in this unit interval, which presents an extreme range of 1,165 per cent (250 to 1,415 per cent). The frequency distribution of rates of return of the US dataset is represented in Figure 5.17.

Figure 5.17 – Frequency distribution of rates of return of the US dataset

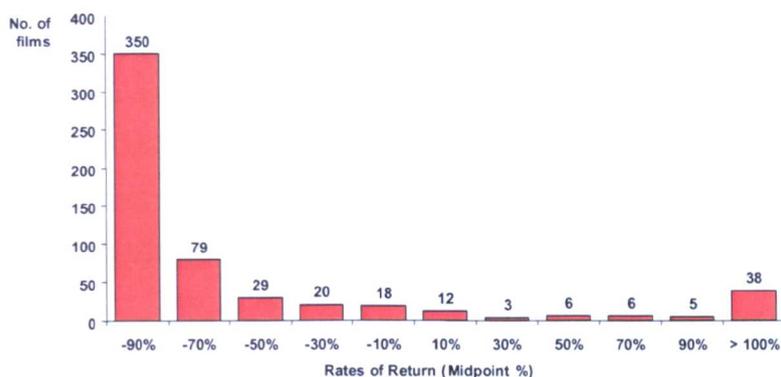


### Frequency distribution of rates of return – Italian dataset

In the Italian context, ten groups of values are considered, each one corresponding to a unit interval with a width of 20 per cent. For the sake of presentation, a final unit interval, in addition to the previous ten, encompasses the 38 films (6.7 percent of the whole population of 566 observations) with extraordinarily high rates of return – that is,

more than 100 per cent. The frequency distribution of rates of return of the Italian dataset is represented in Figure 5.18.

Figure 5.18 – Frequency distribution of rates of return of the Italian dataset

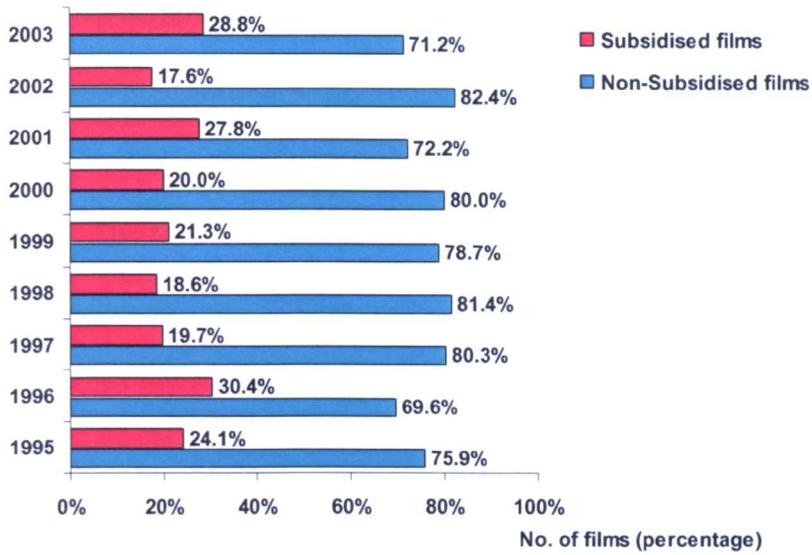


### 5.3.5 Descriptive analysis of subsidies

In this final section a descriptive analysis of subsidy data used in the Italian context is presented. The financial efficiency of these subsidies is analysed and discussed in the following chapter (see par. 6.6).

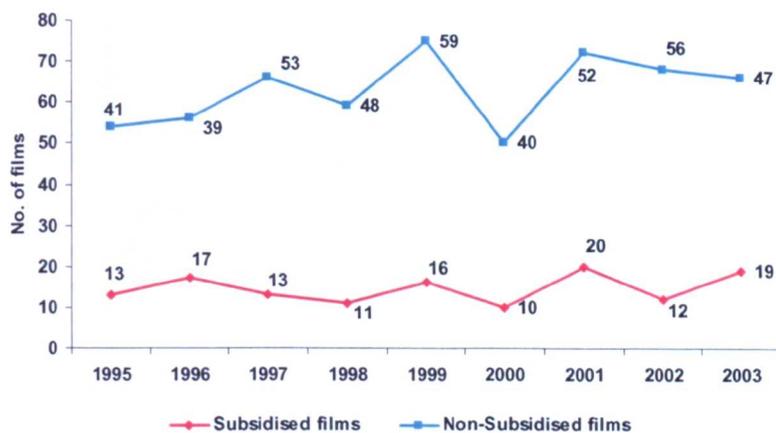
In the final sample population of 566 Italian films released in the Italian movie theatres from 1995 to 2003, 131 films, 23.1 per cent of the population, received public aid. Annually, over the nine years, this percentage varied between 17.6 (in 2002, 12 out of 68 films) and 30.4 (in 1996, 17 out of 56 films). Bar charts in Figure 5.19 illustrate the percentages of subsidised vs. non-subsidised films in the Italian context over the period investigated.

Figure 5.19 – % of subsidised vs. non-subsidised films in the Italian context (1995-2003)



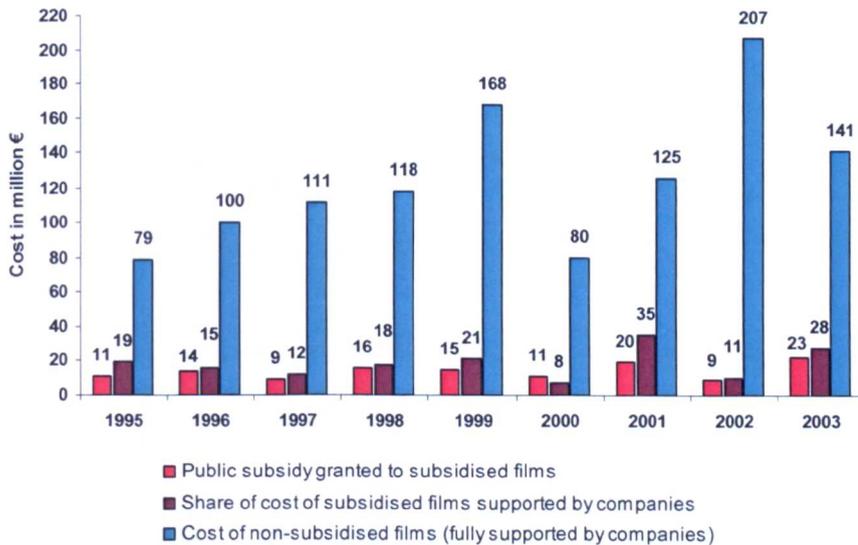
Analysis of the number of subsidised films in absolute value rather than in percentage shows that in each year of the time span examined, 10 to 20 films were supported by public aid in Italy, with the floor touched in 2000. Figure 5.20 depicts the data concerning the number of subsidised vs. non-subsidised films in the Italian context over the period examined.

Figure 5.20 – Number of subsidised vs. non-subsidised films in the Italian context (1995-2003)



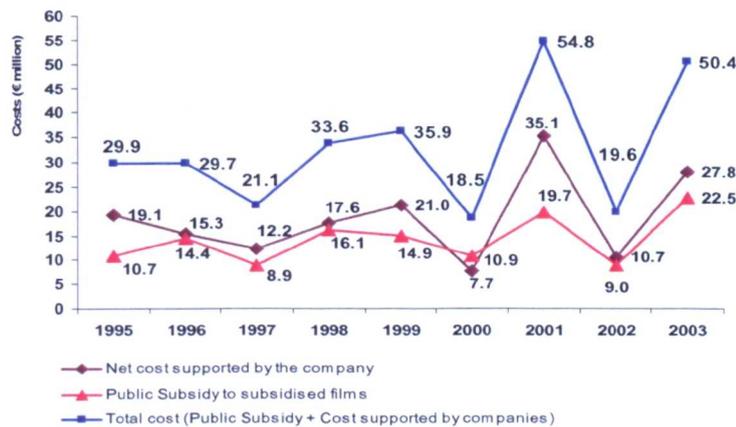
Taking as a reference variable the monetary value of financial aid rather than the number of productions supported, it emerges that the Italian film companies obtained a total of €127.0 million in subsidies over the nine years, while providing from their own resources €166.5 million of the total production cost of €293.5 million for the 131 subsidised films. The total cost of the films that did not receive any kind of public subsidy was €1,129.8 million. The histogram in Figure 5.21 illustrates for each of the nine years examined, the annual amount of public subsidy assigned to subsidised films (red bars); the annual amount of financial resources that companies assigned to subsidised films (purple bars); the annual amount of financial resources that companies assigned to non-subsidised films – which constitute in this case the only source of financing for these kind of productions (sky-blue bars).

Figure 5.21 – Funds to subsidised films (subsidy + company's funds) and non-subsidised films



Analysing in detail the monetary data about subsidised productions, it can be seen that public subsidies have always contributed to a large extent to the financial sustainability of film production. In 2000 the amount of subsidy to productions was actually greater than the resources contributed by the companies: €10.9 million out of €18.5 million of annual production costs were assured by public aid, with only €7.6 million coming from the companies. Note again that in terms of the number of films supported, year 2000 was the floor year, with only 10 productions benefiting from public aid (see Figure 5.20). It must be also observed that public contributions are commonly more substantial during years with higher total production costs (2001 and 2003). Figure 5.22 depicts the total annual production costs of subsidised films (blue line), and its breakdown into the share covered by the companies (purple line), and the share covered by public subsidy (red line). Table 5.19 expresses the same information in percentage terms.

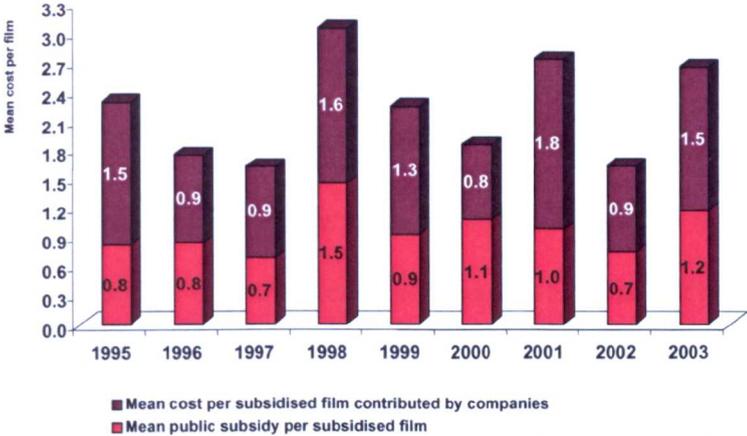
Figure 5.22 with Table 5.19 – Funds to subsidised films (subsidy and company's funds) and non-subsidised films



	1995	1996	1997	1998	1999	2000	2001	2002	2003
Public Subsidy to subsidised films	35.9%	48.4%	42.4%	47.8%	41.5%	58.6%	35.9%	45.8%	45.8%
Net cost supported by companies	64.1%	51.6%	57.6%	52.2%	58.5%	41.4%	64.1%	54.2%	54.2%
Total cost of subsidised films	100%	100%	100%	100%	100%	100%	100%	100%	100%

By comparing the annual amount of public subsidies contributed to films and the annual number of films they backed, it is possible to calculate the annual mean subsidy per subsidised film. As the histogram of Figure 5.23 shows, the mean subsidy varies between €0.7 million (in 1997 and 2002) and €1.5 million (in 1998). The mean direct contribution of film companies to production budget is usually higher (between €0.9 million and €1.8 million per film annually) than public aid, although the share of mean total cost is nearly equally divided by companies and State in some years (1996, 1997, and 2002), with a larger slice of cost covered by public aid in 2000 (€1.1 million vs. €0.8 million per film).

Figure 5.23 – Mean public subsidy vs. mean company cost per subsidised film



## **5.4 Limitations, commentary on this data in relation to other data sources used in academic and grey literature**

Data used for this thesis are comparable to that used by other researchers for previous academic works with regard to the US analysis, as are drawn from public access sources. The US dataset of this work comes from AC Nielsen, a leading global provider of research information, while other academic contributions also use film magazines such as Empire, Screen International, Variety or related sources, but the extension and reliability of final data are equivalent. The situation with the Italian dataset is different, since the collection of data has been assembled from raw source material found in the Cinecittà archive. The data was collected and processed over a ten-month period. Bagella and Becchetti (1999) used a similar procedure. A novel aspect of this thesis is that it introduces this new dataset into the literature.

A further potential weakness is that the value of costs presented in the Italian dataset is that declared by Ministry of Cultural Heritage through BNL Bank. The actual amount of cost could be slightly different from that indicated, since some overrun costs could have increased the final production budget. However, this potential difference cannot bias in any way the substance of results obtained (see chapter 6).

Finally, after the period of analysis, a new regulatory framework for subsidies came into effect in Italy between 2005 and 2007, making possible a future evaluative empirical investigation on financial efficiency of the new reforms.

# 6

## Results

This chapter presents the results of the empirical analyses conducted in this work using the methodological instruments explained in detail in chapter 4, and the datasets and sub-samples constructed and described in chapter 5. The research questions proposed in chapter 1 will be answered here in turn.

Paragraphs 6.1 to 6.4 show the results for the sphere of interest of risk and return trade-off:

- Par. 6.1 investigates revenue, both on annual and total populations, including at the end the relationship between revenue and cost.
- Par. 6.2 examines rates of return, both on annual and total populations, as well as on the main companies populations, including at the end the relationship between rates of return and cost.
- Par. 6.3 delves into the results of the risk return trade off analysis, through an investigation of frequency distribution of cost, and the relationship between average productions costs and the results obtained.
- Par. 6.4 analyses the risk and return patterns of the two contexts investigated, to realize if a common or different behaviour can be identified.

In each of the previous paragraphs, the US results are discussed first, and the Italian results then.

Paragraphs 6.5 to 6.7 present the results for the sphere of interest of state support by investigating the Italian dataset and sub-samples:

- Par. 6.5 hints at the reasons why state support is justified in Europe and not in the US, by referring to the chapter where this topic is fully argued (par. 5.1).

- Par. 6.6 analyses the financial effectiveness of Italian state support to film industry, by identifying to what extent it contributes to improving cultural identity.
- Par. 6.7 discusses the results about state support found in the previous par. 6.6, by introducing a new framework to deal with the issue of subsidies that will be deepened in the following chapter 7.7.

### *Risk and return trade-off*

#### **6.1 Revenue analysis**

This first examination follows the study by De Vany and different other scholars<sup>62</sup>, that demonstrated that the frequency distribution of revenues in the film industry is highly unequal. This was summarised by the sentence that “the film industry is characterised by extreme events”<sup>63</sup>, meaning that a small number of films from the population can expect to get extraordinary revenues when compared to the more modest returns achieved by the vast majority of movies. The subsequent analysis of rates of return will aim to enhance these results, because it will identify the nature of the relationship between revenues and productions costs.

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<sup>62</sup> See chapter 3, sections: “Empirical Literature - A Systematic Review of Empirical Studies”, and “Frequency distributions of revenues”.

<sup>63</sup> De Vany, Walls, 1999, *Uncertainty in the Movie Industry: Does Star Power Reduce the Terror of the Box Office?* p. 27.

The results obtained for the US context are examined first, and then the results for the Italian context will be presented.

## US

### Frequency analysis of revenues of US annual populations

The results of the statistical characteristics of revenues, analysed annually, are shown in Table 6.1. The four statistical moments have been considered and, in addition, the median and the coefficient of variation have been calculated (second and fourth columns).

Table 6.1– Key descriptive statistics of annual revenue distributions – US dataset

	<i>Mean</i> <i>(\$Millions)</i>	<i>Median</i> <i>(\$Millions)</i>	<i>St Dev</i>	<i>Coefficient</i> <i>of Variation</i>	<i>Skewness</i>	<i>Kurtosis</i>	
1988	21.5	11.7	28.8	1.33	2.44	6.91	
1989	22.6	9.1	34.3	1.52	2.85	10.45	
1990	22.7	12.1	35.2	1.55	3.25	13.07	
1991	20.4	11.4	27.7	1.35	2.55	7.43	
1992	23.9	11.1	31.7	1.33	2.16	4.94	
1993	24.3	13.2	37.0	1.52	3.92	20.62	
1994	28.3	15.0	39.0	1.38	3.36	14.73	
1995	26.1	17.1	27.9	1.07	1.72	3.63	
1996	25.1	13.4	33.2	1.32	2.92	11.14	
1997	30.6	18.4	46.6	1.52	5.07	36.75	
1998	27.3	15.4	31.4	1.15	1.67	2.44	
1999	29.2	15.0	39.5	1.35	3.07	13.69	
Range	MAX	30.6	18.4	46.6	1.55	5.07	36.75
	MIN	20.4	9.1	27.7	1.07	1.67	2.44

The first statistical moment, the *mean* revenues, can show whether an annual stable trend can be identified in terms of average revenues generated. This quantity is given by the formula:

$$\text{Mean annual revenues}_t = \sum_{i=1}^n R_i / n$$

Where:

$R_i$  = revenues generated by the  $i^{\text{th}}$  film

$t$  = year that the  $i^{\text{th}}$  film was released

$i = i^{\text{th}}$  film considered within the annual population made up of  $n$  films

$n$  = number of data points – that is, the total number of films composing the annual population.

The results exhibited in the first column of Table 6.1 show a significant degree of inequality over the years. The range of values is wide, with the \$20.4 million minimum mean annual revenue, obtained in 1991, and the \$30.6 million maximum, in 1997, giving a range of 10.2 million dollars, i.e., half the 1991 minimum. Even if not related to costs, the analysis of mean revenues provides important information. Note that the top mean result – obtained in 1997 – is ascribable in large part to the presence of just one film, *Titanic* (the movie that generated the highest box office takings ever, at that time). This film alone generated revenues of \$413 million, equal to the average revenue of 13.5 movies in 1997. Note also that it is possible to observe an upward trend in the average mean revenues over the period. The *median* values (second column, Table 6.1) offer significant insights about the asymmetry of the revenue distributions – which will be analysed in detail later through skewness – since the annual median values are consistently lower than the corresponding means, and in some cases as little as half. Also, the range of median values recorded over the years is wide, with an extremely low value of \$9.1 million in 1991 against a high of \$18.4 million in 1997.

The analysis of the second statistical moment, the *standard deviation* (third column, Table 6.1) proves to be particularly meaningful. The outcomes indicate that the revenue frequency distribution is highly unequal, and that the annual *mean* revenue previously identified for each year cannot be considered as representative. Taking the population of films released in 1997 as a model, we find, at one extreme, the movie *Truth or Consequences*, which generated a mere \$75,770 (i.e., only 0.25 per cent of the mean value of \$30.6 million), while, at the other extreme, *Titanic* generated by itself a revenue 5,460 times higher than that of *Truth or Consequences*. By comparing the years, note that a substantial range of \$19 millions exists between the maximum annual standard deviation of \$46.6 millions (in 1997), and the minimum one of \$27.6 millions (in 1991). Furthermore, the highest standard deviation is observed in the year with largest mean revenue (1997), and the lowest standard deviation in the year with smallest mean revenue (1991).

In order to further advance the understanding of the first and second statistical moments, the annual *coefficient of variation* has been calculated (fourth column, Table 6.1), as the ratio of the annual standard deviation and the annual mean revenue. Notice the considerable values of the coefficient of variation, always between 1 and 2, with a maximum value of 1.55 (in 1990) and a minimum value of 1.07 (in 1995). This reflects the enormous spread of revenues, as in all cases this measure of variance is greater than that of the mean itself.

The third and the fourth statistical moments of the annual revenue population measure the asymmetry and peakedness of the statistical distribution. In particular, the *skewness* results (fifth column, Table 6.1) are worthy of attention, since all twelve distributions of

the data show positive skewness. The distribution is said to be highly right-skewed, meaning that the bulk of the distribution is concentrated to the left of the figure, indicating that a small number of movies generate extremely high revenues, while most films produce revenues around or lower than the mean annual revenue for the period.

Further proof of the unevenness of the frequency distributions of revenues is given by analyzing the fourth statistical moment, the *kurtosis* (sixth column, Table 6.1). The twelve distributions of the data are all leptokurtic – that is, they have positive kurtosis.<sup>64</sup>

The range of values is very wide, confirming that the revenues generated by the top ranking movies vary considerably annually. The maximum value of kurtosis is 36.75 – recorded in 1997 – and the minimum – equal to 2.44 – in 1998. Extremely high kurtosis indicates that more of the variance is due to infrequent ‘extreme’ events than to frequent ‘ordinary’ events: for instance, the highest kurtosis – in 1997 – can thus be mainly attributed to the presence of the already mentioned *Titanic*, whose unusually extreme revenue lies behind the value of kurtosis noted.

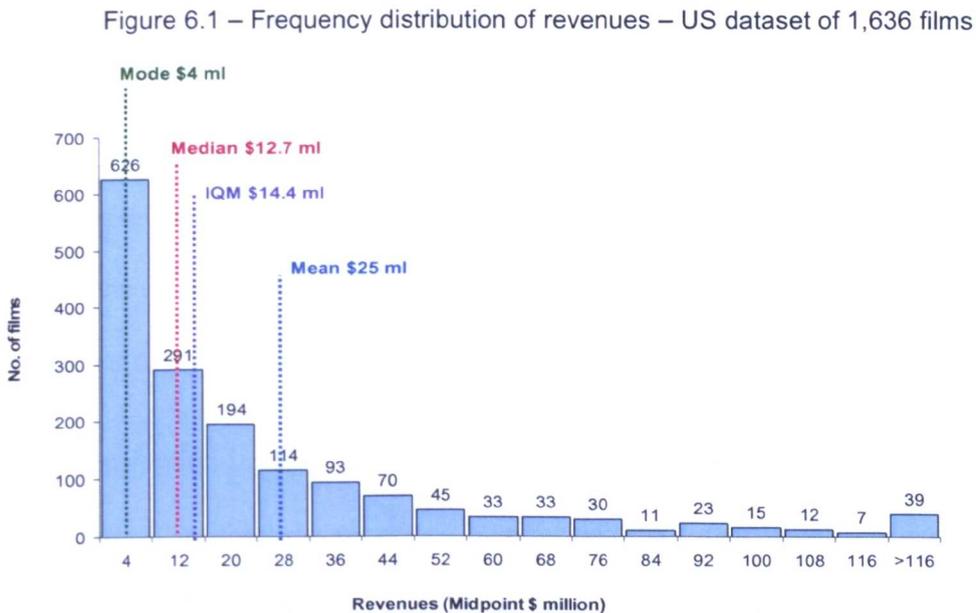
Moreover, a positive relationship can be identified between revenues and risk. As the mean revenues rise (take 1997 as a model), the standard deviation increases and the asymmetry and peakedness of distributions (skewness and kurtosis) increase as well. Table 6.1 highlights this kind of trend. What it is not deducible from it is a precise relationship between costs assigned and profitability. The analysis of the frequency distribution of rates of return will present more detail on this topic.

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<sup>64</sup> The kurtosis measurements have been calculated according to the ‘excess kurtosis’ definition.

## Frequency analysis of revenues of the whole US population

The revenue frequency distribution of the sample population of 1,636 films is represented in Figure 6.1<sup>65</sup>. This is a survey of the movies considered together as one group, and not as twelve annual sub-groupings. To gain an insight into what gives rise to the highly skewed distributions with high kurtosis that emerged from the annual analysis, whole-dataset indicators are useful because they make visible the high inequality and randomness of revenues in the industry. The wide spectrum of box office takings recorded is depicted in the graph of revenue frequency distribution.



Note that the *mean* revenue of the entire US population of 1,636 films is equal to \$25,003,978. It is now essential to examine the spread of this value by means of other important central indicators whose relevance is crucial in highly skewed distributions.

<sup>65</sup> The figure is introduced, but not commented upon, in the “Data chapter”, par. 5.3.3, Figure 5.15.

Further insights into skewed nature of the distribution are possible through analysis based on the *interquartile mean* (IQM). Many statisticians find it helpful to use the interquartile mean to analyse the central moment of non-normal distributions. The interquartile mean is a measure of central dispersion representing a truncated mean, which is particularly applicable in distributions in which the presence of outliers can bias the results. In calculating the IQM, only the interquartile range is used: therefore, the lowest 25 per cent, and the highest 25 per cent of observations (ordered by increasing revenues) are discarded.

The IQM of the distribution can be expressed according to the following formula:

$$IQM = R_{IQM} = \frac{2}{n} \sum_{i=(n/4)+1}^{3n/4} R_i$$

Where

$R_i$  = revenues generated by the  $i^{th}$  film

$i = i^{th}$  movie considered within the population made up of  $n$  films

$n$  = number of data points – that is, the total number of films composing the population.

As the distribution is made up of 1,636 films, each quartile is composed of (1,636/4 = 409) films. The formula produces a substantially lower mean revenue, equal to \$14,376,190 – that is, more than \$10 million lower than the whole-population mean previously calculated. By setting aside the extreme results, IQM offers essential food for thought: if the worst and the best generators of incomes are eliminated, the average box office performance decreases considerably, meaning that the statistical relevance of revenues of the top 25 per cent of movies greatly exceeds that of the lowest 25 per cent. The IQM suggests that the whole-population mean revenue of \$25 millions incorporates a high degree of risk, evidenced by the variance of extreme top-end revenues.

The previous remarks are confirmed by the *median*, which is the middle value of a set of numerical data arranged in ascending, or descending, order.

For a for population of  $n$  revenues,  $R_1 \dots R_n$ ,

$R_{\text{median}}$  is  $R_{\frac{1}{2}(n+1)}$  if  $n$  is odd, and  $\frac{1}{2}(R_{n/2} + R_{(n/2)+1})$  if  $n$  is even.

In this case, since  $n = 1636$ ,

$$R_{\text{median}} = \frac{1}{2}(R_{818} + R_{819})$$

Because the relation between the revenues and the films is one-to-one, there is no film in an even-numbered population with the actual revenue  $R_{\text{median}}$ . The 819<sup>th</sup> revenue corresponds to the movie *Lightning Jack*. Given the skewed nature of the statistical distribution, a median value lower than the population mean should be expected, as is the case for revenues. The median is equal to \$12,695,300. Accordingly, the movies to the right of the median value (and those at the extreme right in particular) “weigh” much more heavily than the movies to the left of it; that is, the potential high revenues of the hits should more than balance the potential losses of the humbler films of the distribution.

The analysis of the *mode* cannot be made using the exact amounts of the revenues, because differences of a few dollars of revenue can occur between two films that performed nearly identically at the box office. Therefore, the unit intervals depicted in Figure 6.1 have been considered. The result is manifest: the most frequent mid-point value observed in the distribution corresponds to films generating on average revenues of \$4 million: 626 films, equal to 38.3 per cent. This offers further evidence that most of the films generate small revenues, while very few break even at the box office. As a result, the mean revenue of the population is not really representative, since it is heavily

supported by the extremely high box office takings collected by a small number of hit films. This dynamic will be even more significant through the subsequent analysis of rates of return, carried out to answer the second research question posed.

### **The relationship between costs and revenues - US Dataset**

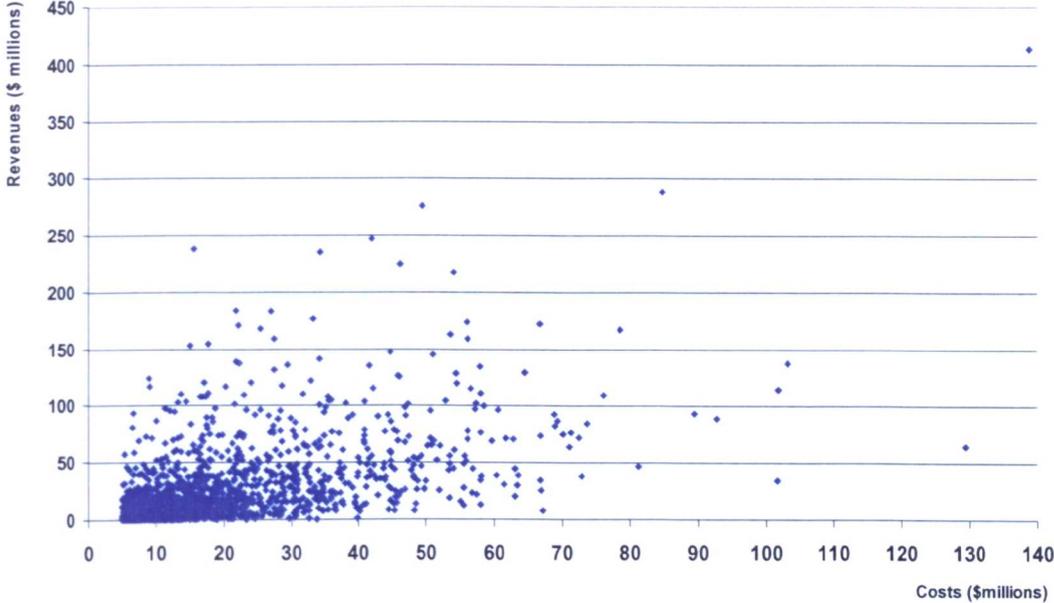
Even though the examination of revenues does not allow us to express a direct relationship between costs and amount of money generated or absorbed (considered in terms of relative profitability), a first step in this direction can be taken by examining the frequency distributions in terms of scatter diagrams of the sample population of 1,636 films, with the costs measured on the x-axis, and the related revenues on the y-axis. The analysis has been done on a year-by-year basis, resulting in twelve annual scatter diagrams shown in the figures attached (see Appendix 1).

Actually, it is possible to identify a common reference pattern that unites the twelve diagrams. As a general rule, it can be noted that as production costs increase, revenues increase. The slope of the line representing the relationship between the two variables is positive. Large clusters of observations can be seen around the range of costs between \$5million – threshold – and \$25-30 million, usually corresponding to lower range revenues. As the production costs rise, the scatter density decreases significantly. Some low-budget movies with appreciable revenues, and some high-budget movies with limited revenues are evident. They represent exceptions, with revealing results, often determining the positive or negative career trajectory of some directors or actors (for instance, the \$130 million movie *WaterWorld*, generating \$65 million of revenues, constitutes a negative outlier in the 1995 annual frequency distribution, determining the

subsequent downfall of its director, Kevin Reynolds, and leading actor, Kevin Costner, as a major star in Hollywood).

It is possible to express the relationship between costs and revenues of the dataset of films for the twelve years analysed in the single scatter diagram of Figure 6.2

Figure 6.2– Costs to revenues of the US population (films released between 1988-1999)



## Italy

### Frequency analysis of revenues of Italian annual populations

The analysis of the American context has emphasised the unequal distribution of revenues in the industry. In addition, the research on the US context also showed that – as a general rule – as the production budgets increase the revenues increase. This section will test the validity of these conclusions in the Italian context.

The details of the statistical characteristics of revenues of the Italian dataset, analysed annually, are shown in Table 6.2. The four statistical moments have been considered and, in addition, the median has been calculated. The coefficient of variation has not been calculated, since the US analysis has shown that it does not contribute to providing additional information compared to those offered by standard deviation.

Table 6.2 – Key descriptive statistics of annual revenue distributions - Italian dataset

	Mean (Million euros)	Median (Million euros)	St. Dev. (Million euros)	Skewness	Kurtosis
1995	1.5	0.3	3.1	3.65	14.46
1996	1.9	0.4	5.5	5.27	30.74
1997	2.3	0.1	7.2	4.50	21.06
1998	1.8	0.3	4.9	4.42	23.62
1999	0.9	0.2	2.1	3.42	12.65
2000	1.3	0.2	4.4	6.24	41.61
2001	1.3	0.1	3.0	3.17	9.91
2002	1.5	0.1	5.0	4.44	19.08
2003	1.3	0.2	3.5	4.49	21.39
Min	0.9	0.1	2.1	3.17	9.91
Max	2.3	0.4	7.2	6.24	41.61

The outcomes<sup>66</sup> obtained are particular revealing.

<sup>66</sup> For the definitions and meaning of the each indicator analysed, refer to the account given for the US context.

The annual *mean* revenues for each of the nine years considered – shown in the first column of Table 6.2 – can be expressed as:

$$\text{Mean annual revenues}_t = \sum_{i=1}^n R_i / n$$

Where

$R_i$  = revenues generated by the  $i^{\text{th}}$  film

$t$  = year that the  $i^{\text{th}}$  film was released

$i = i^{\text{th}}$  movie considered within the annual population made up of  $n$  movies

$n$  = number of data points – total number of films composing the annual population.

The high inequality of results is clearly observable. A large gap exists between the highest mean annual revenue – €2,317,800 in 1997 – and the smallest – €963,300 in 1999. This results in an extremely large range of €1,354,500. This is significant when set against the relatively low values of the mean annual revenues, compared with the American values (Table 6.2).

For the *median* value, according to what was expressed theoretically and from the results on the US population, a low median value, indicating asymmetry, should be expected. In fact, the results are unquestionably striking. The annual median values are always four or five times lower than the annual mean revenues (Table 6.2, second column). In some cases, the ratio of the two values is even larger, as can be seen in 1997 and 2002. Even more interesting, a discrepancy between the annual values of these two indicators can be highlighted. Years that result in higher mean revenues do not necessarily result in higher median values. The 1997 statistics are peculiar in that respect. The mean value is the highest, but the median value is the floor compared to the

other years. These statistics present a scenario distinguished by extreme inequality of values.

This situation is corroborated by the analysis of the annual *standard deviations* (third column, Table 6.2). The analysis proves that the mean values are not representative at all of any film considered randomly in each annual distribution. The values of the standard deviations are double – in the most regular year – triple or nearly quadruple the corresponding annual mean revenues. Whatever the annual mean revenue is, it proves to be completely inadequate to represent the revenue of any film in that distribution. The standard deviation recorded in 2000 – equal to three and a half times the 2000 mean revenues – reflects a situation in which only nine out of fifty films produced that year generated revenues higher than the annual mean value of €1,292,000. This simple example shows that the (low) mean value of revenues is basically determined by the fact that very few films generate much more than the mean annual revenues, while the bulk of the films generate unsatisfactory amounts. Medusa's film *Chiedimi se Sono Felice* itself generated €30.5 million, an amount able to compensate for a hypothetical 24 films obtaining no revenues at the box office, and produce the above mentioned annual mean revenue of €1,292,000.

The results for the third and the fourth statistical moments are predictable from the outcomes obtained for the indicators analysed so far. The results concerning *skewness* (fourth column, Table 6.2) are significant, as skewness highlights the asymmetry of the annual distributions. As expected, all the nine annual populations show positive high skewness. The lowest skewness of 3.17 is recorded in 2001, whilst the maximum value of 6.24 is recorded in 2000. As already hinted at when discussing the annual standard

deviations, the highly right skewness recorded each year proves that most of the movies are placed on the left in the distribution, demonstrating that the annual mean revenue is mainly supported by a few very profitable movies; and – even more important – that most of the films produced each year generate negligible, not to say nearly nonexistent revenues. Taking 2000 as reference year, 23 out of 50 movies produced in that year were not even able to generate €100,000 each, and 17 among these registered even less than €50,000 in revenues.

As for *kurtosis*, the results are particularly clear (fifth column, Table 6.2): all the annual distributions have positive kurtosis, which attains – without exception – extremely high values. In addition, the range of values is also ample. This would imply not only that one or a few movies are mainly responsible for the annual mean revenues, but also that the box office takings arising from these high-generator films seesaw significantly over the years analysed.

A link between the US and the Italian indicators is the connection between the trend of kurtosis and skewness values. Higher values of kurtosis generally correspond to higher values of skewness, and lower with lower. In fact, as was the case for skewness, the year 2000 recorded the largest kurtosis (41.61), whilst the year 2001 recorded the lowest (9.91). As a general rule, skewness and kurtosis follow similar trends. Having said that, it is notable that even the lower values for the two indicators represent extreme asymmetry and high peakedness.

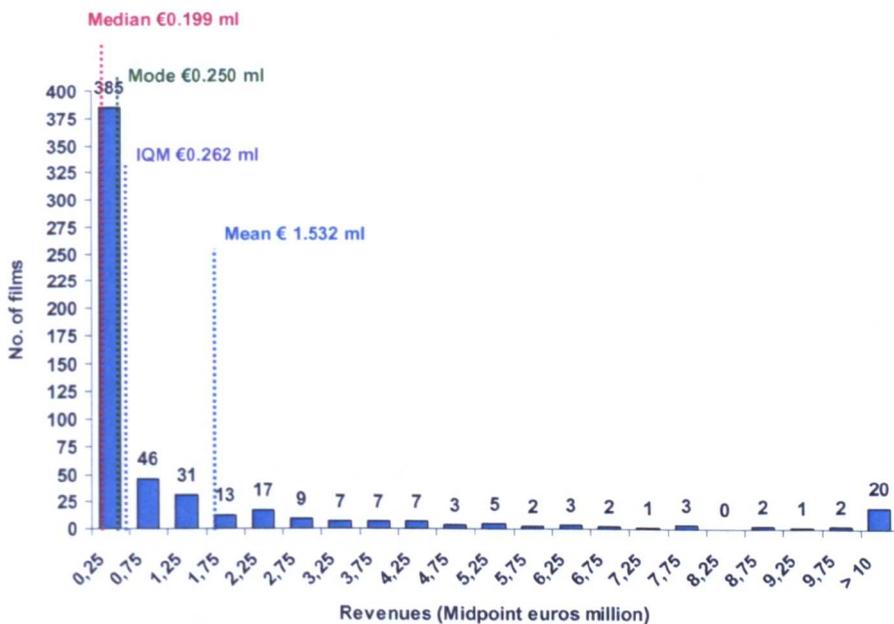
Broadly speaking, it can be said that the results obtained for the US context are confirmed here, but the values in the Italian context reinforce even more the perception of inequality and unpredictability that characterise the economics of the film industry.

Also, it must not be forgotten that these results refer only to Italian productions in their national market, amounting only to about one quarter of the national market share (see chapter 5, Table 5.10).

### Frequency analysis of revenues of the whole Italian population

This section analyses in detail the risk and return features for the whole population of 566 films over the nine years examined. The frequency distribution of revenues for the Italian context is shown again in Figure 6.3<sup>67</sup>.

Figure 6.3 – Frequency distribution of revenues - Italian dataset of 566 films



It is essential to compare the mean revenues observed with other central indicators whose relevance and significance for highly skewed distributions have been already emphasized in the chapters on the US context (Figure 6.1).

<sup>67</sup> The figure is introduced, but not commented upon, in the “Data chapter”, par. 5.3.3, Figure 5.16.

While the mean population revenues are €1.532 million, the other central indicators record different results, which are closer to each other.

The *interquartile mean* (IQM), can be expressed by the following formula:

$$IQM = R_{IQM} = \frac{2}{n} \sum_{i=(n/4)+1}^{3n/4} R_i$$

Where

$R_i$  = revenues generated by the  $i^{th}$  film

$i = i^{th}$  movie considered within the population made up of  $n$  movies

$n$  = number of data points – total number of films composing the population.

The interquartile mean is only €262,000, highlighting once more the higher weighting of the greatest generators of revenues in determining the mean revenue. This now typical result is confirmed by the similar value recorded for the median revenue, €199,000, corresponding to *Liberi*, produced by Fandango. The analysis of interquartile mean and median revenues strongly corroborates the thesis that the film industry is a market dominated by extremes and, owing to their considerably lower revenues compared to the mean, that the films positioned to the right in the distribution have a considerably higher weighting effect than the low-generators of revenues – placed to the left in the distribution – in determining the mean value (Lee, 1998).

Finally, as the *mode* is located in the first unit interval (midpoint €250,000), it is clear how large is the number of films that generated trivial or nearly inexistent revenues. 68% of the population – 365 in 566 films – produced revenues between €0 and €500,000. Hence, most Italian films contribute insignificantly to the total profitability of the industry, which is almost completely supported by the very few movies able to

generate sizeable takings. Thus, just 41 Italian films – 7.2 per cent of the population – generated more than €5 million, and only 20 among these 41 films – 3.5 per cent of the population – generated revenues in excess of €10 million.

As a further refinement, *range* and *interquartile range* (IQR) have been examined. The range of the distribution indicates the dispersion of the population. Among the generators of negligible revenues, the movie *Teatro Clandestino* was the worst, recording only €13 at the box office. On the other hand, the already mentioned *La Vita è Bella* was an extraordinary moneymaker, generating €42.5 million of revenues at the Italian movie theatres. So, the range of the whole population is €42.5 million - €13 = €42.5 million.

The interquartile range (IQR) is a more appropriate indicator for film distributions as it excludes the first and the fourth quartiles from the computation, thence focusing only on the central values. So, considering this restricted population, *L'estate di Bobby Charlton* is floor in terms of revenues, with €31,700, and *Fuori dal Mondo* is the third-quartile film, with €926,600, giving a range of €894,900. This truncated range is more informative than the whole-population value, since the exclusion of the outliers (in particular the greatest generator of revenues) helps to standardise the revenues obtained by the remaining films.

## The relationship between costs and revenues – Italian Dataset

The analysis of the relationship between costs and revenues proves to be particularly meaningful in the Italian context. Visual representation of this relationship is provided in the scatter diagram of Figure 6.4.

As demonstrated for the US context, a quasi-linear relationship can be discerned since, in general, as production costs increase, revenues increase as well, however with high levels of variance. It is valid at least for the majority of the Italian population – that is, the movies that cost less than €10 million, with the maximum concentration in the area up to €8 million (Figure 6.5). It is interesting to note that these low-cost films perform similarly, as a dense cluster can be observed in the area corresponding to revenues lower than €3 million. Some exceptions exist of course, films that do perform very satisfactorily at the box office, but these can be considered as outliers. The most noticeable feature is the proportion of films that earn no, or almost no, revenues.

Even more interesting is the trend concerning more expensive movies (budget higher than €10 million), owing to their limited number in the Italian context. For these very few films, 0.2 per cent of the Italian film population, the linear trend previously identified seems not to work. Their revenues are low, often lower than €3 million. The two outliers within the group of more expensive films, *Pinocchio* and *Asterix e Obelix contro Cesare*, both produced by Melampo, are not enough to establish the linear trend for this category of movies.

This is noteworthy, especially if compared to the US market. As higher production budgets do not tend to generate higher revenues, a massive investment in production is not demonstrated to be a successful strategy for Italian companies, which is contrary

to the experience of the US industry. This result makes formulating a way forward for the Italian industry even more an uncertain and awkward task.

Appendix 2 includes the nine scatter diagrams which analyse the year-by-year relationship between costs and revenues of the nine annual populations of the Italian dataset.

Figure 6.4 – Scatter diagram: costs to revenues of the Italian population

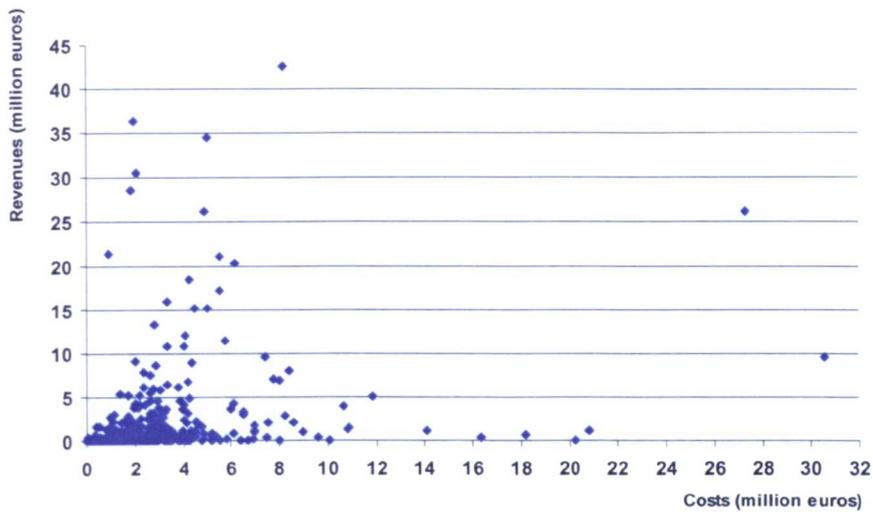
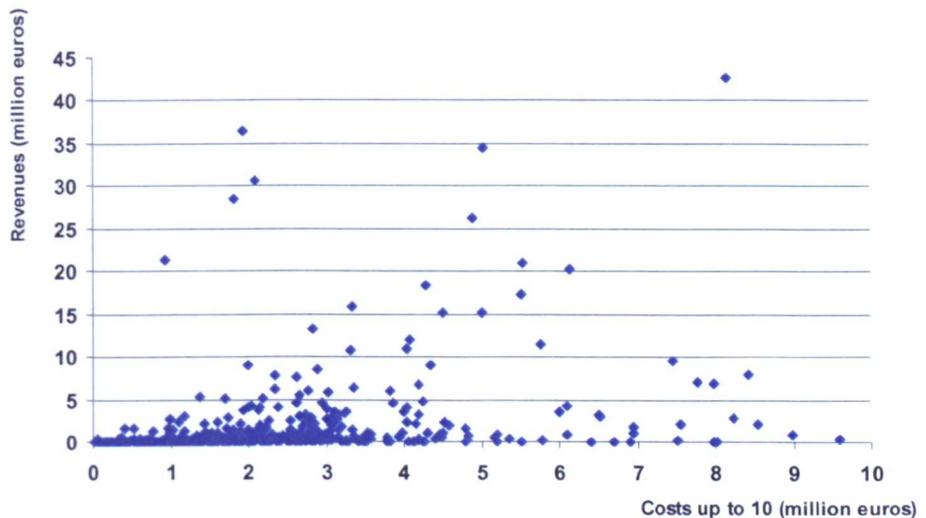


Figure 6.5 – Scatter diagram: costs (up to €10 million) to revenues of the Italian population



## **6.2. Rates of return analysis**

Whatever context was examined, the annual frequency distributions of revenues have proved to be highly unequal, bringing out the extreme variance and unevenness of the results. A positive relationship between costs and revenues has been demonstrated, as the box office takings generally increase as the production costs rise, but these results are still partial, because they do not express explicitly the profitability contribution of each film. A direct relationship would be specifiable by an equation or at least a stochastic function.

The analysis of rates of return is even more revealing, because the rate of return is by its nature a relative indicator – that is, it represents the ratio between the profit (loss) and the cost of a movie<sup>68</sup>. Thus, its formula itself provides a relationship between profitability and costs. As for the previous research question, the results of the US dataset are presented first, to introduce then those of the Italian one.

### **US**

#### **The annual distributions of rates of return of the US dataset**

The results of the key descriptive statistical characteristics of the rates of return of the US dataset of 1,636 films, grouped by year, are shown in Table 6.3.

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<sup>68</sup> A profit or gain is expressed as the positive difference between revenue and cost of a film, while a loss is the negative difference between revenue and cost of a film.

Table 6.3 – Key descriptive statistics of annual rates of return distributions - US dataset

	Mean	Median	St Dev	Skewness	Kurtosis	
1988	0.643	-0.115	1.305	2.47	6.73	
1989	0.567	-0.235	1.575	2.71	9.25	
1990	0.378	-0.182	1.647	3.97	19.58	
1991	0.309	-0.153	1.165	2.03	4.83	
1992	0.342	-0.174	1.414	2.29	6.65	
1993	0.338	-0.205	1.663	3.96	20.72	
1994	0.291	-0.179	1.833	3.45	15.79	
1995	0.216	-0.040	1.268	1.04	3.84	
1996	0.112	-0.290	1.370	2.84	11.56	
1997	0.154	-0.224	1.829	4.17	27.54	
1998	0.087	-0.176	1.221	1.86	5.60	
1999	0.237	-0.189	1.642	3.15	13.56	
Range	MIN	0.087	-0.290	1.165	1.04	3.84
	MAX	0.643	-0.040	1.833	4.17	27.54

The annual *mean* rate of return (first column, Table 6.3) is expressed by the following formula:

$$\text{Mean annual rate of return}_t = \frac{\sum_{i=1}^n R_i - \sum_{i=1}^n C_i}{\sum_{i=1}^n C_i}$$

Where:

$R_i$  = box office revenue of film  $i$

$C_i$  = cost of film  $i$

$t$  = year that the  $i^{\text{th}}$  film was released

$i = i^{\text{th}}$  film within the annual population made up of  $n$  films

$n$  = number of data points – that is, the number of films composing the annual population.

The highly unequal distribution over the years disclosed by the analysis of revenues appears again in the distributions of rates of return. Across the years the range of values

is very large. The top mean return of 64.3 per cent (1988) and the minimum of 8.7 per cent (1998) yield a huge range of 55.6 per cent. Moreover, the extremely high 64.3 per cent demonstrates that, even excluding the low-budget films that cost less than \$5 million – those with a small denominator in the formula of rate of return – huge average rates of return are achieved. This indicates the existence of expensive movies that generate high levels of rates of return: these films will be those producing large amounts of money in absolute terms, which will mitigate the possible losses originated by a large part of the remaining movies.

The *median* values of rates of return, as well as those of revenues, bring out the marked right skewness of the distributions, with values considerably lower than the mean rates of returns (second column, Table 6.3). The high inequality of values over the years is apparent from the maximum median rate of return of 29 per cent in 1996, and the minimum of 4 per cent in 1995, giving a range of 25 per cent.

These results become more interesting by bringing risk into consideration, and looking at the annual *standard deviations* (third column, Table 6.3). The variance is confirmed by the values of standard deviation, which go from a minimum of 1.16 (in 1991) to a maximum of 1.83 (in 1994), equal to a range of 0.67, which demonstrates an inequality between the annual variances that makes it impossible to outline a common pattern over the years. The coefficient of variation has been excluded from the analysis because of its doubtful value in this case, because of the low values of the mean annual rates of return

(close to zero), which are the denominator of the formula<sup>69</sup>. So, the standard deviation will be used as an appropriate proxy of variance of the distributions<sup>70</sup>.

The idea of unevenness and randomness is strengthened by examining the third and the fourth annual statistical moments. The *skewness* would be expected to be wide in range and right-skewed, because of the presence of a few films with extreme rates of returns that offset the negative returns of most of the other films. In fact, all the twelve annual distributions show positive skewness (fourth column, Table 6.3) – that is, they are all right-skewed and, in each year considered, a small number of movies achieve very high rates of return, while most of them deliver rates of returns lower than the mean. The skewness values clearly confirm that the data are not ‘normal’ in any year. Moreover, the values are quite random and differ significantly from one year to next. The minimum value is 1.04 in 1995, while the maximum is 4.17 in 1997, resulting in a range of 3.14. The shape of the distributions shows that the probability of getting extraordinary results just with one or a few movies is extremely low, since most movies are likely to achieve a rate of return lower than the mean. However, it is opportune to observe that just thinking in terms of rates of return is partially misleading, because they express a percentage profitability, and not real money generated or absorbed.

The fourth statistical moment is represented by *kurtosis* (fifth column, Table 6.3). A high kurtosis distribution has a sharper peak and fatter tails, while a low kurtosis distribution has a more rounded peak with wider "shoulders". Higher kurtosis means

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<sup>69</sup> The main drawback of the coefficient of variation is its sensitivity to small changes in the value of the mean when the mean is close to zero. In fact in this case, the coefficient of variation is sensitive to alterations in the standard deviation, considerably curbing its statistical significance (Livers, 1942, pp. 892-895).

<sup>70</sup> The same approach will be adopted also in the analysis of the Italian case.

that more of the variance is due to infrequent extreme values, as opposed to frequent modestly sized values. The opposite would occur in case of lower kurtosis. In the light of the analysis conducted so far, high values of kurtosis are to be expected. Mesokurtic distributions are certainly not expected – that is, distributions with zero kurtosis, because this would correspond to the normal distribution. Actually, all the twelve annual distributions are leptokurtic, i.e., they exhibit positive kurtosis. The maximum value of kurtosis is 27.54 recorded in 1997, and the minimum is 3.85 in 1995, with a considerable range of 23.69. It is also interesting to correlate the annual values of kurtosis and skewness. It can be noticed that they are related, as higher (lower) values of skewness usually correspond to higher (lower) values of kurtosis, and vice versa. The correlation coefficient between the two variables is particularly indicative, being equal to 0.938.

To conclude, it can be affirmed that the variance in the rates of return is considerable, and the measures of skewness and kurtosis follow an analogous pattern.

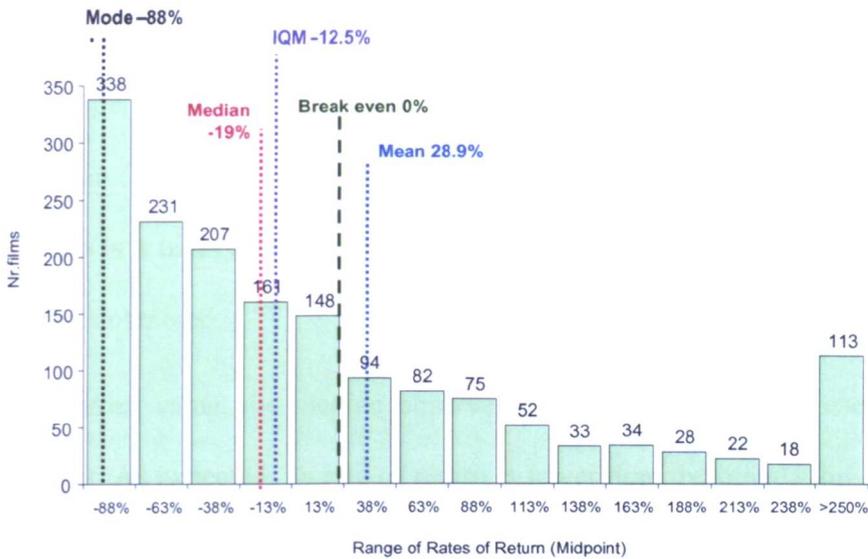
### **The distribution of rates of return of the whole US dataset**

Before discussing the possible interesting relationship between costs and rates of return, the implications of the previous analysis are examined more completely, by investigating the frequency distribution of rates of return of the 1,636 films conjointly, rather than on an annual basis. This distribution is re-presented in Figure 6.6<sup>71</sup>.

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<sup>71</sup> The figure is introduced, but not commented upon, in the “Data chapter”, par. 5.3.4, Figure 5.17.

Figure 6.6 – Frequency distribution of rates of return - Whole US dataset of 1,636 films



The *mean* rate of return of the sample population is 28.95 per cent. According to the analysis carried out through the annual risk indicators – and through skewness and kurtosis in particular – it is clear that the mean cannot be considered as representative at all. As anticipated, the annual risk indicators have shown right skewness and high kurtosis. More specifically, they have proved the capability of a very limited number of films to get extremely high rates of return, as most of the productions yield modest to poor results, much lower than the mean value. Also, for rates of return it is to be expected that the other values of central tendency would be much lower than the mean value of 28.95 per cent. For the explanation and the formulas of these indicators, refer to the observations made for the analysis of frequency distributions of revenues.

The *interquartile mean* (IQM) proves to be particularly apt for a sample with such uneven distributions. The first observation to consider is the  $[(n/4) + 1]$  film in order of rate of return – that is, the 410<sup>th</sup>, the first one belonging to the second quartile: *Celebrity*, with a rate of return of -69 per cent. The last movie included in the calculations is the

(3n/4) film – that is, the 1227<sup>th</sup>, and last one belonging to the third quartile: *Cyborg*, with a rate of return of 65 per cent. The IQM formula gives the more reasonable truncated mean of -12.5 per cent, more similar to the median value (as noticed below) than the population mean. The IQM, by excluding the extreme results, offers clear evidence that the distribution is a highly irregular one, in which extreme values weight substantially the mean values obtained.

As for the *median* value, the median observation – the 819<sup>th</sup> – is represented by the movie *Trespass*. As expected, its rate of return is lower than the population mean value, and equal to -19 per cent. Moreover, the median corresponds to a significantly negative value, meaning that much more than the half of the films produced have negative rates of return. In fact, taking into account the remaining films with a rate of return between -19 and 0 per cent, it is evident that two thirds of the films are not profitable. This outcome confirms the theory that a very small number of films generate extraordinary rates of returns, and their “weighting” in the distribution is so high as to produce a mean return of 28.95 per cent (De Vany, Walls, 1999; 1996; Collins *et al.*, 2002).

With regard to the *mode*, according to the considerations already expressed and to the fact that two thirds of the movies have a negative rate of return, a modal value lower than the population mean value is to be expected; specifically, a negative rate of return. The proof is striking, as the mode falls in the lowest class of observations in which film losses are close to 100 per cent - films lose almost all of their costs.

As the highest rate of return is 1,415 per cent, and the lowest is -100 per cent, the *range* has the extremely high value +1,515 per cent.

The *interquartile range* (IQR) proves to be a much more stable statistic than the pure range, as was also demonstrated in the revenue frequency distribution analysis. The reasons in support of the appropriateness of this indicator here have been fully explained in the previous sections discussing the results of revenue frequency distributions<sup>72</sup>.

This quantity is given by the formula:

Interquartile range = range between the third (+65 per cent) and the first quartiles (-69 per cent) = +134 per cent.

On the one hand, the value of +134 per cent is still a huge range if compared to the spectrum of expected values usually encountered in traditional financial securities: this confirms the high inequality and randomness of the distribution. On the other hand, it is significantly lower than the whole-population range of 1,515 percent: this sustains even more the thesis that a few extreme observations heavily condition the mean values of the distributions.

### **The distribution of rates of return of the main US companies**

To analyse the companies' performances, the complete companies population referring to all the 2,156 films released between 1988 and 1999 were examined – instead of the 1,636 most expensive films only – and then grouped by distribution Studio<sup>73</sup>. For the rates of return of each studio the four statistical moments, mean, standard deviation, skewness and kurtosis, were calculated. The results are summarised in Table 6.4.

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<sup>72</sup> See “Frequency analysis of the whole Italian population”, results for research question 1 of this chapter.

<sup>73</sup> For details of the aggregation and splitting up of the companies during the period of the analysis, see footnote 3, chapter 3. The eighteen companies considered in the analysis are: Buena Vista, Columbia, Fine Line, Fox, Goldwin Entertainment, Gramercy, MGM/UA, Miramax, New Line, Orion, Paramount, Sony Classics, Sony Pictures, Tristar, Triumph, Twentieth Century Fox, Universal, and Warner Bros.

Table 6.4 - Analysis of the statistical moments for the eighteen US film company datasets

<i>Company</i>	<i>No. of films</i>	<i>Rate of return</i>	<i>Standard deviation</i>	<i>Skewness</i>	<i>Kurtosis</i>
<b>Buena Vista</b>	202	55.0%	1.572	2.33	7.26
<b>Columbia</b>	82	22.8%	1.476	1.57	2.63
<b>Fine Line</b>	39	-58.0%	1.121	2.08	8.86
<b>Fox</b>	21	-27.8%	1.580	0.99	3.47
<b>Goldwyn Entertainment</b>	33	-19.9%	0.953	1.06	2.20
<b>Gramercy</b>	39	-4.6%	1.466	1.53	3.68
<b>MGM/UA</b>	126	-11.6%	1.179	3.65	26.33
<b>Miramax</b>	148	24.0%	2.166	2.69	9.61
<b>New Line</b>	102	60.9%	2.129	2.53	7.65
<b>Orion</b>	53	26.9%	2.068	3.62	15.89
<b>Paramount</b>	161	62.0%	1.765	3.64	18.15
<b>Sony Classics</b>	30	-53.6%	1.103	0.68	2.54
<b>Sony Pictures</b>	123	8.3%	1.073	2.27	7.82
<b>Tristar</b>	67	23.6%	1.239	2.46	6.71
<b>Triumph</b>	24	-60.6%	0.684	0.39	-0.26
<b>20<sup>th</sup> Century Fox</b>	157	45.8%	1.783	3.28	14.14
<b>Universal</b>	165	41.9%	1.393	2.82	16.46
<b>Warner Bros</b>	224	22.1%	1.179	2.32	8.77

It is not the purpose of this section to present a detailed analysis of the four statistical moments with regard to the companies considered, since it can be stated that the values exhibited in Table 6.4 are further confirmation of the conclusions drawn about the US annual populations, and the US population as a whole (results presented in the two previous paragraphs). The mean rates of return differ enormously between the companies, with Triumph recording -60.6 per cent, and Paramount +62 per cent. As a general rule, the main players (see Table 6.4) generate the higher positive returns, while the minor competitors with a smaller number of films released usually record the worst outcomes. The variance in the rates of return is considerable, as the standard deviations (with two exceptions) lie between 1 and 2.2<sup>74</sup>. Finally, in almost all cases, the statistical

<sup>74</sup> While Goldwyn Entertainment's standard deviation of 0.953 can be regarded effectively as 1, Triumph's results stand out, as it is the only company with a standard deviation significantly lower than 1 (0.684), with small positive skewness (0.39), and with negative kurtosis (-0.26). Nevertheless, these values are not very meaningful, because this company releases only 24 movies over the twelve years

distributions exhibit high levels of right-skewness and kurtosis. As to the orientation of the asymmetry, the bulk is concentrated to the left of the distributions, while for the peakedness, the variance of each distribution is conditioned by infrequent extreme events that perform extraordinarily at the box office compared to the modest results of most of the films.

### **The relationship between costs and rates of return - US dataset**

To refine the analysis, the comparison of the nature of rates of return to costs with that of revenues to costs on the sample population of 1,636 films is particularly significant. In fact, the previous analyses to meet the first research question posed (see methodology, chapter 4, Table 4.1) indicated that a relationship between costs and revenues exists, with a pattern repeated annually.

Also the analysis of rates of return has been grouped annually, resulting in the twelve scatter diagrams shown in the figures attached (see Appendix 3 at the end of the thesis). Each year investigated highlights a completely random trend, signalling that no relationship can be identified between costs and rates of return. A sizeable proportion of the population is clustered between 5\$ million – the threshold cost – and 25-30\$ million, as this is the most frequent range for production costs; but the corresponding intercepts on the y-axis are very scattered, making it impossible to detect a possible reference pattern. As the costs increase, the number of observations decreases (the density of movies diminishes), but the rates of return continue to be random and very scattered. Of

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investigated. So, its values do not weaken at all the significance of the results of the other 17 companies, which fully confirm the conclusions arrived at in chapters 3 and 4.

course, the ranges of possible rates of return drop as costs increase, because the cost denominator in the formula steadily increases.

It must be stressed that the visual representation of the rates of return distribution has to be carefully interpreted. Compared to revenues, the advantage of rates of return is that they express the link between profitability and cost. However, it must be emphasised that a film with a higher (lower) rate of return can be much less (more) profitable in absolute values than another one, because the rate of return is an indicator of the film's percentage profitability, and not of its basic ability to generate or absorb money. On the one hand, in 1995, *WaterWorld's* -50 per cent rate of return, against costs of \$130 million, results in a loss of \$65 million, while the rate of return of -100 per cent of a film such as *War of The Buttons* that cost little more than \$5 million results only in a loss of \$5 million. On the other hand, the 158 per cent rate of return of the high-budget movie *Twister* corresponds to a substantial profit of \$105 million, by itself one third of all the profits achieved by all the 149 films produced in 1996.

The just examined relationship between costs and rates of return for the 1,636 films in the twelve years can be represented in a single scatter diagram, which clearly depicts the random nature of returns to costs (Figure 6.7). In addition, five additional scatter diagrams, displaying specific selected cost intervals, have been created (the lower is the density of population, the larger is the interval chosen for each diagram); each of them exemplifies the random nature of rates of returns to any particular investment decision (Figures 6.8, 6.9, 6.10, 6.11, and 6.12).

Figure 6.7 - Costs to rates of return of the US population (films released between 1988-1999)

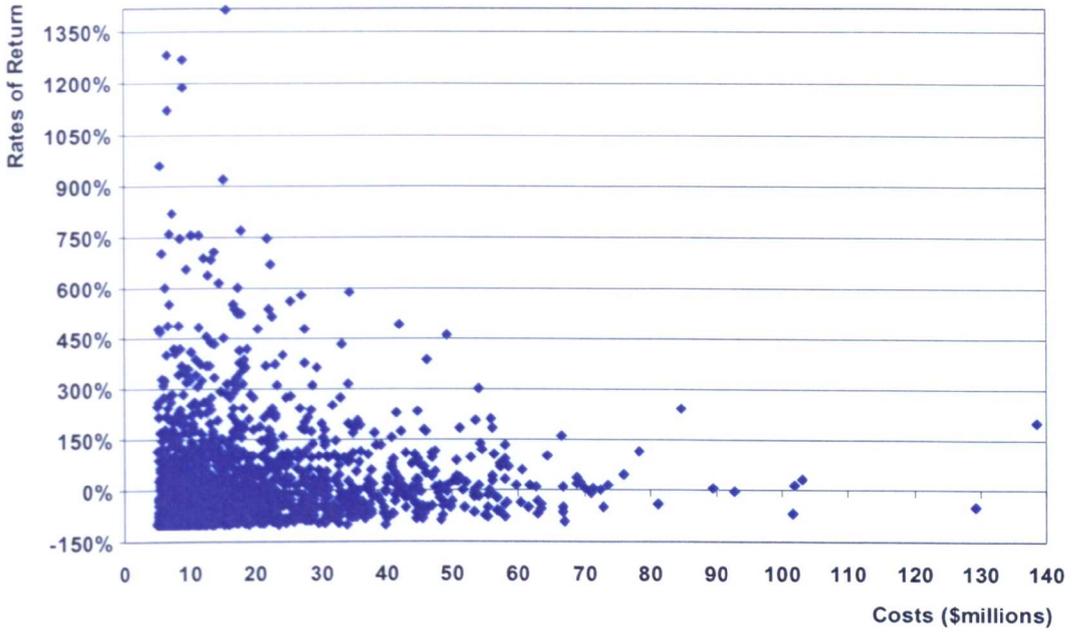


Figure 6.8 - Costs to rates of return, US dataset (films with costs between \$5 and \$20 million)

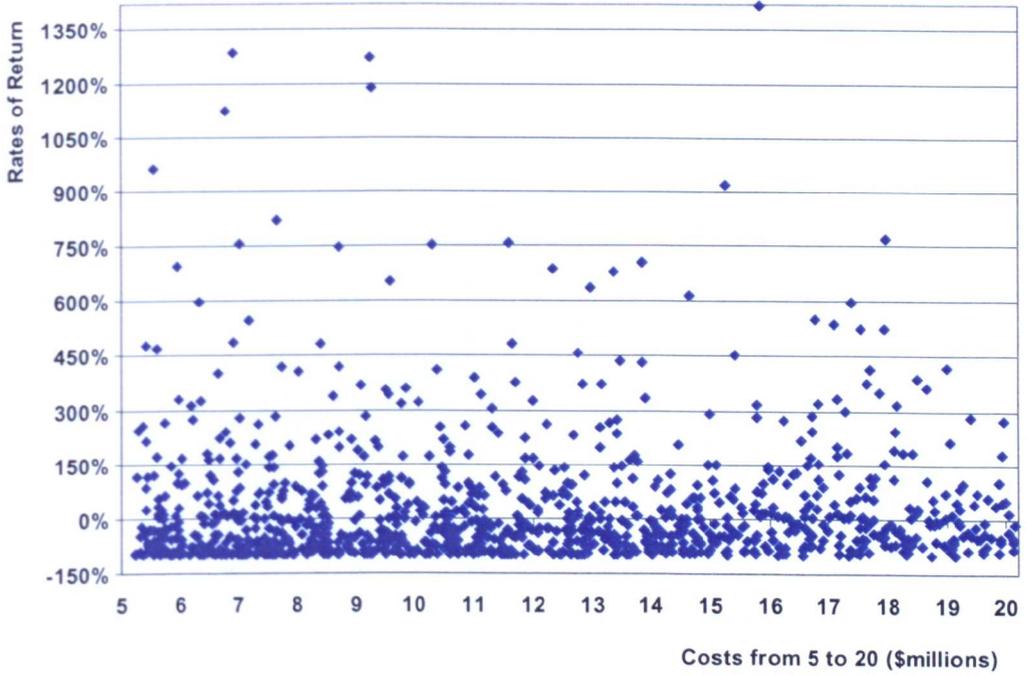


Figure 6.9 - Costs to rates of return, US dataset (films with costs between \$20 and \$35 million)

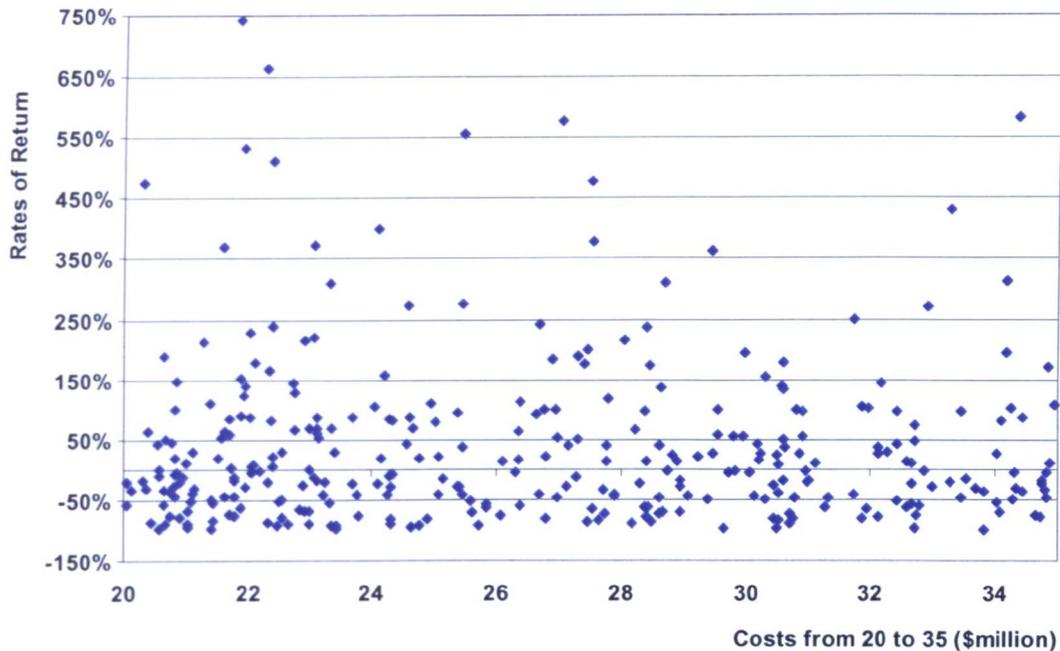


Figure 6.10 - Costs to rates of return, US dataset (films with costs between \$35 and \$50 million)

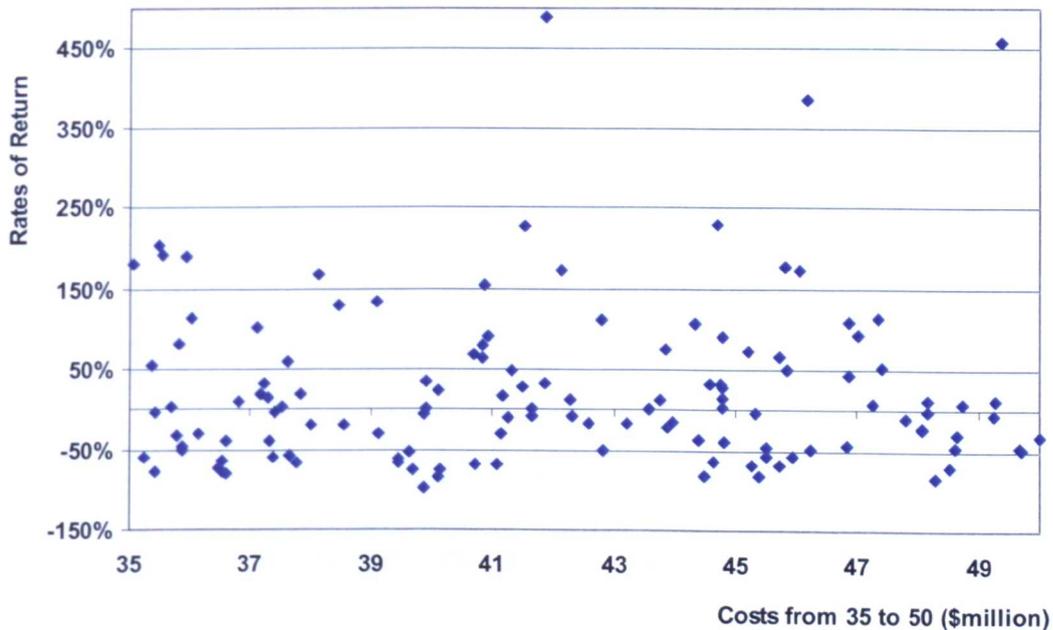


Figure 6.11 - Costs to rates of return, US dataset (films with costs between \$50 and \$70 million)

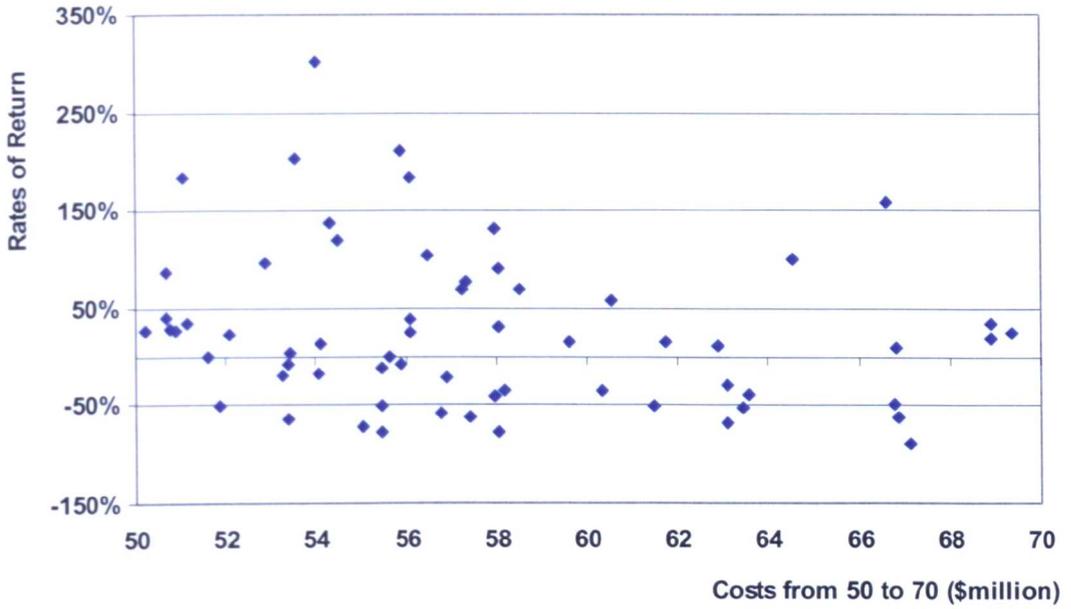
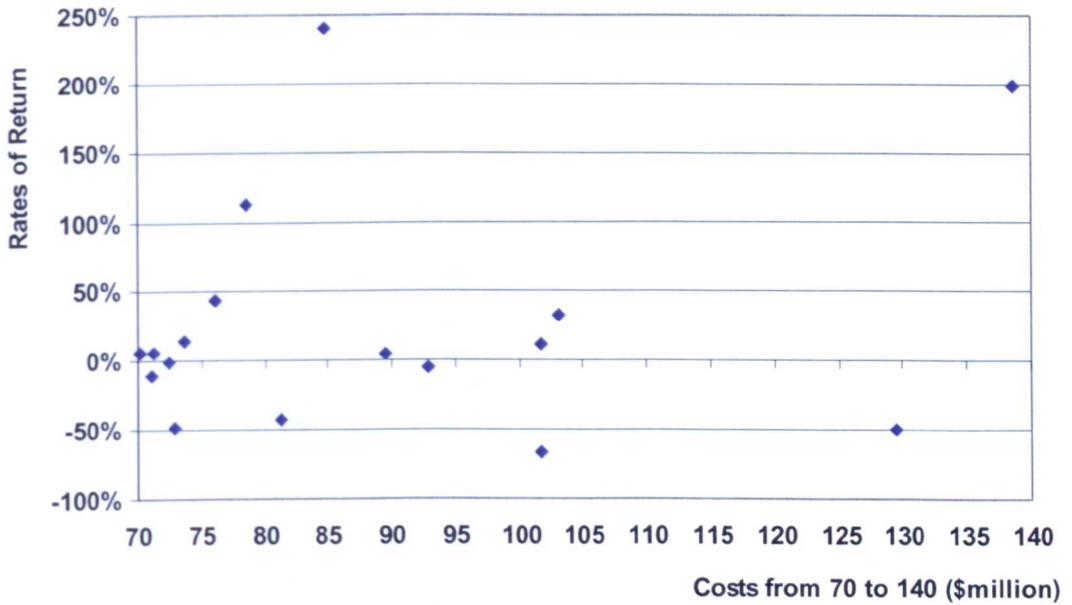


Figure 6.12 - Costs to rates of return, US dataset (films with costs between \$70 and \$140 million)



## Italy

### The annual distributions of rates of return of the Italian dataset

The analysis of the annual distribution of rates of return provides even more significant information than that derived from revenues since it connects costs and revenues, offering a relative measurement of the industry's profitability. In addition, while some previous contributions have systematically investigated the frequency distribution of revenues in the industry (Bagella, Becchetti, 1999; De Vany, 1994, Collins *et al.*, 2002), no studies have dealt empirically with the frequency distribution of rates of return.

The US context recorded high values of the risk indicators, irrespective of whether standard deviation, skewness or kurtosis was taken as the chosen indicator (Table 6.3). Nevertheless, it also showed a successful trend in terms of profitability, with a mean rate of return for all the population investigated of 28.9 per cent (Figure 6.6). It will be interesting to find out if the risky features of the film industry are also compensated by satisfactory profitability, as they are in the USA.

Table 6.5 illustrates the four annual statistical moments and the median for rates of return of the Italian dataset in the nine years investigated.

Table 6.5 - Key descriptive statistics of annual rates of return distributions – Italian dataset

	<i>Mean</i>	<i>Median</i>	<i>St.Dev</i>	<i>Skewness</i>	<i>Kurtosis</i>	
1995	-0.24	-0.73	1.48	2.41	9.13	
1996	-0.17	-0.80	2.37	5.02	31.01	
1997	0.16	-0.85	3.27	4.00	17.25	
1998	-0.29	-0.85	1.74	4.16	24.25	
1999	-0.66	-0.89	1.39	-3.47	15.79	
2000	-0.34	-0.92	2.22	6.29	42.34	
2001	-0.48	-0.92	1.18	1.80	6.02	
2002	-0.55	-0.94	1.35	1.77	13.90	
2003	-0.56	-0.86	1.46	-0.33	11.08	
Range	MAX	0.16	-0.73	3.27	6.29	42.34
	MIN	-0.66	-0.94	1.18	-3.47	6.02

For rates of return, the annual *mean* (first column, Table 6.5) is given by the formula:

$$\text{Mean annual rate of return}_t = \frac{\sum_{i=1}^n R_i - \sum_{i=1}^n C_i}{\sum_{i=1}^n C_i}$$

where:

$R_i$  = revenue of film  $i$

$C_i$  = cost of film  $i$

$t$  = year that the  $i^{\text{th}}$  film was released

$i = i^{\text{th}}$  film considered within the annual population made up of  $n$  films

$n$  = number of data points (films) composing the annual population.

This first indicator yields an astonishing result, as eight of the nine years are unprofitable: 1997 is the exception, with a positive rate of return of 16 per cent. These results should cause concern, because they show that the Italian product released onto the national market – without going into the details of the companies operating in it – is completely unprofitable over the nine-year span (except for 1997). It must be stressed again that the analysis carried out refers only to the Italian films released onto the national market between 1995 and 2003, excluding the non-Italian films screened, among which Hollywood companies' market share is about 60 per cent over the nine years examined (chapter 5.3.1, Table 5.10). In addition, the degree to which the rates of return are negative is daunting; the worst year, 1999, records -66 per cent, and the “least unfavourable”, 1996 (excluding 1997's positive result), records -16.7 per cent: in absolute terms, the latter involves a substantial loss of €21.6 million – that is, the difference between costs of €129.4 million and revenues of € 107.8 million.

A second significant indicator expressing profitability is the annual *median* rate of return (second column, Table 6.5). The results corroborate the findings of the analysis of the American context. Each median value is considerably lower than the annual mean rate of return. In this context, the effect is even more striking, as the median values correspond to even more negative rates of return compared to the mean values observed, though in a narrower range, between -73 percent and -94 percent.

The risk indicators are of primary importance. Among these, the examination of the annual values of *standard deviations* is of great interest (third column, Table 6.5). They demonstrate high levels of risk, since in all cases the measure of variance is at least as large as the annual mean itself.

The results of *skewness* are in line with the findings for the US market, but with idiosyncratic exceptions (fourth column, Table 6.5). Seven out of nine annual distributions are right-skewed, confirming that in these cases a small number of very profitable films dominate the market, and that the annual mean rate of return “overestimates” the individual rates of return of most films composing the annual population, which are placed in the left of the distribution. In fact, the annual mean rate of return is mainly determined by the very few successes at the box office. However, a slight negative skewness of -0.33 is observed in 2003, and a considerable negative skewness of -3.47 in 1999. As skewness measures the asymmetry of a distribution, these negative values imply that the films whose rates of return are placed to the left of the mean are fewer, but farther from the mean, compared to the films with rates of return to the right of the mean. Notice that 1999 and 2003 are the years with the highly negative rates of return. In these cases, since the annual mean rate of return is mainly determined

by the higher weighting of the few films in the left of the distribution, the resulting annual mean rate of return “underestimates” the return of the bulk of the films released that year. This biasing effect is perceptible when analysing the annual median values, equal to -89 percent and -86 per cent, respectively, in 1999 and 2003; values that are in line with the median values belonging to years with not such negative mean rates of return.

Finally, *kurtosis* values are in keeping with those of the US context (fifth column, Table 6.5). The extremely high annual kurtoses, due to the exceptional returns of a small number of films, entail fat tails in the distributions – that is, a greater percentage of very low and very high returns than would be expected in a normal distribution. While the minimum annual value of kurtosis is a considerable 6.02, in 2001, the maximum is a huge 42.34, in 2000. However, note that 42.34 is essentially due to one film, *Chiedimi se Sono Felice*, which generated €30.5 million at the box office in 2000, an extraordinary outcome for an Italian film in the national market.

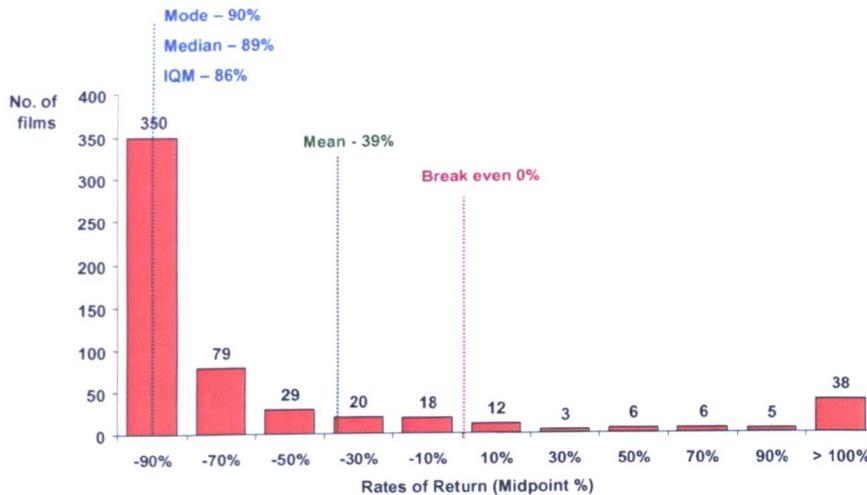
### **The distribution of rates of return of the whole Italian dataset**

The annual analyses depict by themselves a clear and unequivocal scenario about the risk and return trade-off. The analysis of the frequency distribution of the rates of return for all the 566 Italian films – considered as a whole population – has been carried out, in order to strengthen confidence in the conclusions derived from the annual analyses of the variance and profitability characteristics of the Italian film industry. The frequency

distribution of the whole population of national films over the nine-year period is represented in Figure 6.13<sup>75</sup>.

The range of this interval is very wide: 2,188 per cent - 102 per cent = 2,086 per cent.

Figure 6.13 – Frequency distribution of rates of return – Italian dataset



The *mean* rate of return is very negative, and equal to a concerning -39 per cent that originates in a whole-population loss of €555.7 million. In fact, with €1,423.2 million spent in production, the 566 Italian films examined only generate revenues of €867.5 million. The other central indicators would be expected to record much more negative values, for the reasons already explained (see the analysis of results of median revenues), and to be similar to each other. In fact, this is what happens.

The *median* rate of return is -89 per cent. This means that half the population attains a rate of return that is less than the midpoint value of the first unit interval. Furthermore, of the 566 films, 350 (58.3 per cent) are in the first unit interval, which is to say that each achieves a rate of return between -100 and -80 per cent. The result of this

<sup>75</sup> The figure is introduced, but not commented upon, in the “Data chapter”, par. 5.3.34 Figure 5.18.

clustering is a *mode* of -90 per cent. This information by itself should be sufficient evidence of the unsatisfactory performances of Italian films in the local market.

The *interquartile mean* (IQM) should theoretically partially raise the mean profitability of the truncated population. However, despite the exclusion of the worst 141 films (and the best 141 as well, of course), the interquartile mean is -86 per cent. So, even after truncation, the films with extremely negative rates of return prevail: 208 films still record a mean rate of return of -90 per cent, leading to the extremely low value of the interquartile mean.

Finally, for the *interquartile range* the adjustment in population dramatically modifies the results. The whole-population range of the distribution is very wide: 2,188 percent - (-100) percent, i.e., 2,288 per cent. The interquartile range reduces this to 34 per cent, obtained from the truncated-population maximum rate of return of -63 per cent and the minimum of -97 per cent. This last outcome reaffirms the previous findings, which showed that, except for a very limited number of films that performed satisfactorily, the extremely unsatisfying rates of return of the first quartile group dominate the results.

### **The distribution of rates of return of the main Italian companies**

The main eight companies in terms of films released – the only ones producing at least an average of three films a year during the nine-year period of analysis – are considered. Among these, three are responsible for a statistically significant number of movies: Cecchi Gori, 81; RAI, 47; Medusa 37, as examined in the Data Chapter (paragraph 5.3.2.2). Over the nine years investigated, the other five players released a minor

number of films, not significant in statistical terms, with the rest of the market scattered over an extremely high number of companies.

Table 6.6 summarises the main results for the four statistical moments and median rate of return for the eight companies.

Table 6.6 – Analysis of the statistical moments for the main Italian companies 1995-2003

<i>Company</i>	<i>Nr. of films</i>	<i>Mean rate of return</i>	<i>Median rate of return</i>	<i>Standard deviation</i>	<i>Skewness</i>	<i>Kurtosis</i>
<i>Cecchi Gori</i>	81	-0.07	-0.59	1.93	2.92	16.05
<i>RAI</i>	47	-0.62	-0.85	0.67	0.04	1.81
<i>Medusa</i>	37	0.13	-0.83	2.52	3.10	9.40
<i>Istituto Luce</i>	26	-0.77	-0.85	0.73	1.01	3.64
<i>Filmauro</i>	22	0.73	-0.59	2.15	-0.26	2.18
<i>Cattleya</i>	15	-0.72	-0.79	0.95	-1.55	1.50
<i>Mikado</i>	15	-0.77	-0.90	0.83	-0.98	2.29
<i>Fandango</i>	12	0.14	-0.72	1.65	2.15	4.65

The analytical comments on the frequency distributions of revenues and rates of return made in the previous sections are equally applicable to the four statistical moments and median in the Italian context. For this reason, further detailed observations about the outcomes of each single company shown in Table 6.6 will not be provided. However, the following points need to be noted:

The mean profitability – expressed by the rate of return (third column, Table 6.6) – confirms the negative performance of the Italian companies in the national market, already pointed out on annual basis in Table 6.5, and on the whole Italian dataset in Figure 6.13. Only three companies (Medusa, Filmauro, and Fandango) register positive rates of return. The fact that some of the main companies are profitable, despite a whole-population rate of return of -39 per cent, (Figure 6.13), further suggests that the films released by those companies that disappeared after one or two productions are the most

unsuccessful. Therefore, the extreme fragmentation of the market in terms of competitors – the 311 films not produced/released by the eight largest companies belong to 111 different companies (also see Chapter 5.3.1) unquestionably constitutes a negative feature in determining the industry's profitability.

The results for the median rates of return (fourth column, Table 6.6) are fully in line with expectations. The bulk of films – also in the company breakdown – have highly negative rates of return, the majority of them with returns lower than the mean rate of return previously identified. Accordingly, the median rate of return is highly negative in all the eight cases.

As to the risk indicators, it is evident that the standard deviation, skewness and kurtosis values corroborate the perception of high risk that distinguishes the industry. Nevertheless, the values are lower in comparison with their US counterparts. Medusa has the largest standard deviation of 2.52. However, four out of the eight main competitors have a standard deviation value less than 1 (fifth column, Table 6.6), but, interestingly, the four companies with the highest standard deviation register the highest rate of return as well.

Thus, a positive relationship between profitability and risk can be demonstrated: as the profitability – expressed by rate of return – decreases, the associated risk – identified by standard deviation – decreases as well. Accordingly, the risk and return trade-off principle is suggested by the data (Markowitz, 1952).

The outcomes of skewness and kurtosis are equally interesting. In particular, skewness acts slightly differently than it does on the whole population. Three companies show a negative skewness (though very limited in two cases), while the other five have high-

skewness distributions (sixth column, Table 6.6). However, the results for companies' kurtosis strongly support the annual kurtosis trends identified in the whole population (Table 6.5). This is due to the presence of a few films that obtain extremely large revenues, which are nevertheless not always able to bring about profitability for the entire output of a company. Taking the kurtosis value of 16.05 for Cecchi Gori as an example, this is essentially due to just two films, *Il Ciclone* and *Fuochi d'Artificio*, which generated profits of €34.4 million and €29.3 million, respectively, compared to a mean loss for the company of €0.2 million.

The number of films constituting the population of each company is a key variable of the analysis, but unfortunately, except for Cecchi Gori, RAI, and Medusa, the other competitors investigated released from 12 to 26 films each. Such very limited numbers of films could have biased the values of some of the risk and return indicators analysed, and this must be taken into account.

### **The relationship between costs and rates of return – Italian dataset**

This section is going to test whether the random distribution of costs and rates of return that was found in the US context is replicated in the Italian context.

Seven different scatter diagrams are presented at the end of this paragraph. Each of them unequivocally corroborates the US result. Taking the whole population of 566 national films into account (Figures 6.14 and 6.15), the distribution is completely random and impossible to standardise. No relationship can be identified between production budgets and rates of return.

It can be observed that the bulk of population clusters in the area with costs between  $\approx 0$  and 8-10€ million. Since this represents the most frequent range for production costs, a further breakdown has been conducted to provide a more exhaustive and appropriate visual representation. Figure 6.16 depicts the distribution considering the films that cost between  $\approx 0$  and €10 million; Figures 6.17, 6.18, 6.19, and 6.20 present further cost sub-categories, depicting films that cost, respectively, between  $\approx 0$  and €2 million, €2 and €4 million, €4 and €6 million, and €6 and €10 million.

The diagrams display the complete randomness of the rates of return distributions. For any range of cost identified, the corresponding rate of return is arbitrary, and hence unpredictable. In addition, each frequency distribution is extremely flat, even though distinguished by a high level of risk, as was found for the revenue frequency distributions.

The analysis suggested by the scatter diagrams needs to be interpreted with some caution. On the one hand, the advantage of rates of return is that they represent a ratio between profits/losses and costs, which makes them a useful relative profitability indicator, unlike revenues. On the other hand, a hasty interpretation of the values on the scatter diagrams could be quite misleading, because a rate of return, being a dimensionless ratio, cannot by itself express how much each single film gained or lost in absolute terms. For example, if one looks at Figure 6.14, there are two points with a similar rate of return – over 400 per cent – but in correspondence with different cost unit intervals, of  $\approx 0$ -1€ million and 8-9€ million, respectively. These two films have a completely different weighting in terms of value generated. The first observation refers to the film *La Capagira*, which generated a rate of return of 440.6 per cent; the second

observation marks the already mentioned *La Vità è Bella*, which achieved a rate of return of 421.3 per cent. However, as *La Capagira* obtained this return on the basis of a cost of just €67,000, this rate corresponds to an absolute gain of only €295,000, while the Oscar award winning film by Roberto Benigni attained this return on the basis of a production budget of €8.2 million, thus generating more than €34.3 million in absolute terms.

In conclusion, the analysis of the relationship between costs and rates of return strongly corroborates the outcomes obtained for the US context, delineating a common feature for the industry, irrespective of the efficient/inefficient market aspects taken into consideration. The result is a completely random and unpredictable scenario, which makes the analysis of the market performance of past films – in terms of costs and rates of return – not helpful for predicting the likely results obtainable from the new films screened.

Furthermore, the analysis of rates of return has also been grouped annually, resulting in the nine annual scatter diagrams shown in the Appendix 4 at the end of the thesis.

Figure 6.14 – Scatter diagram: costs to rates of return of whole Italian population

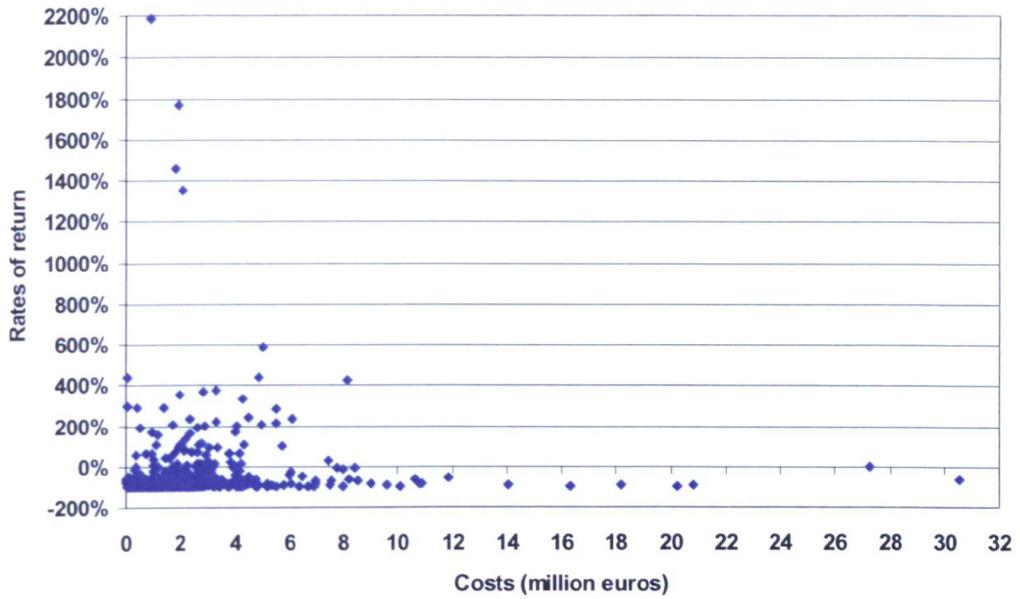


Figure 6.15 – Costs to rates of return of selected Italian population: up to rate of return of 400

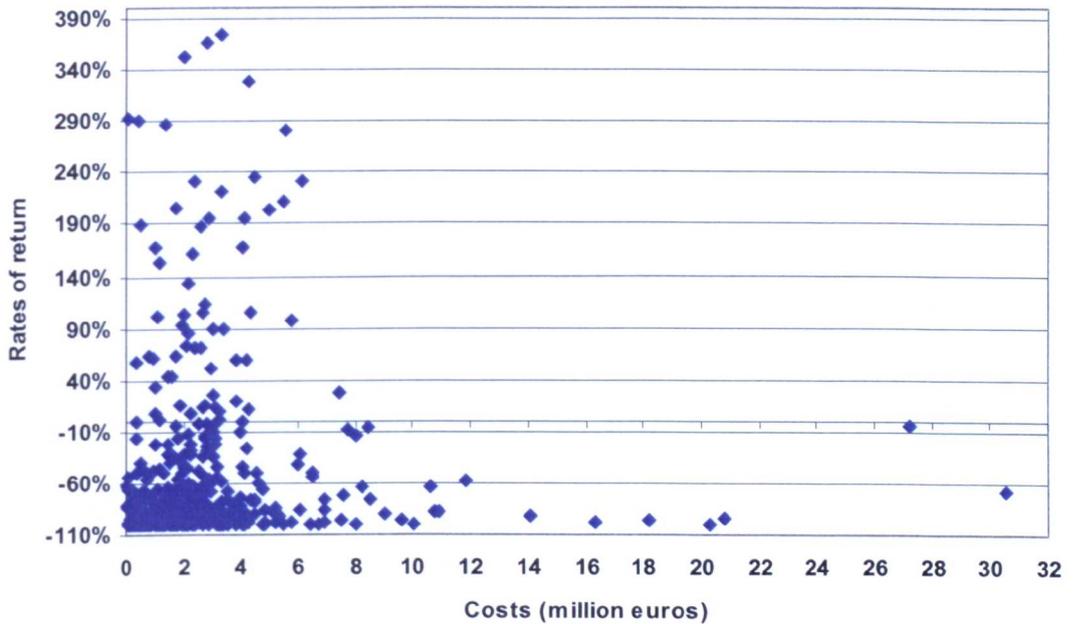


Figure 6.16 – Costs to rates of return of selected Italian population: costs between ≈0 and \$10

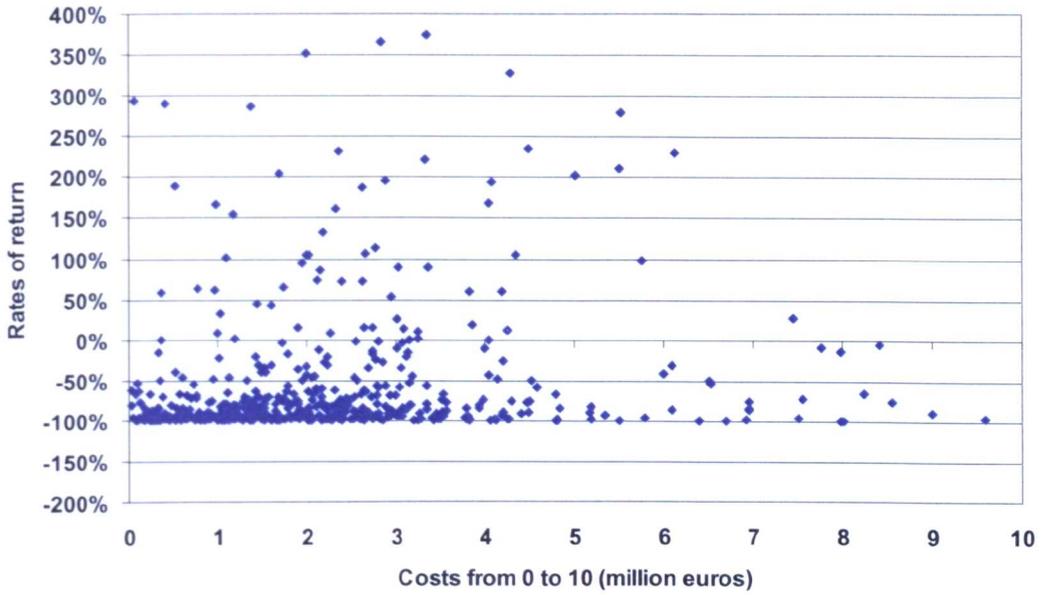


Figure 6.17 – Costs to rates of return of selected Italian population: costs between ≈0 and \$2 million

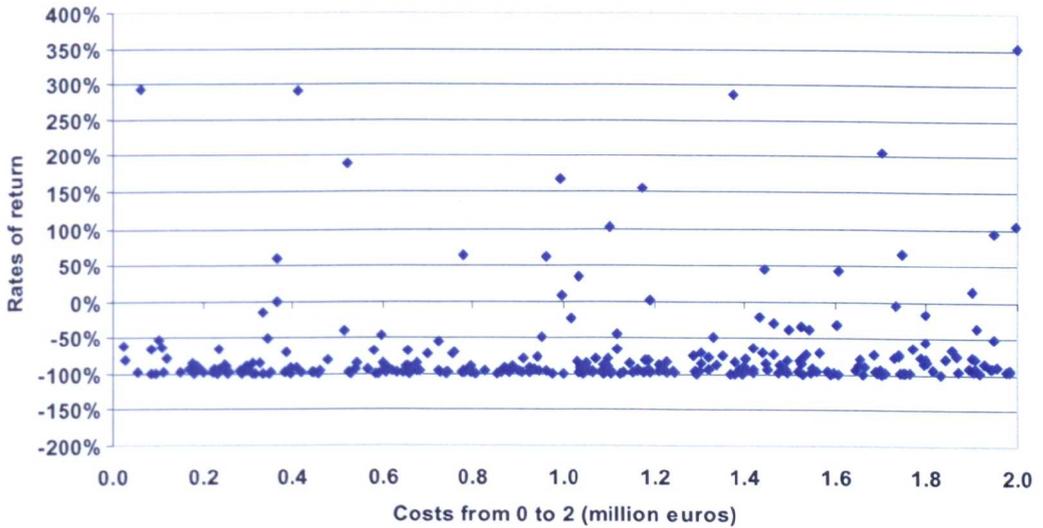


Figure 6.18 – Costs to rates of return of selected Italian population: costs between €2 and \$4

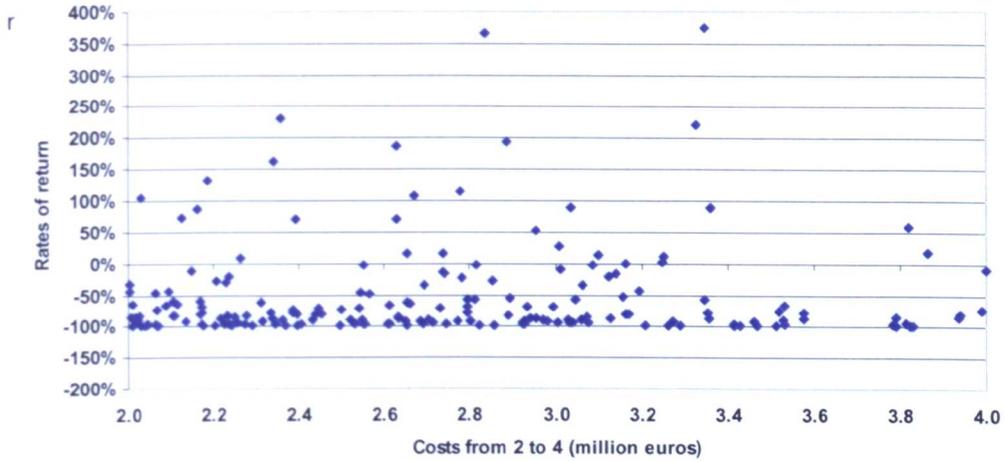


Figure 6.19 – Costs to rates of return of selected Italian population: costs between €4 and \$6

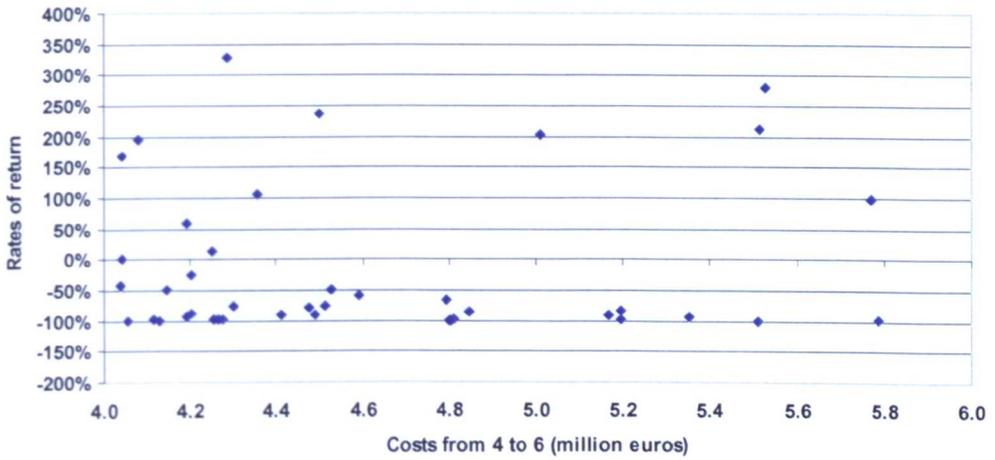
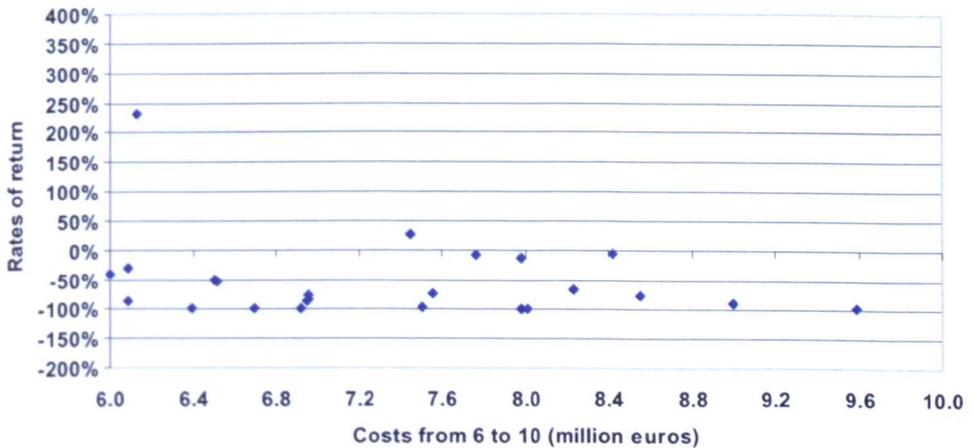


Figure 6.20 – Costs to rates of return of selected Italian population: costs between €6 and \$10



### **6.3 The risk and return trade-off**

In the two previous sections a cost analysis was partially conducted proving that both in the US and Italy a positive relationship exists between costs and revenues (ch. 6.1), but that no relationship can be identified between costs and rates of return (ch. 6.2).

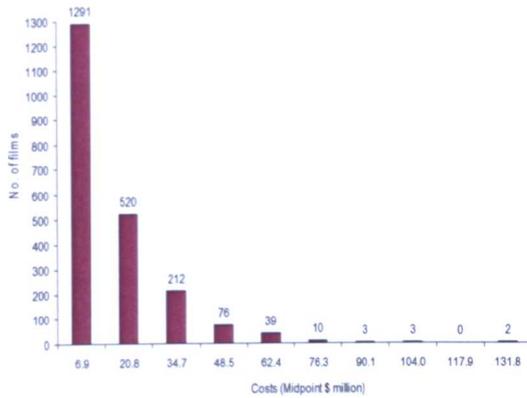
This section delves into the risk and return trade-off of the film industry, by investigating the different frequency distribution of cost in the two contexts in order to investigate the extent to which average production cost affected the respective results: since the mean production budget is very different in the US and Italy, this section is concerned whether the production of lower budget films is always less risky than high budget ones. This query can be answered by analysing the expected risk – expressed in terms of standard deviation as indicated in Table 4.4 of chapter 4 – of single films taken individually compared to the risk taken overall by production companies and achieved by creating sub-samples of films with specific production budgets.

Paragraph 6.3.1 presents the results of the cost frequency distribution analysis, and paragraph 6.3.2 shows the possible relationship between average production cost and results. For both sections, the US results are described first.

### 6.3.1 Frequency distribution cost analysis

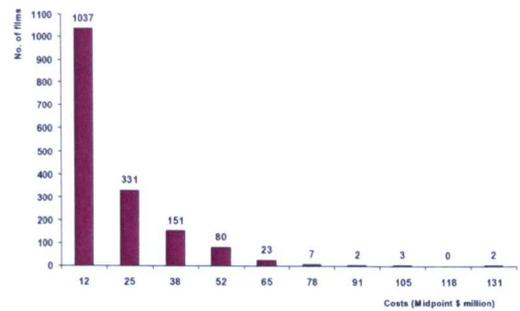
In this section, the film distributions of costs per deciles of the US and Italian are re-presented respectively in Figures 6.21 and 6.22, and Figure 6.23<sup>76</sup>.

Figure 6.21 – Film distributions of costs per deciles – US dataset of 2,156 films



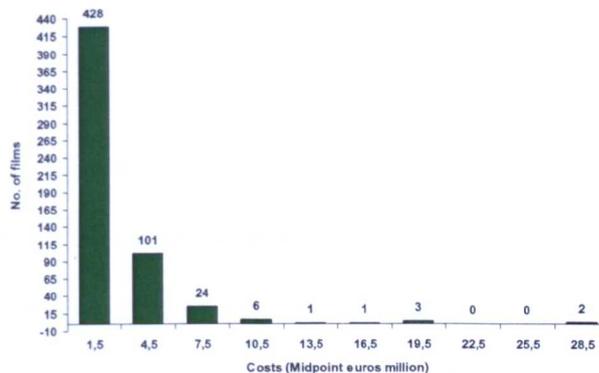
*Notes:* Film distribution of cost per decile based on the US population of 2,156 films, which also includes those that cost less than \$5 million.

Figure 6.22 – Film distributions of costs per deciles – US dataset of 1,636 films



*Notes:* Film distribution of cost per decile based on the final US population of 1,636 films, which excludes those that cost less than \$5 million.

Figure 6.23 – Film distributions of costs per decile – Italian dataset of 566 films



*Notes:* Film distribution of cost per decile based on to the final Italian population of 566 films.

<sup>76</sup> The figures were already introduced in the “Data chapter”, par. 5.3.2.1, Figures 5.4, 5.5, and 5.6.

As stated in the Data chapter (par. 5.3.2.1) only the visual impression of frequency distributions of costs in the two contexts is similar. In fact, in both markets the number of films per decile drops sharply, in a quasi-geometric progression, as production budgets rise. Whatever graph of the US context is considered, 60 to 63 per cent of observations fall within the first decile, and about 80 per cent in one of the two first deciles, while 75.6 per cent of films of the Italian dataset belong to first unit interval, and even 93.5 per cent belong to one of the first two unit intervals.

However, this is only a visual impression, as the same cost deciles in the two contexts refer to very different availability of capital. Considering the US sample of 2,156 films (referring to all those films that have complete information on costs), the 1,291 movies falling within the first decile grouping have a mid-point production budget of \$6.9 million – that is, 4.6 times the mid-point production budget of an average Italian movie included in the first decile group of Figure 6.23. The cost of an average film included in second decile group of the US dataset of 2,156 films is €20.8 million, a production budget assigned to only a couple of the 566 films of the Italian dataset over the time span analysed<sup>77</sup>. The picture is extremely clear: the average production budget at the disposal of the 2,156 movies of Figure 99.3 is \$15.4 million – being the median cost \$10.9 million – while is \$19.4 million for the 1,636 films which cost more than €5 million to be made – with a median cost of \$14.4 million. On the other hand, the average cost of the overall Italian population of 566 films is €2.5 million, with a median cost of €1.95 million. In both contexts it can be observed that few movies were extremely expensive compared to the average. Thus, because of these “cost outliers” in both

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<sup>77</sup> For a comparison of the euro/dollar exchange rate over the years investigated, also see: [http://sdw.ecb.europa.eu/quickview.do?SERIES\\_KEY=120.EXR.D.USD.EUR.SP00.A](http://sdw.ecb.europa.eu/quickview.do?SERIES_KEY=120.EXR.D.USD.EUR.SP00.A)

contexts, the median production budget is a more representative indicator of the resources invested in an average production. Difference in the availability of capital in the two backgrounds is striking, with the median production budget of the extended US dataset 5.7 times greater than the median Italian film.

Hollywood productions have much higher budgets, while in Italy films can rely on a much more limited amount of financial resources. Finally, the quasi-linear relationship between revenue and costs identified is less clear for the few costly Italian movies, giving them a higher risk and rate trade-off profile, and constituting a further deterrent to raise the average amount of production budgets.

### **6.3.2 Possible relationship between average production cost and results**

#### **US**

The results of the five main US competitors – Paramount, Buena Vista, Twentieth Century Fox, Universal, and Warner Bros – are reported and commented according to what explained in the Methodology chapter (Chapter 4, Table 4.4).

Paramount is taken as a model to represent the results in this section. Its population has been described in the Data chapter (chapter 5.3.2.2, Table 5.13 and Figure 5.9). The risk of each single Paramount's film taken individually is high, with the standard deviation of the rates of return of the population of 1.765. Furthermore, the distribution is highly right-skewed (skewness = 3.64), and extremely peaked (at 18.15, the second highest value of kurtosis among the eighteen US companies investigated). Note that most of this

huge value of kurtosis is due to the presence among the 161 films of *Titanic*, the greatest generator of profits among all the movies forming the whole population (revenue \$413.2 million, with a cost of \$138.7 million). The frequency distribution of revenues (overall, and without *Titanic*) and the frequency distribution of profits and losses for Paramount are shown at the end of this paper in Figures 6.24, 6.25, and 6.26.

The results for all the five companies investigated are shown in Table 6.7. The comparison made is between the standard deviation of each company's whole population of films, representing the expected risk of the single film taken individually (1.765 for Paramount), and the average of the standard deviations of each sub-sample created.

#### *Films with similar costs*

These results are particularly interesting, as they enable us to pass a judgement on the setting up of low-budget and high-budget productions. In particular, observe that both the mean of the standard deviations of the six sub-samples created including only low-budget movies (on average around \$10 million allocated apiece), and the mean of the standard deviations of the six sub-samples with expensive films only (on average around \$40 million allocated apiece) are lower than 1.765. However, this result is not so significant for the samples of low-budget movies, whose standard deviation is similar (1.715), while the risk is considerably reduced when considering only the six costly samples (standard deviation of 1.379). This would suggest that a plan with only low-budget movies proves to be not particularly rewarding, as this type of production only slightly reduces the risk in comparison with that of the whole population. Despite the probability of lower absolute losses (because of the smaller amount of capital invested),

the variance of low-budget sub-samples created is greater than that of the high-budget ones, suggesting that a mix of the two typologies of films could be a good strategy for minimizing the studio's exposure to risk.

### *Films with differentiated costs*

Each sub-sample includes – as far as possible – different movies (the same film is not included in more than one sub-sample) drawing a defined number of films from different decile classes of the company's cost frequency distribution. The results are very significant. The mean of the standard deviations of the sub-samples including movies with differentiated costs is much lower than 1.765. This would imply that a mixture of high-budget and low-budget movies would be a sensible strategy that film companies should follow, since the associated variance is lower than that recorded both by cheap and expensive movies taken separately.

As can be seen in Table 6.7, the outcomes just described for Paramount are repeated for the other studios. An attentive examination points out that putting together only expensive or only cheap films appears to be a much riskier approach than mixing films of different budget categories. However, it can be observed that the “high budget” sub-samples are less risky than the “low budget” sub-samples, leading to a somewhat surprising result, as it might easily be thought that high budget movies (because of the large amount of money spent) are more risky ventures than the cheaper productions. In fact, as it is impossible to predict the profitability of a movie according to its budget, it could be easily thought that if a low-budget film does not generate revenues, it will waste at most the comparatively few dollars invested in its production. Instead, in the

same situation a high-budget movie will waste the larger amount of money invested in it.

Table 6.7 - Risk and return trade-off: companies' population vs. production cost categories of films

	Company's population	Films with similar cost	Low budget Films	High budget Films	Films with differentiated cost
<b>Paramount</b>					
Mean rate of return	0.620	0.702	0.688	0.715	0.337
Mean standard deviation	1.765	1.547	1.715	1.379	0.831
<b>Buena Vista</b>					
Mean rate of return	0.550	0.306	0.433	0.179	0.153
Mean standard deviation	1.572	0.967	1.160	0.774	0.688
<b>20th Century Fox</b>					
Mean rate of return	0.458	0.023	0.058	0.023	0.048
Mean standard deviation	1.783	0.933	1.015	0.933	0.824
<b>Universal</b>					
Mean rate of return	0.419	0.353	0.393	0.313	0.192
Mean standard deviation	1.393	1.038	1.126	0.951	0.909
<b>Warner Bros</b>					
Mean rate of return	0.221	0.071	0.045	0.097	0.073
Mean standard deviation	1.179	0.831	0.934	0.729	0.628

Notes: the five main US companies operating between 1988 and 1999 were analysed, according to what explained in the Methodology chapter (Table 4.4)

Figure 6.24 – Costs to rates of return for the whole Paramount population

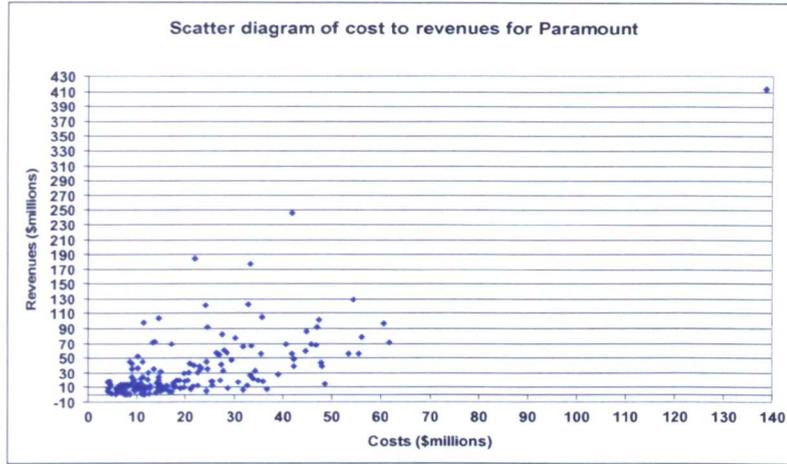


Figure 6.25 – Costs to rates of return for the Paramount population (excluding *Titanic*)

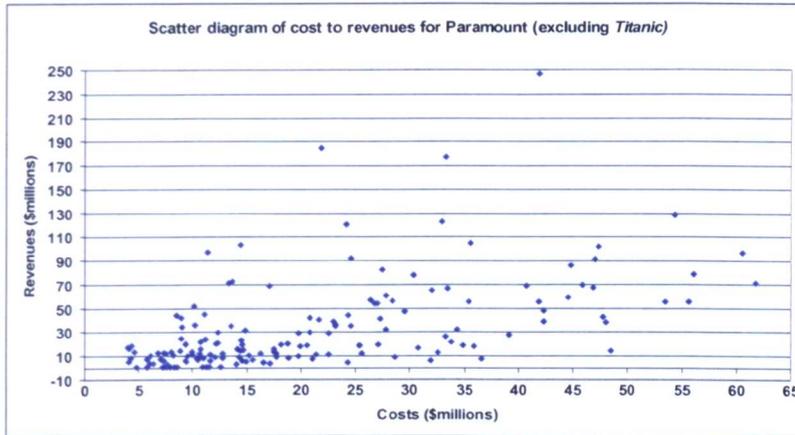
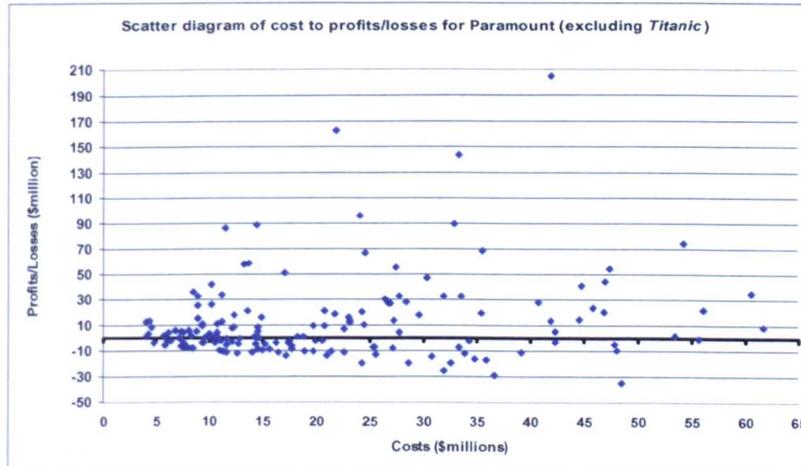


Figure 6.26 – Costs to profits/losses for the Paramount' population (excluding *Titanic*)



## Italy

The results of the three main Italian competitors – Cecchi Gori, RAI, and Medusa – are shown in Table 6.8, according to what explained in the methodology chapter (Chapter 4, Table 4.4).

Table 6.8 – Risk and return trade-off: companies' population VS. different cost categories of films

	Company's population	Films with similar cost - Low budget Films	Films with differentiated cost
<b>Cecchi Gori</b>			
Mean rate of return	-0.07	-0.44	-0.81
Mean Standard Deviation	1.93	0.52	1.43
<b>RAI</b>			
Mean rate of return	-0.62	-0.59	-0.72
Mean Standard Deviation	0.67	0.68	0.79
<b>Medusa</b>			
Mean rate of return	0.13	-0.64	-0.65
Mean Standard Deviation	2.52	0.46	0.74

Notes: The three main Italian companies which produced on average at least three films a year during the nine-year period from 1995 to 2003 were analysed, according to what explained in the Methodology chapter (Table 4.4)

### *Films with similar costs*

The results are especially interesting, because the small number of films in the most costly decile groupings makes it impossible set up sub-samples of expensive films only. The comments hence refers to the sub-samples of low budget films created, which are the bulk in the cost distribution for each company considered. Both Cecchi Gori and Medusa reduce their variance substantially: Cecchi Gori registers a standard deviation of 0.52, nearly four times lower than its population's standard deviation; Medusa registers a standard deviation of 0.46, over five times smaller than its population's standard

deviation. These outcomes are particularly astonishing. On the one hand, they would prove that, in the Italian market, only the production of low budget movies would significantly lessen the companies' risk. On the other hand, they would explain why the mean cost per film of the Italian companies is particularly low, at €2.5 million. As for RAI, its variance is unchanged building up portfolios of just low budget movies, as the average standard deviation of the cheap sub-samples created is 0.68, compared to 0.67 for RAI's whole population.

### *Films with differentiated costs*

In the Italian context, the analysis provides an interesting contrast because of the limited number of very expensive films produced by the national companies, and the results obtained as for "films with similar costs". For both Cecchi Gori and Medusa the variance is reduced significantly, but to a lower extent than by aggregating low budget movies only. The outcomes of the outsider RAI show a slight increase in risk. These results are notable: because of the limited size of the Italian competitors and their incapacity to compete with the US companies, it shows that to invest in expensive films is not advantageous, as the costly productions are able neither to guarantee higher performances at the box office, nor to reduce the companies' variance. This latter observation is crucial for the Italian industry. The analysis of the US industry surprisingly answered to the fourth research question (Table 4.4) by demonstrating that the high budget films are less risky than the low budget ones. This confirms the strength of the US industry in which the production of high budget movies is encouraged by these results, because even if a \$50 million production is completely unsuccessful, on average other similarly budgeted films are not, making the companies' risk reduction

possible. For the Italian industry, in the light of the results obtained, the production of large scale films is not recommended, as no guarantee of higher performances is provided, and the related risk is on average higher than producing low budget films.

For the sake of argument, visual representation of the costs to profits/losses of the three Italian competitors mentioned in this section – *Cecchi Gori, RAI, and Medusa* – is compared to the related costs to revenue diagrams, to outline the different relationship between the variables investigated (Figures 6.27 to 6.32).

Figure 6.27 – Scatter diagram of costs to revenues: *Cecchi Gori's* whole population

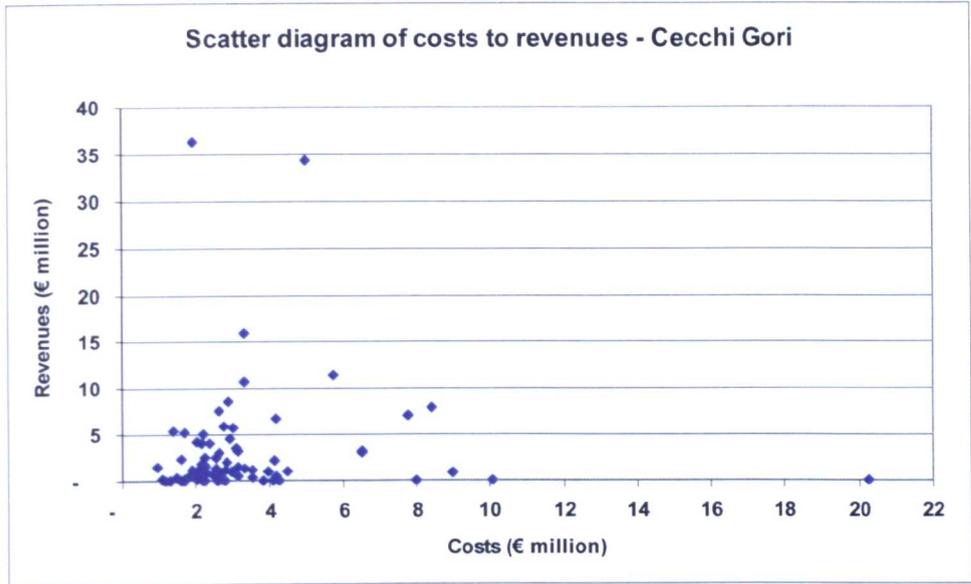


Figure 6.28 – Scatter diagram of costs to profits/losses: *Cecchi Gori's* whole population

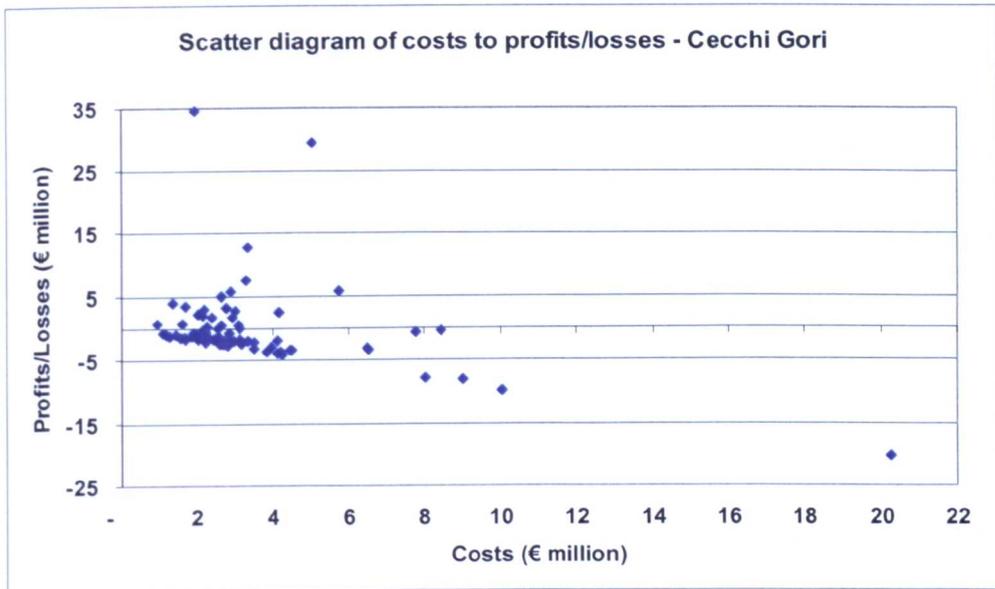


Figure 6.29 – Scatter diagram of costs to revenues: *RAI*'s whole population

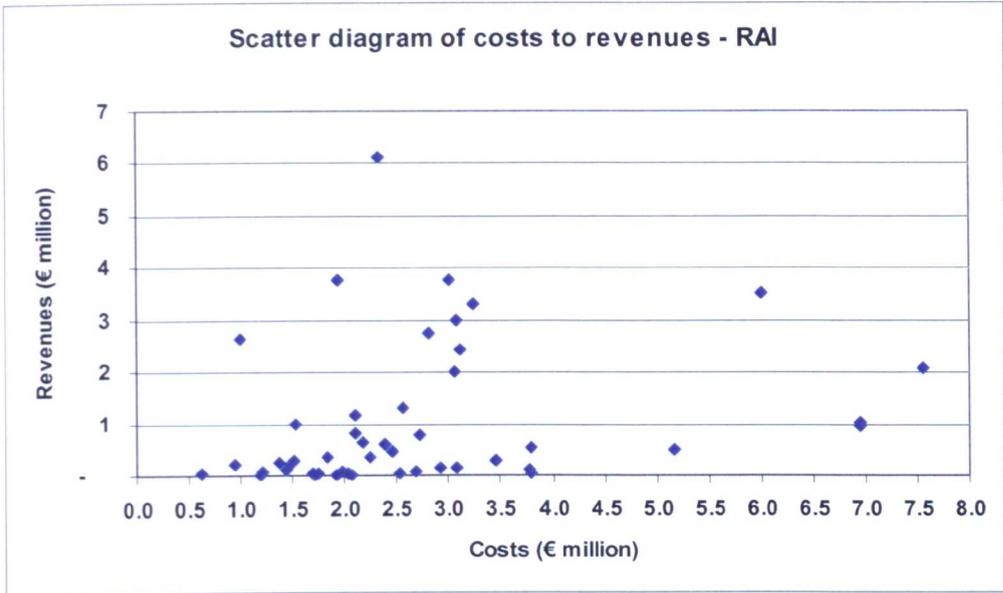


Figure 6.30 – Scatter diagram of costs to profits/losses: *RAI*'s whole population

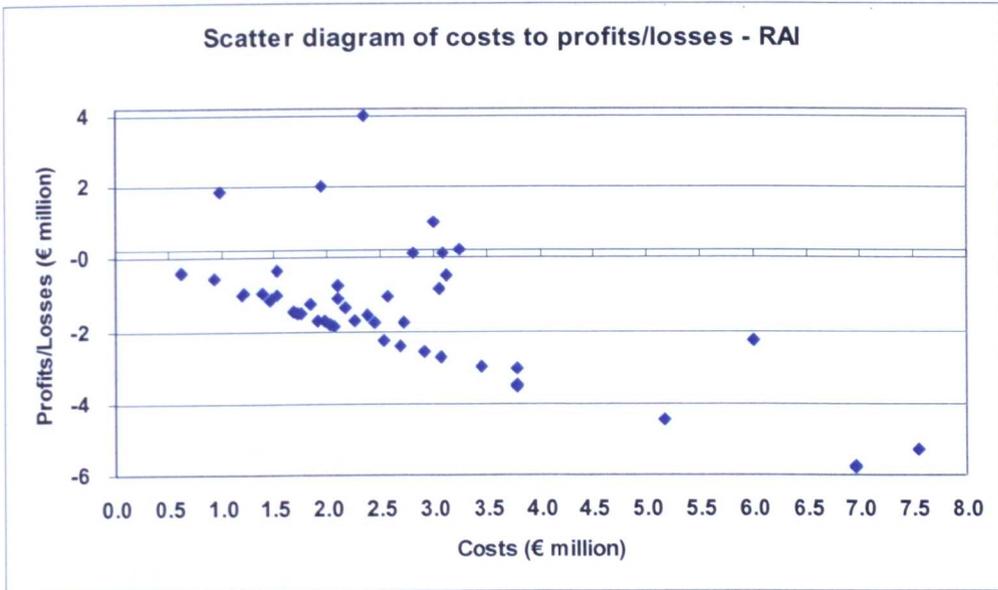


Figure 6.31 – Scatter diagram of costs to revenues: *Medusa's* whole population

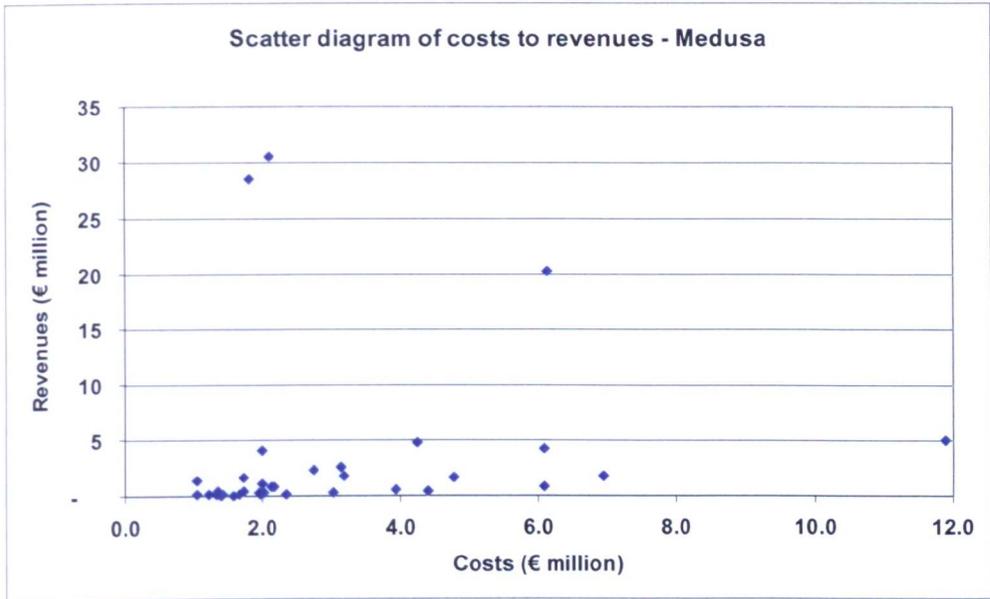
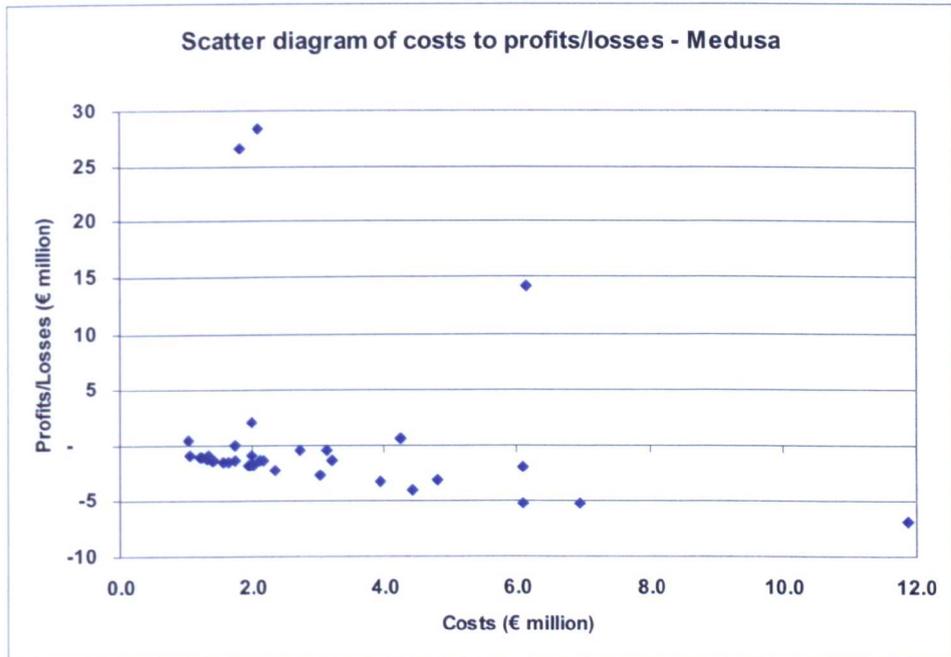


Figure 6.32 – Scatter diagram of costs to profits/losses: *Medusa's* whole population



## **6.4 Risk and return patterns**

The results obtained for the previous research questions allow a further question to be answered, as explained in the methodology chapter (chapter 4, Table 4.5): can a common pattern of risk and return trade-of behaviour be identified in the two contexts, US an Italian?

Based on these results, it can be asserted that some common features for the industry can be identified, irrespective of the efficient/inefficient market aspects taken into consideration. First, it is possible to recognize indisputably that whatever market is analysed, as production budgets increase, revenues increase as well. Moreover, as the production costs increase, the scatter density diminishes considerably of course, because the majority of films falls into the first decile cost groupings. Second, in both contexts the relationship between costs and rates of return is completely haphazard, resulting in a completely random and unpredictable scenario, which makes the analysis of the market performance of past films – in terms of costs and rates of return – not helpful for predicting the likely results obtainable from the new films screened.

However, despite these common points, regardless of the specific reference market considered and economic performances observed, a very different pattern of risk and return trade-off behaviour is identified in the two datasets. The key descriptive statistics outline the Italian context as one distinguished by high variance, just as the US market, but with a completely unsatisfactory level of profitability – in contrast to the high generation of cash flows in the American context. To exemplify, few results from the empirical analysis are adequately exhaustive: a Hollywood production generates on average about \$25 million of box office takings in its domestic market, against only €1.5

million produced by an Italian movie in its national cinemas. This corresponds, respectively, to a positive mean rate of return of about +29 per cent against one negative of -39 per cent. This enormous difference between the box office performances must be compared to the results concerning risk. Both the contexts are in fact extremely volatile, due to the high variance values observed both for revenue and rates of return frequency distributions. In addition, in both contexts, the distributions are right-skewed, confirming that the mean revenue/rate of return “overrates” the individual revenue/rate of return of most films composing the population, which are placed in the left of the distribution.

Therefore, these results paint two different pictures, which make it possible to answer unambiguously the research question posed. On the one hand, both the US and Italian film industries are very risky and unpredictable, as distinguished by high levels of variance. On the other hand, this high variance is offset by the considerable economic success that Hollywood movies achieve at the box office, while it is not counterbalanced in Italy, whose productions – in spite of the lower production budgets to be covered – generate heavy losses to be added to the steady risk that shapes their business.

## ***State support***

### **6.5 Justification of state support**

Why is state support for the film industry justified in the case of Italy and not in the case of the US? This introductory question was posed (Table 4.6) to stress the different conduct of the US and Italy – and more generally the European countries – as for the necessity to support financially the film industry. This required qualitative answers through documentation investigation. This has been widely carried out throughout the thesis by stressing the “European cultural approach” vs. the “US business approach” to the industry. Extensive analyses of these issues are conducted in chapter 3<sup>78</sup>, and are further deepened in the Data Chapter (see chapter 5.1). Refer to these sections for further discussion.

### **6.6 Financial effectiveness of Italian State support**

As explained in the methodology chapter (see Table 4.7) a profitability analysis of all the films analysed in the dataset of the Italian market has been conducted, evaluating the impact of public subsidy as an instrument to bridge the financial shortfalls of the companies involved in the industry. The results of the annual analysis carried out on the subsidised films are shown in Table 6.9. The following Table 6.10 exhibits the financial performance of the non-subsidised films. The acronym RoR stands for the rate of return generated by the films analysed.

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<sup>78</sup> See chapter 3, sections: “Technical focus on Subsidy”, and “Empirical Literature Public policies and subsidies”.

Table 6.9 – Profitability analysis of the subsidised films

Year	Subsidised films	Total number of films	% of films subsidised	Box office revenues	Total cost	Public Subsidy	Net cost	Total RoR	Net RoR
1995	13	54	24.07	5,744,793	29,854,799	10,711,066	19,143,733	- 80.76	- 69.99
1996	17	56	30.36	6,198,865	29,682,059	14,352,994	15,329,065	- 79.12	- 59.56
1997	13	66	19.70	5,565,301	21,085,495	8,934,311	12,151,184	- 73.61	- 54.20
1998	11	59	18.64	9,899,387	33,628,855	16,071,228	17,557,627	- 70.56	- 43.62
1999	16	75	21.33	3,686,625	35,939,660	14,905,518	21,034,142	- 89.74	- 82.47
2000	10	50	20.00	5,227,105	18,522,111	10,859,926	7,662,185	- 71.78	- 31.78
2001	20	72	27.78	9,877,491	54,797,227	19,668,615	35,128,612	- 81.97	- 71.88
2002	12	68	17.65	1,616,991	19,647,866	8,996,861	10,651,005	- 91.77	- 84.82
2003	19	66	28.79	10,090,803	50,379,694	22,549,458	27,830,236	- 79.97	- 63.74
Total	131	566	23.14	57,907,361	293,537,766	127,049,977	166,487,789	- 80.27	- 65.22

Notes: Based on the Italian dataset of 566 films, 131 films are included in this Table, referring to those movies which received a public subsidy to be produced. The net cost is the cost actually supported by the companies for each film – as the difference between the total production cost of film and the public funding obtained.

Table 6.10 – Profitability analysis of the non-subsidised films

Year	Not Subsidised films	Total number of films	% of not subsidised films	Box office revenues	Total cost	RoR
1995	41	54	75.93	76,655,785	79,093,699	-3.1%
1996	39	56	69.64	101,632,814	99,797,168	1.8%
1997	53	66	80.30	147,409,949	110,955,908	32.9%
1998	48	59	81.36	98,137,329	118,009,493	-16.8%
1999	59	75	78.67	66,535,406	168,448,585	-60.5%
2000	40	50	80.00	59,374,934	79,982,476	-25.8%
2001	52	72	72.22	84,087,760	125,259,164	-32.9%
2002	56	68	82.35	101,339,175	206,938,975	-51.0%
2003	47	66	71.21	74,568,721	141,187,601	-47.2%
Total	435	566	76.86	809,741,873	1,129,673,069	-28.3%

Notes: Based on the Italian dataset of 566 films, 435 films are included in this Table, referring to those movies which did not receive a public subsidy to be produced.

Taking as a starting point the 566 films constituting the dataset subdivided into annual populations, a further annual population dataset has been set up, made up of those films that obtained a public subsidy contribution to their production (Table 6.9). This operation resulted in a dataset of 131 films, equal to 23.1 per cent of the initial population of 566 films. It must be stressed that the raw database source contained more

than 131 films that received a public subsidy. However, to keep homogeneity with the analysis conducted, only the films belonging to the dataset of 566 films, which comprises those productions whose revenues and costs are completely reliable in statistical terms, are examined. The box offices revenues and the costs of the 131 films have been analysed to determine their profitability. The total cost and the amount of the public subsidy granted by the State has been taken into consideration, from which the net cost actually supported by the companies for each film has been calculated. The films, with their costs and revenues, have been aggregated into annual populations, to provide annual results.

The outcomes show that although the public subsidy reduces the financial burden of production on the companies, it is still far from adequate to assure them positive returns, because of their constant unimpressive performances at the box office. In fact, considering the overall results concerning the 131 films, it can be seen that the State heavily contributes to support the €293.5 million of total production costs, granting almost half of these financial resources. The amount of public subsidy<sup>79</sup> is equal to €127 million, disencumbering the companies of a considerable share of production costs. In spite of that, the profitability indicators are negative, even though improved, because of the inadequacy of box office revenues achieved by the 131 films. Since these films register at the box office only €57.9 million in total, each of them records on average only €442,000 as revenues, making any public effort to support the industry's profitability useless. Further, only 14 out of the 131 films become profitable as a consequence of the public intervention, and among these 14 only three were profitable

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<sup>79</sup> The figures shown are the result of a suitable financial process that takes the financial value of money into account.

net of the subsidy. Table 6.11 shows their different rate of return performances, underlining the different values obtained respectively taking into account, or not, the financial aid in the calculations.

Table 6.11 – Profitability analysis of the profitable films as a result of the subsidy regime

	No. Films	Box office revenues	Costs	Subsidy	Cost net of subsidy	Gross mean RoR	Mean RoR net of subsidy
Films profitable because of subsidy	14	22,884,458	27,532,139	15,082,926	12,449,213	-16.9%	83.8%
Films profitable even without subsidy	3	6,590,039	3,551,482	2,937,406	614,076	85.6%	973.2%

*Notes:* Based on the Italian dataset of 566 films, the 131 subsidised films of Table 6.9 are analysed.

Furthermore, it can be seen that the films made with a subsidy correspond to the least successful in terms of the financial performance of the initial dataset of 566 films, as the annual rates of return registered are extremely negative. In fact, looking at Table 6.10, although the 435 non-subsidised films are not profitable on average, the negative mean rate of return registered is not as burdensome as that of the subsidised films. The non-subsidised films record about €800 million as revenues at the box office with €1.130 million costs, equal to a rate of return of -29.3 per cent. The performance of the 131 subsidised films varies from -65.2 to -80.3 per cent, depending on the input of the costs net of subsidy.

In that light the subsidy is neither an efficient nor an ideal instrument to back the industry. It still represents the most practical and concrete means of assuring the survival of many entrepreneurs whose activities would be jeopardized if they were left alone in the markets. The state support does not contribute effectively to spreading and

improving cultural identity, since the empirical results prove that the increase in number of filmgoers able to capture the messages of a given film as a consequence of a public subsidy is negligible.

## **6.7 Discussion about state support results**

### **6.7.1 Kinds of firms that resort to public aid**

This issue is particularly significant, as the thesis demonstrates that the films made with a subsidy correspond to the least successful productions in terms of the economic performance, as the annual rates of return registered are extremely negative (see Table 6.9). It would appear that the few films that capture respectable markets shares and are profitable (also because of the secondary markets) are usually those that do not resort to the subsidy regime. According to this perspective, the subsidy works some sort of redistribution effect, allocating funds to those productions that would not have any opportunity to keep themselves afloat, to the detriment of those productions that have more potentiality to achieve positive performances at the box office. Therefore, the subsidy is neither an efficient nor an ideal instrument to back the industry.

The point that it can be emphasised is that Italian and European “cultural approach” gave rise over the years to a “vicious circle” that permitted many producers – the “free riders” – to exploit “hit-and-run” tactics: to enter the market, obtain the public subsidy, and leave the market, nearly always without making any other productions. Permissiveness towards this kind of behaviour in the name of the “cultural good”

approach has devastated the Italian industry, generating the extremely negative economic results pointed out in the Tables exhibited. The public subsidy in Italy over the years investigated seems to be only window dressing, making possible the multitude of free rider competitors who have excessively increased the number of annual productions at the expense of more deserving companies, which are, among other things, those that rarely resort to public aid. Without the theoretical studies conducted in this thesis some of the results could appear hardly understandable. On the light of what extensively found in the “Data Chapter” about the Italian public regime in the time span investigated (See chapter 5.1.1), it emerged that through the “Guarantee Fund” the State took on a considerable share of the funds assigned, in case the films were not successful in commercial terms, by putting aside a provision equal to 70 per cent of the financing given. By doing this, the State has tried to foster and facilitate the production of “high quality” films of cultural interest, even by minor companies. However, the clear evidence supported by empirical analyses conducted in this work is that these public resources often become ‘moral hazard’ *sunk costs* for the State, since the producers were not required to repay them, so they could be lax with the subsidies. The results reached and shown in Tables 6.9, 6.10, and 6.11 constitute solid proof of this inefficient allocation process of resources.

### **6.7.2 How to work out a new framework to deal with the issue of subsidies**

The last research question (see Table 4.9) constitutes the basis for the next chapter, aimed to provide a more efficient system to finance, manage and stimulate the Italian

film industry, also by a thorough investigation of the regulatory reforms carried out as from the first year subsequent the time horizon analysed in the work.

The conclusion of this work of research is that a new outlook for the Italian industry – which can be generalised to the larger European industry as well – must be represented by a new cultural model aimed not at blaming the public subsidy (which must continue to be an important instrument to fund the sector), but at making film producers financially responsible, granting them monetary support according to respect for market rules. The film projects submitted for financial aid must be based on a business model that conforms to the new rules, superseding the charity logic ethos that has bedevilled subsidy policy hitherto. This prospect will be likely to reward those productions that can combine the preservation of the cultural heritage with a sustainable economic and financial performance.

The new chapter will approach this question, and the main policy implications arising from the empirical results obtained and explained in this chapter, also in the light of the regulatory reforms carried out in the years following the time horizon analysed.

**7**

# **Policy Implications**

## **7.1 Introduction**

The empirical analyses conducted presented in the previous chapter gave food for thought, particularly in terms of the policy implications arising from them to improve the present state of affairs of the Italian film industry. The results of the thesis show that a patronising approach, structurally based on public intervention, lies at the bottom of most of the unsatisfactory outcomes that the Italian film industry has recorded over the years investigated, especially when compared to the US.

Thus, while it can be claimed that the subsidy regime still represents an essential instrument to guarantee the existence of the film industry the analyses conducted signifies that the subsidy regime by itself is not able to assure the development of the industry, and that it is necessary to make room for innovative financial models, built on those distinctive features of the industry capable of raising new substantial sources of finance. It is argued that the subsidy regime should not constitute the financial mainstay of the national film industry, but rather complement a new financial approach based on access to financial markets rather than public funds, grounded in the specific securities that each film as a commodity can assure.

The results obtained in chapter 6 and policy implications presented in this chapter are contextualised on the 1995-2003 period, and the regulatory framework in force at that time. This legislative setting has been widely described for the purpose of this research work in chapter 5.1. Since then important regulatory reforms regulatory reforms have been introduced, changing the basis of public funding of films in a way that is congruent to the findings of this thesis. The impact of these reforms will become the subject of a future study.

Nevertheless, it is important to show how the new regulatory framework, in force since 2005, works, and addresses the suggestions for reform made in this work.

## **7.2 The new regulatory framework**

Two waves of reform of the Italian film industry have occurred recently. The first reform came about in 2004 and 2005, coming into effect in 2005 and 2006, and the second one is dated 2007. The main changes with these regulatory changes – for the purposes of this work – are presented in the following sections.

### **7.2.1 The 2004/2005 reform**

In this section, the subsidy regime that came into effect in Italy in 2005/2006 according to the D.M. (Decreto Ministeriale/Ministerial Decree) of 27 September 2004, partially amended with the Decree dated 3<sup>rd</sup> October 2005, is analysed in brief.<sup>80</sup> It must be stressed that only the essential legal contents of all the regulations mentioned will be touched upon, as an analysis of the legislative ‘small print’ details is not the objective of this work. Studying the act, one can infer that two main distinguishing features are required by the Italian state to consider a film worthy of financial support: (a) its national identity, and (b) its potentiality in terms of the diffusion of cultural interest. In fact, the aspirant companies aiming to obtain the subsidy “must declare that the film they are going to make is either a nationally produced film or a film of cultural

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<sup>80</sup> This Ministerial Decree is also known as “Legge Urbani” (Urbani Act). Giuliano Urbani was the Minister in charge of the Ministry for the Cultural Heritage in 2004.

interest”.<sup>81</sup> According to the specific characteristics of the films, different subsidy thresholds are provided for, as summarised in the following table:

Table 7.1– Subsidy threshold for Italian film productions – 2004/2005 Reform

<i>Values in euros</i>	Maximum % on acceptable cost	Maximum acceptable cost	
Nationally produced films	70%	5,000,000 <sup>1</sup>	
Feature films distinguished by cultural interest	50%	3,500,000 <sup>2</sup>	5,000,000 <sup>1</sup>
Co-produced films <sup>3</sup>	70%	5,000,000	
	50% <sup>4</sup>	3,500,000 <sup>4</sup>	5,000,000 <sup>4</sup>
First and second works	90%	1,500,000	
Short films distinguished by cultural interest <sup>5</sup>	100%	40,000	

Source: Decree dated 3 October 2005, to amend the Ministerial Decree dated 27 September 2004

Notes:

<sup>1</sup> On the so-called "industrial cost", that includes: production cost, production cost of first copy, overhead expenses, distribution cost (From now only "industrial cost")

<sup>2</sup> Through a three-year loan. See D.M. 27 September 2004, Chap.1, section 2, Par.7, a) and b)

<sup>3</sup> They refer to: 1) overall industrial cost if the Italian companies' share: = or > 60% of production cost  
2) industrial cost of the Italian company if Italian share: < 60%

<sup>4</sup> If the co-production is distinguished by cultural interest

<sup>5</sup> Through a three-year loan.

## Reasons behind the subsidy regime

Two main qualifications are required if a film is to benefit from public aid.

### *The acknowledgment of nationally produced films*

To fulfil the first requirement, the film must belong to production, distribution, export companies with registered offices and fiscal domicile in Italy, or – according to reciprocity clauses – with base and nationality of other member countries of the European Union that have a subsidiary, branch or agencies in Italy, conducting most of their business there. As an exception, feature and short films co-produced with foreign

<sup>81</sup> Ministerial Decree 27 September 2004, chapter 1, section 1, paragraph 1, point b).

companies – according to special international reciprocity clauses – can be recognised as national films. The participation share in co-productions with countries not belonging to the European Union cannot be lower than 20 per cent of the film cost.

*The acknowledgment of films distinguished by cultural interest*

The second requirement is based on the fact that the Italian Republic acknowledges Cinema as an essential means of artistic expression, cultural education, and social communication, as examined in the Data chapter.<sup>82</sup>

Table 7.2 – Weight of a film’s key variables to satisfy the criteria of cultural interest

Ref. Code	Parameter	Threshold Value	Score
<b>A</b>	<b>Director's artistic contribution</b>		<b>70</b>
A1	Awards won by the director for direction or best film	1	20
A2	Contribution of films directed by the applying director to festivals, or nominations as award finalist for direction or best film	1	10
A3	Number of films directed by the applying director with box-office revenues greater than €800,000 in the last ten years	2	10
A4	Awards won for best acting by main actors of the cast selected by the applying director	1	20
A5	Nominations for best acting by main actors of the cast selected by the applying director	1	10
<b>B</b>	<b>Screenwriter</b>		<b>20</b>
B1	Awards won by the screenwriter for screenplay	1	15
B2	Screenwriter's nominations as finalist in awards for screenplay	1	5
<b>C</b>	<b>Screenplay</b>		<b>10</b>
C1	Screenplay drawn from a work of literature	Yes	5
C2	Original screenplays	Yes	5

Source: Ministerial Decree dated 27<sup>th</sup> September 2004, Table A

The law establishes precise criteria to identify the cultural interest of films, and rank them in a classification to benefit from subsidies. Four variables are weighted to set the cultural interest of each film. They are concisely stated as follows:

<sup>82</sup> See chapter 5.1.1, and footnote 1 chapter 5. This principle is also strengthened by Article 1, paragraph 1, D.Lgs. (Order in Council) 22<sup>nd</sup> January 2004, n.28.

- a) artistic quality, considered as the value of the story and screenplay of the film, with regard to the different film genres. Weight on total score: 35 per cent;
- b) technical quality, taken as the value of technical and technological components of the film. Weight on total score: 10 per cent;
- c) consistency of artistic and production components with the film project, considered as quality, comprehensiveness and feasibility of the project. Weight on total score: 15 per cent;
- d) quality of the director's and screenwriter's artistic support, as well as valuation of the screenplay, with particular regard to their films whose social and cultural relevance has been acknowledged, and films for children, or drawn from works of literature. Weight on total score: 40 per cent.

### **7.2.2 The new regulations introduced in 2007**

The information provided hereafter is the result of public record analysis and unstructured interviews at the various offices of the Direzione Generale per il Cinema (from now on, DGC), Cinecittà Holding and Ministry of Cultural Heritage. The subsidy regime in force refers to the D.M. (Ministerial Decree) of 12 April 2007, promulgated by the Official Gazette on the 30 May 2007, concerning the “technical modalities to support the film production and distribution”. These new regulations complete the 2004/2005 regulatory framework analysed in the previous section, and constitute a step forward in moving from the concept of “financing” (*finanziamento*) to that of “contribution” (*contributo*) to films.

The key innovation provided for the State is the possibility to share the business risk with the film companies through a contribution rather than assigning them a subsidy in the shape of classical financing.<sup>83</sup> As a result, the Ministry for Cultural Heritage, on the behalf of the State, is given – as a guarantee – possessory title of a share of the revenues of the film supported. This share corresponds to the ratio between the total contribution granted and the industrial cost of the film.<sup>84</sup> The contribution granted can be used only to cover the industrial cost. The film company can take advantage of the economic benefits arising from the revenues referring to the share given as a guarantee, to pay the respective incomes due to the State, that is – the dividends from its shareholding and/or the reimbursement of the value of its shareholding (its ‘contribution’) to the industrial cost. Once the net incomes have covered the industrial cost of the film, the State is the beneficiary of its participating share in that film, having acted as a sort of co-partner in the production.

Through an annual audit, the banking company responsible – *Artigiancassa BNL* – transmits to DGC the amount of the incomes due to the State.<sup>85</sup>

- In the case that the incomes generated are less than 30 per cent of the total financial contributions given over a five-year old period (as from the data of first allocation of the contributions themselves), the possessory quote temporarily allocated as a guarantee to the State is permanently transferred to the Ministry of

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<sup>83</sup> The legal consequences of this change are explained in the paragraph “7.2.5 Free riding phenomena? Data about previous outstanding financing”.

<sup>84</sup> The term “industrial cost” stands for production cost, production cost of first copy, overhead expenses, distribution cost of the film, as defined at the Article 3 of Decree dated 3rd October 2005, to amend the Ministerial Decree dated 27th September 2004

<sup>85</sup> Artigiancassa is a controlled company (70 per cent) of BNL Bank, with a paid-up capital of about €35 million. It is the exclusive fund manager of public financial resources addressed to Cinema, as a result of winning the competition, called by the Ministry of Cultural Heritage in 2007, for the selection of the holder of the office. Before that, the present lead manager BNL held the same office.

Cultural Heritage<sup>86</sup> – up to the extent of the sum disbursed by the State, and for not more than five years. After this time span the revenues belonging to the firm become available to the production company.

- In the case that the net incomes due to the State are at least equal to 30 per cent of the total financial contribution disbursed over a five-year period (as from the data of the first allocation of the contributions themselves), the production company will be permitted to exploit the revenues arising from the film, committing itself to pay out annually the share of incomes due to the State for not more than five years.

What are the implications arising from this new system? According to DGC's managers, the introduction of the contribution procedure has probably reduced the discretionary power in assigning funds to films, as the estimated economic margins that the film companies must assure in order to get the subsidy are raised. So, a production without an apparent ability to be commercially competitive in the market would have greater difficulties in competing for public funds. However, the unstructured interviews conducted have led to the conclusion that despite the tightening of the financial requirements, the present allocation of subsidies to companies in the words of one of the interviewees "is still quite generous, allowing money to be given also to subjects whose entrepreneurial merits are sometimes disputable".

Another difference included in the new regulations is the possibility of separating the recognition of cultural interest from obtaining the subsidy. Accordingly, a company can submit a production scenario for a film that satisfies the cultural interest criteria only,

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<sup>86</sup> In detail, it is transmitted to Cinecittà Holding S.p.A.

without competing to obtain the contribution, and marks a departure from the earlier regulatory framework.<sup>87</sup> By itself, the official recognition that a film is distinguished by cultural interest can be useful for some companies – “usually the biggest companies” – since a production that has obtained cultural interest acknowledgment can compete to receive subsidy for the distribution of the film; it can become a “*film d’essai*” (art cinema film) with the consequent benefits in terms of the distribution facility and the image presented to its target audience; and it can benefit from tax shelter arrangements to reduce taxable income, resulting in a decrease of tax to be paid.<sup>88</sup>

The “economic attitude the companies must demonstrate” that was also mentioned in the 2004 D.M. is strengthened here because, among the other requirements that must be met when the application is submitted, sound and reliable forecasts about the future financial and economic trend of the film must be demonstrated. In particular, the possibility of competing with other films is subject to the presentation of:

- a) “an analytical forecast of production costs”;
- b) “an analytical forecast of distribution costs”;
- c) “a detailed estimated financial plan”;
- d) “a plan of forecast revenue addressed to cover the industrial cost of the film”;
- e) “an analytical documentation, carried out by external auditors with a minimum of five-year professional tested experience, of the congruity of the estimated costs and the financial plan”.

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<sup>87</sup> The application can include the request to obtain the cultural interest acknowledgment only, or also the public aid conjointly (D.M. 12 April 2007, 2.1.)

<sup>88</sup> On tax shelters and the Italian film industry see: *Il Sole 24 Ore*, 18 July 2008.

### 7.2.3 Analysis trend of subsidies during the period of new reforms

Although a similar analysis to that conducted in the thesis is not feasible for the films released as from 2005 onwards (see paragraph 7.1 Introduction), it can be useful to analyse the trend of subsidies to Italian productions during this last period. All information and data are drawn from direct unstructured interviews with DGC's managers and public documentation.

As can be seen in Table 7.3, feature films and first and second works are the main recipients of a large part of the funds in F.U.S.'s allocation, which refers to resources assigned to the Italian film industry in 2006 and 2007.

Table 7.3 – Public subsidies to feature films, first and second works, short films, original scripts

Category	No.		Total subsidy		Mean subsidy	
	2006	2007	2006	2007	2006	2007
Feature films	25	36	34,500,000	34,500,000	1,380,000	958,333
First and second works	26	32	11,700,000	12,000,000	450,000	375,000
<b>Sub-Total</b>	<b>51</b>	<b>68</b>	<b>46,200,000</b>	<b>46,500,000</b>	<b>915,000</b>	<b>666,667</b>
Short films	24	28	960,000	1,080,000	40,000	38,571
Original script and others	20	20	700,000	700,000	35,000	35,000
<b>Sub-Total</b>	<b>44</b>	<b>48</b>	<b>1,660,000</b>	<b>1,780,000</b>	<b>37,727</b>	<b>37,083</b>
<b>Total</b>	<b>95</b>	<b>116</b>	<b>47,860,000</b>	<b>48,280,000</b>	<b>503,789</b>	<b>416,207</b>

Source: Official Cinema Report to Parliament, Ministry of Cultural Heritage, DGC, 2007

The funds are not dispensed in a once-a-year totality, in the same way that the subsidies of the dataset investigated in the thesis; within the year, three sessions are fixed, each being allocated one third of the annual budget assigned to the specific film category. According to the information obtained from the meetings at the DCG, twenty to thirty feature films compete on average for each session for the funds allocated in the feature film category, which received €10.2 million in 2008 for each of the three sessions (held on 31<sup>st</sup> January, 31<sup>st</sup> May, and 30<sup>th</sup> September) for a total subsidy of €30.6 million, a significant fall compared to €50 million allocated in 2004 (€12.5 million for each of the

four sessions provided for at that time).<sup>89</sup> In a similar way, the first and second works category section received 3.6 million in 2008 for each of the three sessions covered (deliberative sessions held on 15<sup>th</sup> January, 15<sup>th</sup> May, and 15<sup>th</sup> September) for a total subsidy of €10.8 million, compared to €18 million available in 2004 (€4.5 million for each of the four sessions). For short films €0.4 million was available for each of the three 2008 sessions (held in concomitance with first and second works' sessions) against €0.4 million assigned to each of the four sessions in 2004.

Table 7.4 – Public subsidies to Italian productions: 2004 vs. 2008

Values in euros	2004			2008		
	Budget per sessions	No. of annual sessions	Annual Budget	Budget per sessions	No. of annual sessions	Annual Budget
Feature films	12,500,000	4	50,000,000	10,200,000	3	30,600,000
First and second works	4,500,000	4	18,000,000	3,600,000	3	10,800,000
Short films	400,000	4	1,600,000	400,000	3	1,200,000

Source: Unstructured interviews at DCG, October/November 2008

Table 7.4 shows a clear decrease in the amount of subsidies assigned to film industry after the new reforms had come into effect. The amount and modalities of maximum contribution assignable to the different categories of films at the present time varies slightly, compared to the maximum recognised by previous 2004/2005 regulations as described in Table 7.1. In brief, the present admissible thresholds are:

- *Feature films*. They can be supported with a contribution up to 50 per cent of their industrial cost, with a maximum acceptable cost of: €5 million in the case of national production; €3.75 million if the head offices of the supported company are outside Italy; €5 million or €3.75 million for a co-production with a

<sup>89</sup> Information and data drawn from direct unstructured interviews with Dr. Ugo Baistrozzi, and Dr. Raimondo Del Tufo, October/November 2008, at DCG Office, Ministry of Cultural Heritage, Rome.

foreign company, depending on the participation share of the Italian firm (€5 million if its participation is at least 40 per cent, €3.75 million if less).

- *First and second works.* They can be backed up to 90 per cent of the maximum acceptable cost of €1.5 million.
- *Short films.* They can be supported up to 100 per cent of the maximum acceptable cost of €40.000.
- *Development projects drawn from original scripts.* Twenty projects per year can be sponsored through a contribution up to €35.000 to each project.<sup>90</sup>

This information is summarised in Table 7.5.

Table 7.5 – Contribution threshold for Italian film productions – 2007 Reform

<i>Values in euros</i>	Maximum % of acceptable cost	Maximum acceptable cost	
Feature films	50%	5,000,000*	3,750,000**
First and second works	90%	1,500,000	
Short films	100%	40,000	
Development projects from original scripts	100%	35,000 for 20 annual projects	

\* Italian companies and co-productions in which the Italian share is at least 40%

\*\* Co-productions in which the Italian share is less than 40%

Source: D.M. (Ministerial Decree) 12 April 2007, article, Section II, paragraphs 6-10.

#### 7.2.4 Possible overlapping interests

It must be noted that – as a result of the regulatory changes made in 2004/2005 and 2007 – the financial support of an Italian film by the funds managed by DGC depends now on two main steps of assessment, which involve, respectively, the subjective and objective components.

<sup>90</sup> D.M. 12 April 2007, article, Section II, paragraphs 6-10.

The Advisory Committee's assessment weights 60 per cent on the final score, which results in a first ranking from which the assessed films will be selected. This assessment represents the subjective criterion – which has often been brought into question and which is at the origin of the debate on conflict of interest (also see chapter 5.1 on this matter).

The *reference system* is the new criterion in force from 2005, which is formulated to represent the objective component of the evaluative procedure.<sup>91</sup> It weights 40 per cent on the final score. What unbiased requirements does this system introduce to give a more fair assessment of claimant films? Three key 'track record' parameters are considered:

a) *Film quality*. It can be assessed as a result of:

- participation of films in the screening procedure and official programmes of major internationally cinema festivals; or participation as “best film”, “best direction”, “best original script”, “best first work”, and “best producers” for some internationally recognised award contests over the last five years.<sup>92</sup>
- Winning of awards such as “best film”, “best direction”, “best original script”, “best first work”, and “best producers” referring to the award contests of previous point, over the last ten years.

b) *Corporate stability*. It can be assessed as a result of:

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<sup>91</sup> The D.M. 27 September 2004 “Definizione degli indicatori, e dei rispettivi valori, per l'iscrizione delle imprese di produzione cinematografica nell'elenco di cui all'art. 3, comma 1, del D. Lgs. 22 January 2004, n. 28, e successive modificazioni” regulates the objective assessment of the procedure. Dating from 2004, it came into force in the year after the last year of the dataset constructed, whose subsidised films have not been subjected to this new system. On the reference system, see: Rapporto sul mercato cinematografico italiano (“Report on the Italian Film Market”), Cinecittà Holding, Osservatorio Italiano dell'Audiovisivo (“Italian Audiovisual Observatory”), 2004.

<sup>92</sup> Both the cinema festivals and award contests considered refer to D.M. 27 September 2004, Article 3, paragraph A1.

- number of operating business years, as from the production year of the first film;
- number of films produced and theatrically released;
- company market value in terms of capital share;
- amount of subsidies paid back to the State, if the applicant company had obtained them in the past.

c) *Business outcomes*. It can be assessed as a result of:

- mean box office revenues obtained by films produced;
- total box office revenues obtained by films produced;
- revenues generated outside Italy.

The reference time span is represented by the five years preceding the date of the subsidy application. The variables considered for the three points analysed (film quality, corporate stability, and business outcome) weigh differently in the computation of the final score of 100 for the reference system assessment, as shown in Table 7.6. This score is then considered together with the subjective assessment (60 per cent of the final score, as described above) given by the Committee, and counts for 40 per cent of the final score.

Table 7.6 – Parameters and weighting within the “reference system” assessment

Code	Parametres	Threshold Value	Weight
<b>A</b>	<b>Film quality</b>		<b>40</b>
	Participation in film festivals, and awards		15
A1	Competitions in the last 5 years		25
A2	Award achievement in the last 10 years		
<b>B</b>	<b>Corporate stability</b>		<b>30</b>
B1	No. of years in business	5 or more years	7.5
B2	No. of films produced	3 or more films in the last 5 years, or 7 films since company's foundation	7.5
B3	Share capital	Equal to, or greater than 50,000 euros	5
B4	Subsidies paid back		10
<b>C</b>	<b>Business outcomes</b>		<b>30</b>
C1	Mean box office revenues	Greater than 500,000 euros	15
C2	Total box office revenues	Greater than 2,500,000 euros	10
C3	Revenues outside Italy	In more than 10 countries	5
<b>Total score</b>			<b>100</b>

Source: D.M. (Ministerial Decree) 27 September 2004

What are the policy implications of this change? Does this new procedure – based on subjective and objective assessment – really result in a fair money allocation to film producers?

The new regime makes it more difficult “to cheat”, because statistics have shown that when a film scores strongly on the objective criteria of the “reference system” it will be highly likely to rank in the final selection of productions that are granted financial aid. This statistical association also happens when a competing film with low objective requirements receives a markedly positive subjective assessment from the Committee. In practical terms, since very few films reach a score close to 40 on the reference system, and very few films reach a score close to 0 on the Committee’s assessment, the new dual system “at most can further favour productions that already have strong objective scores, but rarely hinders productions that satisfy fewer objective parameters, but have obtained a very positive report from the Committee”.<sup>93</sup> Based on conclusions that can be drawn from public documentation and interviews, it can be stated that the

<sup>93</sup> Interview to Ugo Baistrocchi, October 2008.

present regime in force seems to be *quite fair*, but essentially a production is evaluated as a *project in its entirety* – which also considers variables referring to the company as a whole, the staff of the production, and its financial perspectives – rather than just as a film itself. Nevertheless, the objectivity improvement reached by this dual system can still be disputed, because high scores in the reference system are not necessarily indicators of potential quality films; also, high scores in the subjective assessment can always be brought into question for the reasons already mentioned.

An example of how this procedure has worked in the past and tried to assure fairness to the process can be provided through examination of public records belonging to the Ministry of Cultural Heritage, Cinema Section, in 2005. At that time, Giorgio Diritti was an unknown and promising director producing his first feature film “*Il Vento fa il suo giro*” (“*The Wind Blows Round*”). The score this director attained on the reference system when applying for subsidy was close to 0, as he was “a novice among the old hands”. However, the Film Committee registered an extremely high vote – close to 60 – for the subjective assessment for this film.<sup>94</sup> Through the combination of objective and subjective assessment the film was not able to get a sufficient score to receive the subsidy. After advice from DCG’s managers, the director replaced one of the unknown main characters with another actor, who had already achieved an award. Thanks to that, this film improved its score in the “reference system” component and obtained the subsidy, while a film to be directed by a much more renowned director, the 85 year-old Carlo Lizzani – whose score on the objective assessment was extremely high due to the

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<sup>94</sup> In confirmation of the sensible judgment of the Commission to support the film because of its quality, it can be mentioned that some months later, once the movie was already screened in the theatres, different positive reviews confirmed the validity of the production, so indirectly justifying the favourable opinion of the Commission that disbursed the subsidy. Among others, see: <http://www.mymovies.it/dizionario/recensione.asp?id=44377>

numerous awards obtained and quality films directed in the past – did not succeed for a subsidy since the subjective feedback from the Committee on his film was modest.

On the other hand, some argue that despite the new regulations the low transparency of final selection is anyway still clearly provable. An example could be the cultural interest award achieved by the 2008 comic film “*No problem*”, directed by the very famous comic performer Vincenzo Salemme. According to some critics such a film would never have been recognised as a “cultural film” if directed by other artists, less famous than Salemme. In a way, according to these opponents, the Committee would try to be as fair as possible, but could not avoid – unconsciously or not – favouring some productions to the detriment of some others. Despite that, it has been stated that “subjective phenomena can sometimes exist, but never preconceived preferential actions in favour or against someone”.<sup>95</sup>

It seems as if the new regulatory reforms have made appreciable modifications in the right direction, but it is still a long way, and additional intervention must be made to change the course of Italian Cinema organisation.

### **7.2.5 Free riding phenomena? Data about previous outstanding financing**

The variation in the regulatory framework that occurred in 2007 allows a further critical assessment to be made, which involves policy implications.

The reform is significant under two aspects. First, the shift from “financing” to “contributing” to companies, and second, the turning over of a new leaf on the issue of previous outstanding financing not yet repaid.

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<sup>95</sup> Interviews to R. Del Tufo, DCG, and U. Baistrocchi, DCG, October and November 2008.

As to the first aspect, before the 2007 reform the subsidies granted to companies legally belonged to the “loan contract” institutes, with juridical obligations arising from this private legal agreement. In theory, this contract provided for the repayment of the sum given, added to the accrued interests. In practice, as the repayments were made with the cash flows generated from the films, and because of the perpetual tendency to finance particularly cultural products – despite their modest commercial prospects – hardly any of the subsidies granted were repaid. Indeed, a tacit practice developed in which the Ministry for Cultural Heritage informally accepted that films recognised as “cultural products” could return the subsidy obtained “up to a certain proportion”, with the result that free riding phenomena could be intentionally or unintentionally produced.

The introduction of the “contribution” system provided for in D.M. 2007 replaces obligations linked to the private law contract, and makes the State “a co-partner” in the specific project aided, sharing the risks and the economic benefits. Although this cannot be postulated in legal terms, the State participates in film production as a sort of “institutional shareholder”. Even though the new system of contributions would seem to reduce the “margin for error” in supporting non-deserving productions, evidence shows that “also through the present regime the State is often very generous, granting money to some productions that maybe are not so meritorious.”

The second aspect of the reform concerned the treatment of previous outstanding financing that had not been repaid by firms. The reform formalises the modality of the repayment of financing allocated up to 31<sup>st</sup> December 2006 as follows: in the case that the company pays according to that which is indicated in Table 7.7, it still remains

owner of 100 per cent of film's royalties and related economic rights.<sup>96</sup> Otherwise, the State automatically becomes the owner of the film's royalties and related economic rights – as a guarantee – up to the complete debt extinction by the firm. Specifically, the extinction procedure is carried out by Cinecittà Holding S.p.A. on behalf of the Italian State.

However, according to the data obtained from DGC's managers, the bulk of film companies have not paid the residual amounts due after the introduction of the new arrangements, thus by default bequeathing the royalties of their films to Cinecittà Holding S.p.A. In this way, they have proved "the low commitment that most of the subsidised producers had in the works released".<sup>97</sup> From another perspective, the regularization of previous outstanding financing "gave rise to distorted effects for smaller companies, as most of them – whether financially responsible or not – could not afford the residual payment necessary to transfer the film's royalties from the State, even if they had regularly repaid in the past some of the subsidies obtained".<sup>98</sup> Inevitably all their films have fallen into Cinecittà Holding's hands, while bigger competitors, such as RAI, could pay the amount required to redeem important productions, so enriching their own corporate libraries.

Table 7.7 summarises the shares provided for the reform that the companies must pay to extinguish their debt position to acquire full ownership of the royalties and related rights of a work.

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<sup>96</sup> Ministerial Decree dated 12 April 2007, article 20, comma 2, enclosed table B.

<sup>97</sup> Interview to R. Del Tufo, DGC, October-November 2008.

<sup>98</sup> Interview to U. Baistrocchi, DGC, October-November 2008.

**Table 7.7 – Previous outstanding financing and shares of debt to pay – 2007 Reform**

Amount of debt already repaid	Amount companies must pay to extinguish their debt
Between 0 and 30%	20% of residual debt up to 30% of subsidy
	<i>plus</i>
	10% of the amount between 30% and 60% of subsidy
Between 30% and 60%	<i>plus</i>
	5% of the amount between 60% and 100% of subsidy
	10% of residual debt up to 60% of subsidy
Between 60% and 99%	<i>plus</i>
	5% of the amount between 60% and 100% of subsidy
	5% of residual debt up to 100% of subsidy

Source: D.M. (Ministerial Decree) 12 April 2007, article 20, comma 2, enclosed Table B.

### **7.3 Towards a new model**

The necessity of the subsidy system to reorient the market disequilibrium and modify the risk environment of the industry has been discussed in the previous sections. However, it has been proved that reliance on state financing to support the film industry is a short-sighted strategy if it is not adequately thought through (Lange, Wescott, 2004). The upholders of the competitive free market claim that the subsidy system necessarily brings about market inefficiencies and cost increase in the films, as it would generate dependency on the state, decreasing the companies' sense of responsibility in the production budget management (Edward, 1994). The point upheld by this theory is that the companies would act as free riders (Cornes, Sandler, 1996), since they would not have any incentive to keep the costs down, because they can be covered by the public financing anyway. This thought finds partial confirmation in the Italian market according to the studies conducted and results reported in chapter 6 concerning two main variables:

- The annual populations in the Italian context amount to about 115 films. This number of films is considerable compared to that of films produced in EU as a whole, especially considering the low weight of the Italian industry in terms of attendances observed in the theatres, and the limited number of screens installed in the country (see Table 2.4, Table 2.6, and Figure 2.12, Chapter 2). The number of films produced is also proportionally high if compared to the US population.
- The difference between the estimated production budgets and the real final production budgets is often considerable, therefore giving credence to the theory

that public financing relieves the managers of responsibilities, permitting, even encouraging, an indulgence in costs that would be avoided without the certainty of state aid.<sup>99</sup> This is an example of the phenomenon known to insurance companies as ‘moral hazard’.

In the light of the pros and cons pointed out, the bottom line is that the subsidy system represents in Italy, as well as most of the countries competing with the US, the most practical tool to permit the survival of the national industries, which would be overwhelmed by US productions if left alone to deal with market forces. Indisputable evidence to support this point of view is the different mean production cost invested by the companies belonging to the different contexts: a US company allocates about \$65 million to produce a film, while an Italian company assigns on average a sum just equal to \$5 million, with similar values for other European companies, apart from those of the UK (see Figure 2.9, Chapter 2). These data by themselves express the stark contrast between the financial opportunities in the two contexts. Consequently, a new model of subsidy – in line with new regulatory framework outlined in the previous section – is advisable, reconceived according to the following main principles:

- The subsidy has to be accepted as an irreplaceable instrument to finance the sector. However, the filmmakers applying for a subsidy must prove their own business attitudes and commercial abilities, by complying with the reference system requirements provided for in the reforms examined in the previous sections. The aim is to go beyond the merely charity logic in terms of which the subsidy policy in Italy (and in other countries) is often perceived. This prospect would be likely to reward those productions able to mix a potential to preserve the cultural heritage with the

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<sup>99</sup> Source: Interviews with Cinecittà, ’s executives 2006-2008.

pursuit of a sustainable financial activity. Two benefits become obvious as an answer to the two claims of the free market scholars mentioned at the beginning of this paragraph.

- The revised scrutinising process would result in a decrease in the number of films produced annually. The presence of free riding producers concerned only to take advantage of public financing would be considerably reduced, if not entirely eliminated. In this connection, it is important to recall that the empirical analysis of the years 1995-2003 revealed that in the Italian market 54.9 per cent of Italian films were released by 111 companies that recorded only 26.5 per cent of the total revenue (Chapter 5.3.1, Table 5.9 and related text). This would imply that many of the films produced by minor firms – some of which just entered the market for one or two films and then disappeared – generated substantial losses.<sup>100</sup> Such conduct could be minimised under the new regime.
- The stricter process would be likely to induce an increase in the sense of responsibility and day-to-day work discipline in the recipients of public subsidy. The final aim is to minimise the difference between the estimated production budgets and the real final production budgets, thereby improving the management efficiency of the industry and reducing moral-hazard opportunism.
- The criteria by which the Commission selects and grants the subsidies must be more objective and restrictive, and based on operationally definable parameters, the most important of which must be – as already mentioned – the ability of productions to

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<sup>100</sup> See Chapter 5, section “Italian dataset and market description”.

show own commercial potential. Thus the subsidy must represent a supplementary tool to boost a production rather than a “sunk cost” which relieves companies of financial responsibilities.

- The effective operational, not only theoretical, development of innovative financial instruments for the industry. These specific instruments must be added to, and matched in a sound way with, the subsidies. It must be emphasised that their role must be complementary rather than supplementary, because of their specific purpose. They would be private financial resources rather public and institutional financial instruments. The concept behind this new financial model is that financial instruments can be set up *ad hoc* for specific functions, according to the distinguishing features and requirements of the industry investigated, in order to lessen the investors’ perceived risk. While the subsidy system has been in force for decades, the intention should be to focus on new instruments created for the purpose in the capital markets. By making new sources of financing available, this last goal would help to reduce the difference in production costs between Italian and US companies. The crucial point is that these new financial tools must be such as to attract the lenders who – as things stand now – would not be interested in bearing the risk and return trade-off that the present industry involves (Levison, 2006).

Thus, the final objective should be represented by an answer to the evidence pointed out in the empirical and statistical chapters of this work, and that is still present in current years as from 2004: that is, to identify instruments able to reduce the industry’s and investors’ risk, in order to encourage and develop the private initiative in the industry, and decrease the financial and competitive gap towards the US.

### **Towards a project finance perspective**

The reforms introduced in 2004/2005 and 2007 have modified some of the distorted behaviours that were a major cause in determining the financial inefficiencies inherent in the subsidy. Nevertheless, a “corporate viewpoint” still prevails in the Italian context rather than a “project viewpoint”, so limiting the financing option to make additional funds available to companies and increase the average production budgets.

Hence, the present financing pattern constitutes the main obstacle to the wished for development of the Italian film industry, and the possibility of competing effectively with the industries with more advanced financial systems.<sup>101</sup> The first part of this section outlines the typical approach adopted to fund the film companies’ businesses, which is used widely in other sectors, then it suggests a different tack to develop the potential of the industry.

The authorization of credit from banks and financial institutions is essentially based on the assessment of the company’s net worth, the collaterals secured by the company or some other agents on its behalf, and the track record of its conduct towards other lenders in previous circumstances (Larr, 1994). This widespread financial pattern essentially consists in “mortgaging the company”, that will refund the amount obtained through liquidating its assets, and the collaterals at its disposal. The higher or lower quality of the specific investment financed and its expected ability to generate a given amount of cash flows is not a key variable in the financing process if the lenders have enough guarantees of repayment through the corporate variables mentioned (Elsaesser, 2007).

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<sup>101</sup> Source: Interviews with Cinecittà, ’s executives 2006-2008

This approach, widely adopted to fund most of international businesses, and mainly adopted to back the Italian film industry as well as other film industries, is known as the “corporate finance” model.

On this basis, the Italian film companies has always suffered from a huge lack of borrowed financial resources (of course different from public subsidies), as the corporate securities and the collaterals available have never been comparable to those of the US, or even the UK (Oxford Economics, 2007) – that is, those countries with the most advanced financial markets. It is no accident that the only European companies with substantial average film production budgets are UK firms (see Figure 2.9, Chapter 2), incontrovertibly the only European financial market whose efficiency and evolution can be approached to the US market (Fama, 1970; Malkiel, 1987).

The lack of funds assigned to films could be remedied by changing from a “corporate finance” to a “project finance” model (Nevitt, Fabozzi, 2000). Linking the amount of money assigned to films to guarantees strictly related to the making of the specific film financed would achieve a double objective, which the “corporate finance” approach is not able to ensure. First, it could increase the total financial resources devoted to the films. Second, because the ability to refund the borrowing is strictly related to the capacity of the film to generate suitable cash flows, the companies’ sense of responsibility would automatically be dramatically increased, as the possibility of obtaining financing for future productions would depend on the proven ability to generate profitability from previous projects. Hence, the shift to a “project finance” system would produce a self-reinforcing virtuous circle, which – according to some

sources – could increase by the average film production budget in the European film industries by 30 per cent (Think Tank on European film and film policy, 2006).

The main innovatory benefits that the securitisation approach could provide, compared to the current corporate finance perspective, can be summarised in three points.

- Funding is allotted to the specific project rather than to the general funds of the company that is carrying out the project. This would entail funding entrepreneurs who, although they may not hold enough asset securities to support the scale of financing needed and would not be in a position to find financiers willing to stand surety for them, may nevertheless have personal qualities that suggest an ability to make profitable films. This point concerns most of the Italian productions, whose limited production budgets (Chapter 5.3.2.1 Figure 5.6) are often perceived as the first cause of the unsatisfactory performances at the box office.
- Funding is disbursed on condition that it is paid back by the revenue cash flows generated by the specific film or film portfolio financed. It is plain that financiers will be disposed to provide money only after an assessment of the financial feasibility and expected profitability of the project backed. This point is critically important in the Italian context, where, as shown, many producers have appeared just for one or two (unprofitable) films before disappearing forever from the market (Chapter 5.3.1, Table 5.9). This clause – the obligation to repay from revenue cash flows – would permit a beneficial capital rationing situation (Vernimmen, 2005, Chapters 16-17) at the expense of those free riders entering the market just to take advantage of the public aid. By the way, this objective is

favoured by the new regulatory reform, because the reference system introduced is likely to discourage this kind of behaviour. Furthermore, this approach also reduces risk for the financial institutions, dealing only with strongly committed companies motivated to produce high quality films, rather than with free riders, since the only qualification for the authorization of credit is the expected ability of the specific film to generate enough money to repay the financiers, assuring them an adequate return.

- The film financed is evaluated as a specific project, economically and legally distinct and separate from all the other projects and assets belonging to the originator company. Hence, the specific film is evaluated independently from the company's asset base, even though the company's reputation would remain a relevant issue in the financing of its projects. In this way convincing projects from a minor company can be financed, while poor quality productions from major producers can be rejected. This situation, which permits the allocation of funds towards films as investment projects, is hardly thinkable in the corporate finance perspective. This point would be to the advantage both of the minor players that seriously operate in the market with valuable projects (by excluding the free riders), and of those major companies with high sense of responsibility, that will have to face a more competitive context in which only the meritorious films would be financed. In contrast, in the corporate finance outlook the major companies can often get indiscriminate funding solely on the basis of their tangible securities and their "brand" or reputation, irrespective of the intrinsic qualities of the films being funded.

Further fine-detail features that would weigh in favour of this innovative model can be summarised as follows:

- Although the firms are induced to assume a higher financial sense of responsibility, the project finance agreements usually include distinctive *non-recourse* or *limited recourse* clauses (Yescombe, 2002). This means that the company takes on only a share of the overall project risk, exposing itself just to the equity share invested in the film(s). Even though the producers become aware of their responsibilities, the benefit is the restriction of these responsibilities to the specific securities provided (Nevitt, Fabozzi, 2000).
- In the project finance outlook, the separate management of the films identifies them as *off-balance-sheet financing operations*, resulting in considerable *accounting benefits*. On the one hand, this could make it possible to carry out a risky project that might well be cast aside in the corporate finance view, because it would have a negative impact on the company as a whole in the market; on the other hand, it could permit projects that would be rejected in a corporate finance perspective because they were not in line with the existing portfolio of the company (Tinsley, 2000).
- The off-balance-sheet financing feature brings about substantial *fiscal benefits* as well. This results in two main advantages. First, films involve a long production period, during which the main costs are represented by the interest payments to the financiers (Miller, Bartlett, 2000). Through the securitisation approach the interest can be capitalised, so that related tax benefits can be enjoyed. Otherwise, the interest would be recorded as costs in the first years of production of the film,

when the project typically registers only losses, so that the related tax benefit would not be achieved. Second, by separating the individual films from the overall assets of the company, it is possible to deduct the losses recorded in the production phase from the first earnings generated, causing a further postponed tax benefit to accrue (Pollio, 1999). This step forward has been introduced by the Italian laws in 2008, by means of measures on “tax credit” – recognition of a tax credit on the costs of film investment to be enjoyed in the following years when revenues are generated; and “tax shelter” – tax exemption on profits from films which are reinvested in film production.<sup>102</sup>

- The project accounting separation has a further incomparable benefit, which the figures by themselves do not express: the *preservation* of the *borrowing power* of the film company. The body of assets represented by the company’s collateral securities is not undermined, and hence it is fully available for other ventures (Gatti, 1999).
- The project finance operations typically result in a considerable *leverage ratio*, reducing the equity contribution to a minimum.<sup>103</sup> The massive contribution of subordinated debt and mezzanine debt<sup>104</sup> has – unlike equity – the merit of generating deductible interest, with the further advantages mentioned in the previous points (Sironi, Iannotta, 2003).

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<sup>102</sup> Finance Bill 2008 (Law no. 244/2007) has introduced a series of tax relieves for the film industry, included in the Article 1, paragraphs 325 to 343. More specifically, paragraphs 325 to 337 provide for measures on tax credit; paragraphs 338 to 339 provide for measures on tax shelter.

<sup>103</sup> Leverage ratio, expressed as the ratio between the financial liabilities included in the financial structure (Debt) and the shareholder’s equity (equity), assessed at market value.

<sup>104</sup> Mezzanine financing is a hybrid of debt and equity financing, which legally belongs to the debt capital aggregate. It is generally repaid after the debt provided by senior creditors (bank financing) is reimbursed, but has priority over equity. It is a form of financing frequently used in project finance operations (Yescombe, 2002).

- The creation of a special purpose vehicle (SPV) specifically devoted to a single project or a portfolio of projects can facilitate the achievement of economies of scale (Frame, 2003).
- The investor's degree of control of reinvestment of the gains generated by the project is maximised. Whereas the cash flows generated in a corporate finance venture are reinvested in the company according to the corporate policies in force (Cones, 1998), in a project finance arrangement the shareholders would receive directly the (possible) cash flows produced by the film, and can decide how to allocate them, according to their preference, and the return of different market investments (Société Générale, 2005). Of course, a trade-off arises here, since the possible advantage described at this point must be weighted with the potential advantages arising from "tax shelter", in case the cash flows are reinvested in the industry (as described at the third point of this analysis list).
- From all that has just been explained, it is evident that the new financing model would permit the film companies to develop more ambitious investment options – in size and risk – than they could plan just on the basis of their corporate financial capacity (Froud, 2003).

Also, from the financier's point of view, there are crucial financial incentives that are not present in the traditional corporate finance contexts, so increasing on paper the likelihood to grant higher funds to film companies:

- The allocative efficiency of the financing circuit is strengthened through the securitisation approach, because of the reduction of information barriers between creditors and debtors. While the traditional procedure is essentially static and

based on historical information (Société Générale, 2005), the innovative procedure provides for a stricter and more objective relationship between companies and financial institutions.

- The banks' degree of awareness and knowledge of the investment risk increases considerably, as they cooperate on, or at least revise, the cash flows projections on which the credit is required, and the evaluation of the specific project features forces the companies to give all the detailed information required.
- In addition to the increase of the amount of available information, the project finance approach contributes to a decrease in the cost and risk connected to the diffusion of information (De Sear, 2006).
- Because of the higher risk associated with a project finance operation, the expected return requested by the financial institutions is usually higher than in a traditional financing procedure. As a result, the financiers can fund specific films that present an attractive risk and return trade-off profile, without becoming shareholders in the project, thus taking advantage of the lower financial risk (relative to the exposure of the shareholders) because of the priority in capital reimbursement, subject to a defined threshold (not realised if the film fails – the ultimate source of risk) of profitability.

### **The asset-backed securitisation**

The previous section sought to show the advantages for the Italian film industry of a shift from a corporate finance to a project finance approach. It would result in a “democratisation” of the financing pattern, giving rise to a funding system more based

on the quality of single projects rather than on the static logic and criteria of corporate finance, and, if the “virtuous circle” were established, it could increase the competitiveness of the Italian and other European film industries in relation to the benchmark set by the US industry.

The keyword in the change to project financing is securitisation.<sup>105</sup> This section is not aimed at detailing all the specific financial instruments used in a project finance perspective, as the previous chapters have set out an empirical analysis of the risk and return trade-off in the different geographical contexts.<sup>106</sup> However, a thorough examination of the policy implications of asset-backed securitisation is needed to explain the development potential of the new approach and its limitations.

Asset-backed securitisation (ABS) is a financial operation consisting in the opportunity for a subject – the originator – to obtain financial resources as a result of a bond issue, using as collateral an asset portfolio that he or she holds, which generates steady and adequately predictable cash flows (Kronemyer, 2007). The procedural innovation consists in the separation of the assets from the originator’s financial statements, and their remise to an SPV. The SPV finances the bonds issue and placement in the capital market. The money collected by the SPV through selling bonds to the investors is then transferred to the originator, while the assets on which the financing has been carried out represent the specific guarantee for the repayment of what is due to the bondholders.

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<sup>105</sup> Securitisation consists in first choosing some assets (receivables, inventories, buildings, consumer loans, mortgages, etc) based on the quality of the collateral they offer or their level of risk. To reduce risk, the assets are then grouped into an SPV so as to pool risks and take advantage of the law of large numbers. The SPV buys the assets and finances itself by issuing securities to outside investors...” (Vernimmen, 2005 Chapters 44 and 47 ) [There are no opening quotation marks. What part comes from Chapter 44, and what part from Chapter 47? Second thoughts: are these rhetorical quotation marks? See my comment below on the Bakker citation in Conclusion, p.21]

<sup>106</sup> On this topic, see: Gatti, 2007; Khan, Parra, 2003; Finnerty, 2007; Tinsley, 2000.

The cash flows necessary to pay the interests and reimburse the capital will be generated through the management of these assets.

In the film industry, the valuable and exclusive assets to exploit are represented by the *libraries* of films. As analysed in this chapter, with the 2007 regulation there has been a move towards the valorisation of movie libraries, but the possible negative consequences on the smaller competitors have been also pointed out (see paragraph 7.2.5). Libraries of films often constitute the assets of greatest value in the companies' financial statements. However, the liquidity of these assets is extremely low. Through the securitisation process, the film company cedes to a SPV part of its library, which is illiquid by itself, but which makes the issue of the asset-backed bonds possible. According to this, one can wonder why an investor should buy bonds based on assets, which, in the event of project failure, would be of low liquidity value to the holder. Just to reduce this risk, it is a typical feature of asset backed securitization that the amount of assets ceded and set as securities is usually higher than the nominal value of bonds issued. This clause protects and reassures investors from the higher risk involved.

The sale of these asset-backed securities generates the liquidity necessary to finance the company, whose sense of responsibility in producing a high quality film with positive economic results is hence increased. In fact, the payment of interest on bonds depends on the incomes generated through the exploitation of the rights transferred to the SPV.

ABS has been particularly effective in the US for many years (Leone, 2006), and the idea of putting it into practice in the Italian film industry too is well founded: the items referring to intangible assets reach valuable size in the financial statements of each film company. The intangibles – and more specifically, the libraries of any film company –

have considerable values, even though they are distinguished by a low degree of liquidity. The important point of this approach in the Italian context would be the assessment of the originator company according to the specific assets transferred to the SPV and based only on the estimation of the ability of the project to produce cash flows, on which the acceptance or refusal of the application for credit would be decided. More companies could be financed with more substantial funds than they receive now through the classic corporate finance approach. It would increase significantly the opportunity of the smaller Italian companies with low creditworthiness that could nevertheless offer valuable and reliable assets as cash flow sources to tap into larger funds.

A limitation of this approach for the Italian and European approach in general, is the necessity to have large bond issues, because for low levels the operation is not financially attractive (Sabarwal, 2005). Therefore, the ABS operations can be justified only for setting up substantial project funds. This limitation, which could cut off some projects, is likely anyway to incentive a new financial system in which a lower number of movies distinguished by a higher production budget compete in the market.

Finally, in addition to the main features mentioned in support of the securitisation approach, more specific financial advantages in terms of possible resources available for the film industry need to be pointed out:

- Increase of the availability of the companies' financial resources by using the least liquid assets recorded in their balance sheets, therefore raising significantly the average budget allocated to a film or portfolio of films.
- Decrease of the companies' financial risk by means of a diversification of the companies' financial sources (Vernimmen, 2005, Chapter 33).

- Strictly connected to the previous reasons is the possibility of decreasing significantly the amount of bank liabilities, which are usually quite expensive and risky for the company in terms of bankruptcy costs.<sup>107</sup>
- As has already been noted, the off-balance-sheet feature assured by securitisation offers crucial accounting and fiscal benefits; in addition the SPV project's debts are not recorded as company liabilities. As a result, the company's leverage is not undermined, and its line of credit can be enhanced for other borrowing requests.<sup>108</sup>
- The burden resulting from the increase in the sense of responsibility required of the producers is at least somewhat offset by the transfer of part of the financial risk – connected with the performance of the film – to the holders of the bonds issued. However, the typical buyer of these structured instruments is a sophisticated and knowledgeable investor, willing to allocate money only to projects with a satisfactory risk and return trade-off profile.
- Upfront return of the liquidity arising from the capital invested in the production of films.
- The already mentioned opportunity to raise financial resources independently from the overall rating of the company, and on the basis of the specific quality of the assets remised as collaterals, is likely to result in a considerably higher average production budget per film. Actually, it has been stressed several times in this work that the limited average production budget constitutes one of the

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<sup>107</sup> On this topic, see: Ross, 2005.

<sup>108</sup> Brealey, Myers, 2000, chapter 17 "Does debt policy matter?"

main limitations justifying the gap of European film industries to Hollywood (see Chapter 2.2.10).

- Furthermore, as financing is linked to the high quality and value of assets rather than to the rating of the company as a whole enterprise, the cost of financing for the specific credit allowed could be lower.<sup>109</sup>

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<sup>109</sup> On this topic, see: Schwarcz, 1990.

## **7.4 Conclusions**

The exacerbation of the difference in economic performance between the European and the US film industries has proceeded steadily over the years, and can be mainly traced back to the differences in the perception of film in the two contexts (cultural good vs. business activity). Cinema industrialised entertainment, by standardising it, automating it, and making it tradable (Bakker, 2005b) In the US, the continuous development of the financial institutions and their support for film as an industrialised entertainment has led to a very sophisticated and advanced sector, in which the creative features represented by directors, actors and other artists and expert technical personnel are flanked by specialised and experienced financial professionals, whose role is to design policies to reduce the extremely high variance, which constitutes the crucial financial issue distinguishing the industry from its traditional counterparts (Sedgwick, Pokorny, 1998). The competitive dominance of Hollywood over the Italian and European industries can be ascribed to the advanced financial approach, according to which filmmaking is a business like any other profit-seeking activity (Squire, 2004), while the European approach is still characterised by strong protectionism, which makes it possible to subsidise hundreds of films, often resulting in a massive waste of money. The Italian and European “cultural approach” gave rise over the years to a “vicious circle” that permitted many producers – the “free riders” – to exploit “hit-and-run” tactics: enter the market, obtain the public subsidy, and leave the market, nearly always without making any other productions. Permissiveness towards this kind of behaviour in the name of the cultural good approach has devastated the Italian industry, generating the extremely negative economic results pointed out in this work.

A new outlook for the Italian industry – which can be generalised to the larger European industry as well – must be represented by a new cultural model not aimed at blaming the public subsidy (which must continue to be an important instrument to fund the sector), but at making film producers financially responsible, granting them monetary support according to respect for market rules. This new approach is favoured by the new regulatory course Italy has undertaken from 2004, since the new rules, which are at the bottom of the present subsidy allocation system, also consider the commercial and financial prospects of films, and their alleged ability to repay the subsidies granted – differently from the films which constituted the dataset of this thesis.

Following the new approach, the film projects submitted for financial aid must be based on a business model that conforms to the new rules, superseding the charity logic ethos that has bedevilled subsidy policy hitherto. This prospect will be likely to reward those productions that can combine the preservation of the cultural heritage with a sustainable economic and financial performance. Restriction of the maximum extent of the “welfarist” criteria on which public financing is presently based represents the most appropriate way to shift from a poorly meritocratic “hand-made industry” to an industrial operation, in which film production must meet market principles.

The shift from a corporate finance to a project finance perspective with the concomitant portfolio management of films is the unavoidable step the Italian and European film industries must take to close the gap on the US industry. This would imply a resolute and strong approach to financial markets and to the modern financial instruments already available to promote the industry. It will not be a painless transition, as some of the present participants who take advantage of the scarcely competitive current

procedures will be destined to disappear. However, the long-term benefits for the industry as a whole will be considerably greater than their short-term personal interests in it.

Paradoxically, the practical means of giving the industry a new direction are not insurmountable at all, and financially speaking the ground is already fertile in Italy and in the rest of Europe. The real problem is the existing inertia because of the difficulty of turning over a new leaf in the cultural and political approach to the industry. The “new hope” model entails a substantial change in policy that requires political commitment and belief, which perhaps constitutes an even a bigger obstacle to overcome than the financial issues.

The assignment is particularly challenging, since it implies not only a financial and economic change in the film industry’s behaviour, but also a more generalised revolution in the mind-set, the way of thinking and acting, to understand whether the long-term benefits for all the community are considered by decision makers as more important objectives than the short-term personal interests of a select few privileged parties.

**8**

**Revisiting  
the Research Questions**

This section reviews the research questions posed in the introduction as motivation for the work, and examines how they have been addressed. It considers the results of the empirical analyses and observes the extent to which they confirm the literature, challenge it, or necessitate the need for further study.

### **Risk and return trade-off**

The broadest field of investigation in the thesis has concerned the risk and return trade-off in the movie business, inspired by the studies conducted by previous researchers on the topic.

The first research question posed was:

*1. In either the US or the Italian context, does the statistical distribution of film revenues conform to that found in earlier studies?*

In both contexts the empirical results obtained match, for the most part, those found in earlier studies: namely, that the frequency distributions of film revenues analysed have infinite variance, high kurtosis, heavy tails, with high right skewness, characterising the industry as one dominated by a few extremely successful productions. Furthermore, the scatter of revenues against costs of production also supports previous findings, showing a positive relationship, albeit one demonstrating high levels of variance. However, unlike the American context, in which big budget productions are frequently rewarded by considerable box office revenues, big budget productions in the Italian market generate much more uneven revenue performances, perhaps providing an explanation for the limited investment in high production budgets by film companies in this market.

The second level of investigation – frequency distributions of film rates of return – has not attracted as close an examination as that devoted to revenue in earlier studies. The related research question put was the following:

*2. To what extent are production costs a good indicator of the rates of return generated by films in the datasets?*

The analyses revealed a random relationship between production costs and rates of return, although naturally the range of returns drops as costs increase – the effect of a rising denominator in the formula. At various times in the thesis it has been stressed that these outcomes need to be interpreted with some caution. On the one hand, the advantage of rates of return is that they represent a ratio between profits/losses and costs, which makes them a useful relative profitability indicator. On the other hand, a hasty interpretation of the values on the scatter diagrams could be quite misleading, because a rate of return, being a dimensionless ratio, cannot by itself express how much each single film gained or lost in absolute terms.

In the Introduction, the third question asked was:

*3. Are the cost frequency distributions comparable in the two contexts analysed?*

Despite some similar conclusions obtained in the two backgrounds through the investigation of frequency distributions of revenues and rates of return, this query has proved to be extremely significant, since production budget is a key variable in distinguishing the different trends in the two contexts. The research demonstrates that the average production budget for an US production is very high, and equal to \$15.4 million. In contrast, 93.5 per cent of Italian films have a production budget lower than

€6 million, with the mean production budget for an Italian film of just €2.5 million. The cost analysis conducted is particularly revealing as it reveals that the financial resources available and allocated to produce the films in the two contexts are completely different, and this fact underlies most of the financial results found in this thesis and also in other studies. While the empirical analyses of the thesis show that a common pattern is identifiable both for frequency distributions of film revenues and frequency distributions of film rates of return, the different order of finance that US and Italian film companies can command explains the higher risk profile of Italian productions compared to American ones. The US films have much higher budgets, resulting both in larger potential premiums and bigger potential losses. However, when considered as sub-samples of movies, the results show that if at least one of these expensive US films on the slate is a hit, the incomes from this movie are usually able to compensate the losses arising from some, or all, of the other films. This cannot occur in Italy because the chance of one of these movies becoming a runaway hit is very much less likely. In addition, the fact that the quasi-linear relationship between revenue and costs is less obvious for the most expensive Italian productions, giving them a higher risk and rate trade-off profile, constitutes a further disincentive for Italian film companies to increase the average amount of production budgets.

Therefore, a further research question the thesis seeks to answer is the following:

*4. To what extent does mean production cost relate to the results in the two contexts?*

More specifically:

*Is the production of lower budget films always less risky than high budget ones?*

The analyses show that the lower financial resources available to Italian film companies are important in explaining some of the results. In fact, the attempt to set up Italian movies with similar ranges of costs fails for high budget sub-samples, because the number of expensive films for each Italian company examined is extremely limited. In the same way, the creation of sub-samples composed of movies with different production budgets leads to a striking contrast because of the small number of very expensive films produced by the Italian companies. It has been pointed out that the standard deviation is reduced, but to a smaller extent than that obtained by setting up sub-samples composed entirely of low budget films.

This result gives food for thought. First, it differs completely from the outcome found for the US films, where the variance typically decreases when the production budget allotted to movies included in the portfolio increases. In Italy, higher budget productions prove instead to be accompanied by higher variance. Second, due to the limited size of the Italian companies, and their incapacity to compete with the US companies, it would seem that strategies based upon substantial investments in expensive films and following cost diversified strategies are not so beneficial in Italy, since the big budget productions are able neither to guarantee higher box office takings, nor to lessen significantly companies' risk/return trade-off profile.

The diminished effectiveness of these policies is also explained by the fact that Italian film companies do not have an adequate number of differentiated films in terms of production costs, thus making it hard to set up different categories of films, such as sub-samples including only high budget productions, or movies with differentiated production budgets. The lower availability of different kinds of films due to lack of

high budget productions is a hurdle that makes it difficult for the Italian industry to formulate diversified strategies based on the different cost of films.

Following on a forth question was posed. Namely:

*5. Can a common pattern of risk and return trade-off behaviour be identified in the two contexts examined?*

The results that emerged in the thesis are incontrovertible. As to returns, the US context is tremendously profitable, while the Italian market is extremely loss-prone. Suffice it to say that a US production generates on average about \$25 million of box office takings in its domestic market, against only €1.5 million produced by an Italian movie in its national cinemas. This corresponds, respectively, to a mean rate of return of about +29 per cent against one of -39 per cent. This huge gap between the economic performances must be compared to the results concerning risk. Both the contexts are in fact extremely risky, due to the high standard deviation values (both for revenue and rates of return frequency distributions), always greater than one. Even though some annual distributions of US films record higher values of variance than those of Italian films, the analyses conducted with reference to skewness and kurtosis bring out comparable results. In both contexts, the distributions are right-skewed, confirming that the mean revenue/rate of return “overestimates” the individual revenue/rate of return of most films composing the population, which are placed in the left of the distribution. Consequently, the analyses bring to light the completely different patterns of risk and return trade-off behaviour in the two contexts. On the one hand, both the US and Italian film industries are extremely volatile environment, confirming that the film industry as a whole is “*the risky industry*” (Sedgwick, Pokorny, 1998; De Vany, Walls, 1997). On the

other hand, this high variance is compensated by the significant profitability that the US productions obtain on average at the box office, whereas it is not offset in Italy, whose productions face unsuccessful economic results in addition to the high risk that permeates their business.

In addition, it needs to be recognised that the extreme fragmentation of the market in terms of competitors unquestionably constitutes a negative feature in explaining the lower financial efficacy of Italian context. In fact, the 311 films not produced/released by the eight largest companies belong to 111 different companies, and even the main Italian firms produced a very limited amount of films, never above ten annual productions on average, while during the time span of the analysis US majors such as Warner Bros produced on average 18.7 productions annually. The greater number of productions with diversified costs is key to the success of risk reduction strategies in the US compared to Italy.

### **State support**

The first research question in this section mainly demanded a qualitative answer:

*6. Why is state support for the film industry justified in the case of Italy and not in the case of the US?*

On the one hand, the work has revealed that, unlike the situation of the US industry, subsidy regimes sustain the existence of the Italian and other European film industries. On the other hand, the work has reported that unlike the US, the European approach justifies state supporting terms that subsidies should be given only to films that can be

considered as a form of art. Therefore, the thesis indicates that a financial motivation and a social-cultural motivation underlie conflicting points of view on the justification of state support. Focusing on Italy, during the time span when the films analysed were produced, the two main justifications for the existence of a subsidy regime in this context are that the productions are “national produced films”, that is, produced or co-produced by Italian film companies, and “characterised by cultural content”.

On this basis, the following research question arose:

*7. How efficiently does state support for Italian film production bridge the gap in financial performance between the Italian film industry and that of the US?*

The empirical evidence of this work reveals that although the public subsidy reduces the financial burden of production costs for the companies, it is still far from adequate to assure them positive returns, because of their constant unimpressive performances at the box office. In fact, considering the overall results concerning the 131 Italian subsidised films of the dataset, it can be seen that the Italian State contributed €293.5 million towards total production costs – almost half of the total budget of making these films. In spite of that, the profitability indicators of these productions are negative. Furthermore, of the 14 subsidised films that made positive returns, only three were profitable net of the subsidy. In financial terms, the subsidy regime policies proved therefore to be very inefficient in reducing the financial and economic deficiencies in comparison with the US productions.

Related to this the following question was put:

*8. Is the subsidy regime effective in developing and supporting cultural identity, thereby enhancing the prestige of the society as a whole?*

In that light the thesis has argued that the subsidy is neither an efficient nor an ideal instrument to back the industry. However, it still constitutes the most practical and concrete means of assuring the survival of many entrepreneurs whose activities would be jeopardized if they were left alone in the markets. The state support does not contribute effectively to developing and stimulating cultural identity, since the empirical results prove that the increase in number of filmgoers able to capture the messages of a given film as a consequence of a public subsidy is negligible. The point that the thesis wants to emphasise is that Italian and European “cultural approach” gave rise over the years to a “vicious circle” that permitted many producers – the “free riders” – to exploit “hit-and-run” tactics: to enter the market, obtain the public subsidy, and leave the market, nearly always without making any other productions. The compelling conclusion that can be deduced from the empirical results is that permissiveness towards this kind of behaviour in the name of the “cultural good” approach has devastated the Italian industry, generating the extremely negative economic results pointed out in this work.

The previous conclusions and deductions are corroborated by the results obtained from the following research question:

*9. What kinds of firms do resort to public aid, and what are the implications of the answer?*

This issue is particularly significant, as the thesis demonstrates that the films made with a subsidy correspond to the least successful productions in terms of the economic performance, as the annual rates of return registered are extremely negative. It would appear that the few films that capture respectable markets shares and are profitable (also because of the secondary markets) are usually those that do not resort to the subsidy regime.

The final step to these observations is represented by the answer to the last research question:

*10. Is it possible to work out a new framework to deal with the issue of subsidies that the Ministry of Cultural Heritage could submit to the government, which could constitute a more efficient system to finance, manage and stimulate the Italian film industry?*

The answer to this question is absolutely positive. The conclusion of this work of research is that a new outlook for the Italian industry – which can be generalised to the larger European industry as well – must be represented by a new cultural model aimed not at blaming the public subsidy (which must continue to be an important instrument to fund the sector), but at making film producers financially responsible, granting them monetary support according to respect for market rules. This new approach is favoured by the new post-2004 regulatory regime course in which the commercial and financial prospects of films, and their alleged ability to repay the subsidies granted have been factored into the decision making process: film projects submitted for financial aid must be based on a business model that conforms to the new rules, superseding the charity logic ethos that has bedevilled subsidy policy hitherto. The new regulatory framework will more likely reward those productions that can combine the preservation of cultural

heritage with a sustainable economic and financial performance, representing the most appropriate way to shift from a poorly meritocratic “hand-made industry” to an industrial operation, in which film production must meet market principles.

To conclude, the novelty of the thesis can be summarised in short in four essential points.

1. It examines: (a) the relationship between cost of production and box office revenues of films, by further corroborating and enhancing the outcomes achieved by previous studies; and (b) the relationship between cost of production and rates of return to find only a random distribution across the dataset and within each decile category.
2. It exhaustively examines risk and return profiles of the US and Italian film industries, showing the financial effectiveness of the US film industry to be incomparably superior to that of the Italian film industry.
3. It shows convincingly that public policy in Italy towards the current system of film subsidisation is inequitable and inefficient.
4. It introduces a new dataset into the literature, the Italian dataset constructed by the author.

# 9

## **Conclusions**

The empirical work recorded in this thesis brings to light the nature of the economic difference between the US and European film industries. Hollywood is dominated by different production giants for which film is a business like any other profit-seeking activity, and whose primary aim is to increase the shareholders' value (Van Horne, Wachowicz, 2004). The film business ethos in the US is concerned exclusively with achieving the highest profitability, notwithstanding the specific features of this product that make it one of the most economically volatile and unpredictable to manage. In the American dataset analysed, a film with the mean production budget of about €15.4 million generates about €25million in the national theatres, quite an astonishing result in terms of profit. However, it has been emphasised that uncertainty pervades the industry as for no other commodity, so that the return on a film cannot be predicted at all at the time of its release, and experience and studies have proved that despite persistent beliefs within the business about 'bankable' stars and directors there are no specific features concerning films that can be deployed to ensure a guaranteed profitability. The same can be said for production budgets, although this has been considered for long the only variable that can influence somehow the economic performances in the theatres. Actually, even though a positive relationship between production costs and revenues has been demonstrated in the thesis – for Hollywood and the European film industry, as represented by Italy – the statistical association between costs and rates of return is randomly distributed. This implies that more expensive films often give rise to higher box office takings, but the value generated for the investor does not necessarily increase as cost increase, since in relative terms the wealth generated is not always proportional to the investment made. By way of example, the already mentioned *Waterworld*

generated about \$65million in the US theatres, while \$43 million were collected by *She's all that*, but in relative terms the first incomes must be compared to production costs of \$129 million while the second cost only \$6 million to produce. Considerable investments in production are hence a good way to increase the likelihood of larger box office takings, but are not a guarantee of a positive return from the project. Why has Hollywood been so successful in these decades, in spite of the extreme variance that is characteristic of the industry? The financial and management approach that Hollywood film companies employ to deal with this uncertainty has represented the winning move to make the best of a sector that is one of the most risky, but at the same time also a great generator of money in absolute terms. It has been proved that producing concurrently films with different costs constitutes the scheme by which the Majors can obtain considerable incomes and substantially mitigate the risk associated with the production of films. The key to the success of this approach is evident: the industry is extremely risky and the huge amount of money invested in production costs could compromise the companies financially if films were managed as individual projects. The coexisting production of films with different costs has proved to be constantly successful as the loss default arising from  $n-1$  films is in most cases offset only thanks to the revenues generated by one or two films included in the same sub-sample.

The analysis of the Italian approach – as a model of the European film industry – shows that it has led to completely unprofitable results, which makes it not even vaguely comparable to Hollywood's *modus operandi*. Based on a total of €1,423.2 million spent in production over nine years, the Italian films examined record just €867.5 million as revenues in the national theatres. For the 566 films produced, this results in mean loss of

about €1million, an extremely negative result, especially considering that both the frequency distributions of revenues and rates of return confirm highly right-skewness and lower median values than the mean – that is, this awful result is prevented from being even worse by a small number of productions that perform extraordinarily well at the box office. In spite of this stark contrast with Hollywood's performance, the uncertainties that affect and mould the US industry are also present in Europe: high variance, impossibility of predicting the economic performances of productions, completely random distribution of production costs against rates of return. The inadequate financial organisation of the European national industries constitutes a key limitation, so that cost diversification strategies can be implemented only with great difficulty, and when they are they do not lead to the unquestionably successful conclusions achieved in the US market. The thesis states that, more often than not, setting up films with different cost is a valuable policy also in Italy, as risk is reduced. However, the extent of the benefit is not comparable to that obtained in Hollywood, and in some cases the advantage to be gained by aggregating films distinguished by different production budgets is not achieved in Italy, because the variance is not reduced. One factor is particularly significant: the extremely lower production budgets in the European context are often mentioned as one of the most relevant elements in accounting for the financial and competitive gap between Europe and Hollywood. Despite that, the empirical analyses of the Italian market lead to the conclusion that low budget films are much more efficient in reducing risk than high budget films or aggregating films with diversified costs. This could be a daunting implication for European film companies, diminishing their incentive to invest more funds in

production, since high budget films would seem to be more risky in the European context, and would not ensure any superior profitability, due to the absence of any relationship linking production costs to rates of return. The negative profitability results associated with the partial effectiveness of diversified cost strategies of the Italian and European film companies would seem to go hand in hand with the constricted size of their markets and limited potential audience for national productions, the market inefficiencies, the financial restraints and the consequential incapacity of European companies to compete with companies based in larger markets, such as the US.

The strong point of this work is represented by the fact that the results achieved are highly significant in statistical terms because of the width and reliability of the dataset used to compare the finances of Hollywood studios with those of Italy. For the former a very large dataset of all films released on the US market 1988-1999 has been used, while for the latter a completely new, unpublished dataset from 1995 to 2003 has been constructed from archive materials found at Cinecittà.

The results referring to the system of subsidy show that Italian film subsidy is wasted and that as it works now it is not an efficient instrument to pit against Hollywood. Even though this state of affairs is often perceived as destined to continue, this thesis wants to spur European institutions into action. The scheme of subsidy analysed in the thesis is an underhand system that relieves the recipients of responsibilities. These producers often take advantage of an economic benefit, produce an unsuccessful film, and then disappear without a trace, and without answering for the public money wasted. The inefficiency of the subsidy system, as things stand now, is obvious and cannot be confuted. The empirical chapters have proved that Italy and the other European

countries produce a disproportionately high number of films that is more in line with the potential audience available to Hollywood than with the reality of their own national audiences, and the public aid is never a key element of profitability, as the analyses show that none of the films it supported became a hit due to the public intervention. The studies conducted on other periods than those of the datasets of this thesis further corroborate this conclusion. *The Financial Times* reports that the Italian public aid to national films between 2001 and 2005 was equal to €428 million, distributed over 243 films – that is, more than €1.7 million per film. The box office takings from these films were only €76 million in total, and even more disturbing is the fact that €50 million of public aid was completely wasted, since it was allotted to productions that were not even screened in the theatres in the end (The Financial Times, 2007).

In contrast, the analyses of this thesis show that the films that broke even, or better, at the box office were essentially those that did not resort to the public subsidy; Roberto Benigni's multi-awarded *La Vita è Bella (Life is Beautiful)* is a case in point. While the financial role of public subsidy is completely inadequate, some backers still insist on its role as a way to support the cultural heritage. While this concept might have been defensible in the early phases of the of the film industry in Italy and Europe, it seems much less justifiable now. The specific implication arising from the results obtained in this work is the calling into question of the principle that goods belonging to the cultural heritage are meritorious of subsidy that could be kept valid for films. The cultural heritage, or national heritage, could be defined as the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations. Often

though, what is considered cultural heritage by one generation may be rejected by the next generation, only to be revived by a succeeding generation.

Although one can affirm that the “physical artefacts and intangible attributes” of a Van Gogh painting exhibited at the National Gallery, the cultural contribution offered by the writings of Shakespeare and the poems of Pablo Neruda are unquestionable, because they still remain as a legacy in the minds and in the eyes of millions of people even after centuries, many theorists have discussed whether a film can belong in such company. The key point brought to light in the empirical analysis conducted in the thesis is that – beyond conceptual distinctions – almost none of the subsidised films has been distinguished for its “physical artefacts and intangible attributes” that can be “maintained in the present and bestowed for the benefit of future generations”. The films that can be mentioned now for their cultural, educational meaning, or the messages passed on, are essentially those that were successful at the box office – that is, the emotional involvement or the attention resulted in a positive feedback from the audience. A further demonstration of the inefficiency of public subsidy as a tool to patronize the cultural heritage is contained in the empirical evidence in the thesis that out of a population of 566 Italian, of which 131 were subsidised, only 14 films, equal to little more than 10 per cent, became profitable as a result of the subsidy – that is, the State intervention to promote a supposed cultural message has failed nine times out of ten. This proves that, with a very few exceptions, the audience self-selects the productions, some of which have only a recreational content, while others have features that can surely belong to the concept of cultural heritage.

The public subsidy in Italy and most European countries is only window dressing, making possible the multitude of free rider competitors who have excessively increased the number of annual productions at the expense of more deserving companies, which are, among other things, those that rarely resort to public aid.

Progress has been made in recent years following the introduction of the new regulatory framework in that they have reduced the discretionary power of the public funding body by imposing a financial commitment condition that film companies must agree to. In this way the subsidy is designed to improve the performance of subsidised films at the box-office.

The shift from a corporate to a project perspective is the first, indispensable step to sift out the most from the least meritorious productions. As things stand now, the European context, with a few notable exceptions, is a long way behind Hollywood in taking advantage of the different financial instruments that are available and which, in some cases, have constituted the main source of benefit of many American companies. As shown in this work, cost diversification strategies make it possible to spread the risk of films that may fail, since it has often been sufficient that only one among  $n$  films was a hit, that its incomes were able to counterbalance any losses arising from the other  $n-1$  films. The advantage for US Majors is that their films can rely on bigger production budgets, as stated, implying larger premiums, but also with the potential for greater losses. However, the point is that as the mean rate of return for a US film in its national theatres is a satisfactory +28.9 per cent, it is more likely than not that the creation of sub-samples of different films will be a moneymaker. The European productions are too numerous relative to the potential audience reachable, and can count on an average

production budget that is not even comparable to that of an American production. The indiscriminate assignment of funds through the public policy allocates resources also to some projects whose potential ability to compete in the market is extremely limited, as the results have demonstrated. Focusing the public financial contributions on the films that might be capable of reaching an economically adequate number of viewers would banish the productions made by those free riders drawn by public aid to working in the market, leaving more aid available for those films that people are interested in watching. How could this new model be concretely carried out? Corporate finance might play a crucial role in the formation of public policy towards supporting the film industry in Europe. Nowadays, organisations like Cinecittà in Italy, or equivalent bodies in Europe, have essentially an institutional role, but they are not able to address the problems of the industry and introduce the changes that appear necessary. These bodies are often under political control, being a branch of the government in charge, frequently belonging to the national ministries of cultural heritage. They have the first-hand knowledge of the mistakes made in the industry and would be the most appropriate institutions to revise public policies, but they are not allowed to do it.

It is sensible to think about a new reform such that these institutional bodies can act as funding bodies that are required to break even over a five year cycle, with the remit of generating audience value as well as safeguarding taxpayer monies. Institutional bodies could also act as financial facilitators, which are given considerable responsibilities with a definite financial objective fixed in the medium and long term. These organisations can be imagined as film banks co-owning portfolios in which they take partial stakes in a wide number of new films. The presence of an official body delegated with an

explicitly defined financial sense of responsibility and accountability is the only possible step to extricate the present completely unprofitable film industry from the snares of the discredited management approach.

The financial involvement of national film bodies would make it possible to reduce the number of films produced annually, as among their powers would be the adjudication process which would exclude those – the majority at the present time – whose contribution to maintaining the values of the cultural heritage is negligible or nonexistent and whose ability to compete commercially is insignificant. A lower number of productions would make possible a reallocation of the total subsidies, consequently increasing the mean production budget. This would represent an essential step to reduce the financial shortcomings relative to Hollywood's standards, hence increasing the likelihood of success with portfolio diversification strategies.

Although the necessity for this switchover has been emphasised, it was not the objective of this thesis to blame public subsidy intervention per se. On the contrary, public subsidy policy can play a leading role if it is re-conceived in a stricter, more efficient way, so that it can be part of a coherent strategy. Indeed, the above mentioned objectives concerning funding bodies as owners of portfolios of films, with five-year break even targets, would not be possible under the present direct system of financing. The direct assignment of subsidies to film companies has proved to be a morally hazardous “across-the-board” scheme that has indiscriminately financed too many productions, without following any meritocratic principle. Trying to achieve the proposed long-term financial goal by continuing with the existing system of subsidy would be a losing battle, because of the lack of incentives to make the film companies aware of their

responsibilities. This financial aim must hence be linked to the change in the form of state intervention in the sector, which must shift from the present direct scheme, which should be phased out, to indirect forms of financing by means of tax benefits. The indirect system of contributions to culture and the film industry has been tested for a long time in the United States, and according to different studies would have proved to be more effective than the direct method essentially in force in Europe (Cowen, 2006). The indirect scheme would also work in favour of the hoped for conversion of institutional bodies into financial bodies, since it would separate artistic production from any kind of political influence, which still represents one of the main issues obstructing the switchover in most European film industries, and particularly the Italian.

Unlike the scheme of direct contributions to production, the tax benefit model – furthermore supported in Italy by the promulgation of the recent Law no. 244/2007 – does not involve governmental or state interference in the allocation process of resources, thus making it transparent. This emancipation would make it possible to create a really efficient market in which all the competitors can freely take advantage of tax benefit without intrusions from above, and where the companies do not obtain money according to the decisions of Commissions that assess on the basis of requirements whose objectivity is always open to question. The indirect scheme does not involve grants to parties that can disappear after enjoying the benefits, but implies an advantage that commits the parties for the benefit obtained, which must result in future investments in the sector. In fact, this system favours those parties only for those resources that they invest to increase the production budgets of films. The incremental resources specifically destined to raise the production cost can be used to take advantage

of tax credit facilities. Moreover, it rewards – by exempting them from taxation (tax shelter) – the profits obtained that the companies reinvest in new investments in the sector rather than distributing them as dividends. Therefore, the new programme favours those competitors motivated to invest or reinvest resources in the sector rather than benefiting immediately from the profits derived from it. So, it is plain that this new indirect scheme is strictly related to the idea of “converting” the institutional bodies into financial bodies, as only by the strictly defined financial assumption of responsibility of film companies can the five year break even goal be achieved.

A further important point to highlight is the need for a change in the relationship between finance and the film industry, making the latter more firmly based on the rules of the former. While artists may look on financial institutions as a possible threat that can make the financial and economic objectives prevail against the artistic and cultural message that they want to convey, financial institutions perceive the industry as one for which economic goals are seen as secondary, and hence not of compelling importance. In this respect, the time has come for change, and after decades in which the European film industry regarded Hollywood with contempt, “blaming the success of American films on prurient appeal” (The Economist, 1991), European companies must now look to the US film industry as a model and try to duplicate its success and management aptitudes. The high production budgets of American films are essentially due to the intervention of high risk capital contributions whose investors, trusting the qualitative and business validity of the projects, are disposed to invest sizeable amounts of money. The Italian and most European film industries are still far away from this perspective, and the main source of financing is still constituted by public aid and pre-sales

financing. The turning point would be represented by a substantial participation of risk capital from private and institutional investors. Besides increasing the mean production budget and bridging the wide financial gap between the European and US film industries, the involvement of private risk capital would constitute a further instrument to eliminate the previously mentioned free rider competitors, and hence create a virtuous circle mechanism that would gradually cleanse the market of the least deserving firms in favour of those which compete efficiently. A market in which companies would be forced to have recourse to large sums of money, and hence to private investors in risk capital, would contribute to making companies more financially responsible, since they would be subjected to the judgement of the financial market, which would constitute a further incentive to look for further alternative sources of financing. In Italy and Europe in general this changeover could lay foundations to establish a completely new concept of the market, with a more restricted number of competitors whose strength could create a real competitive environment to challenge Hollywood.

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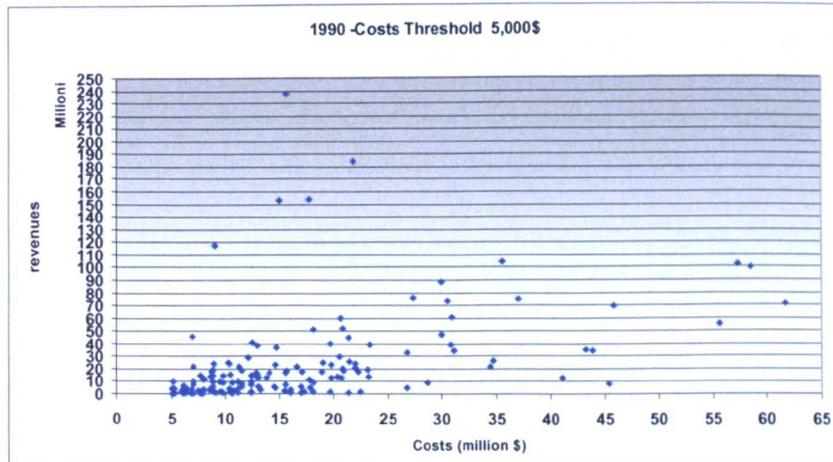
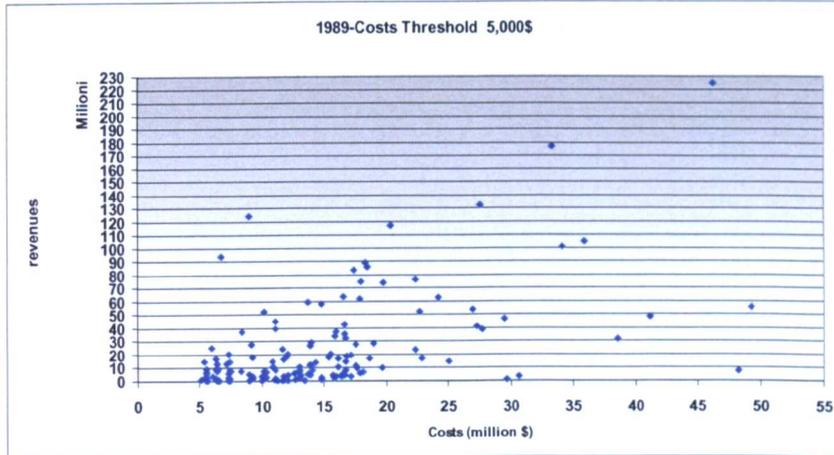
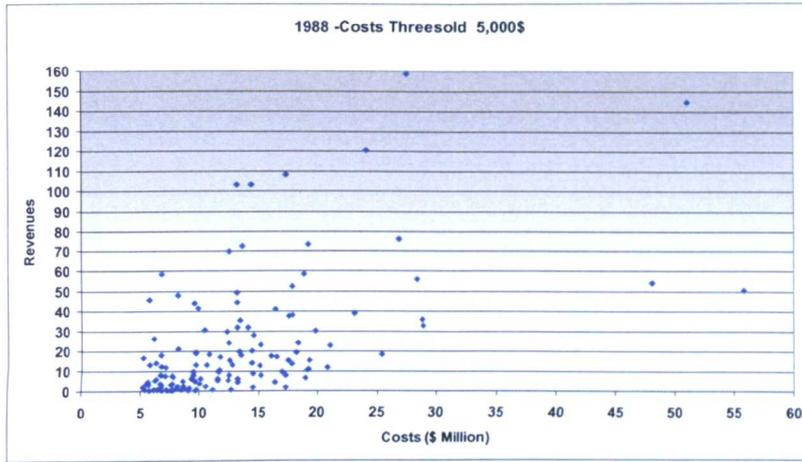
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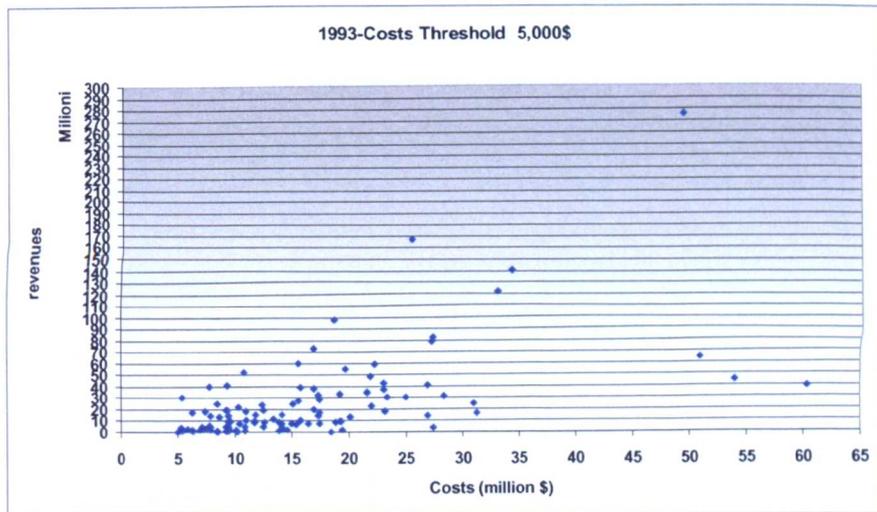
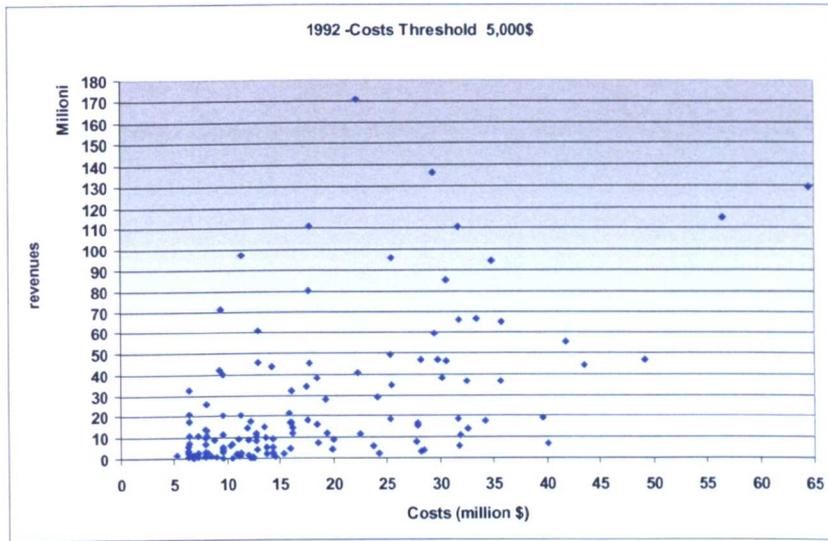
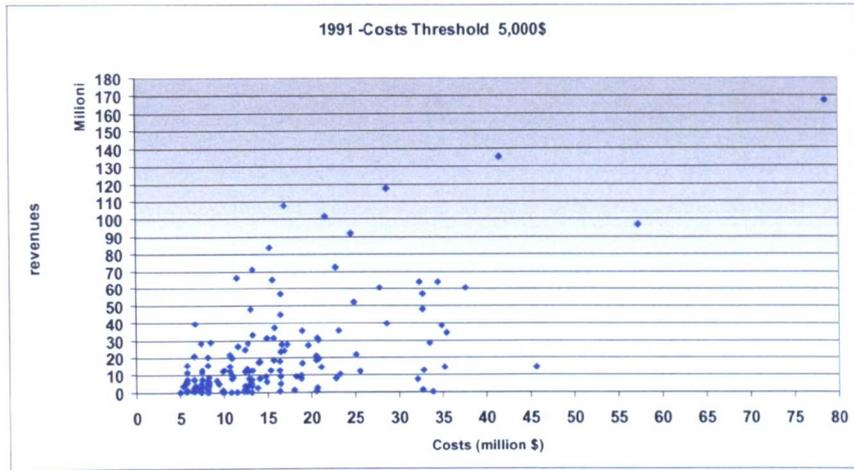
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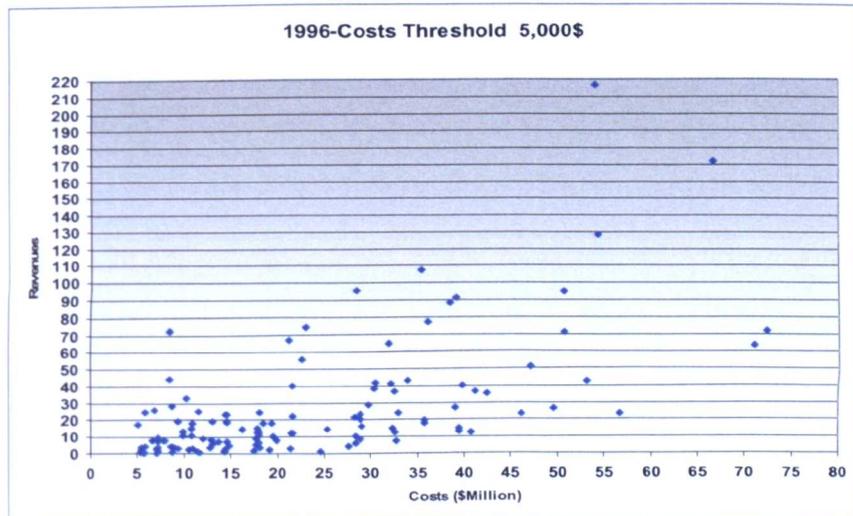
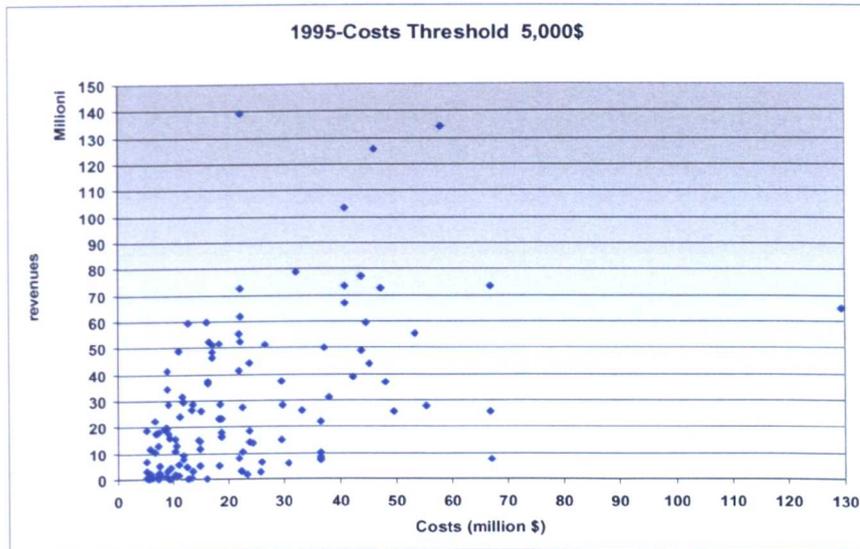
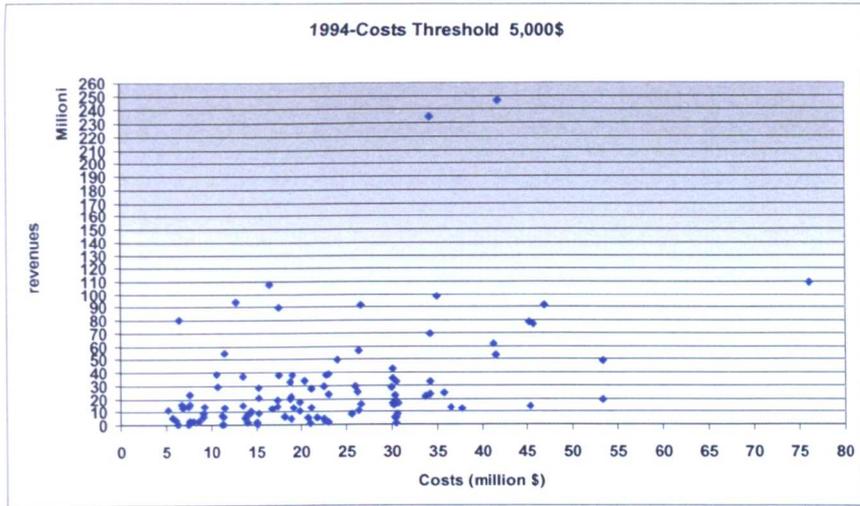
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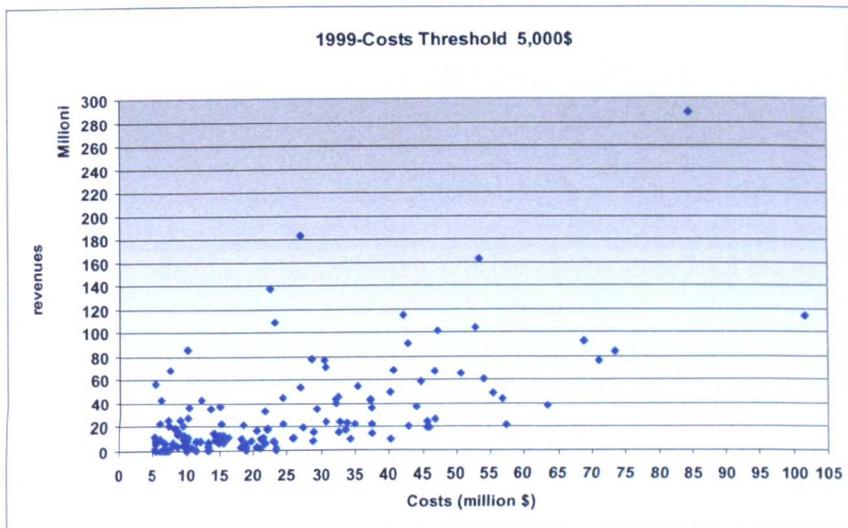
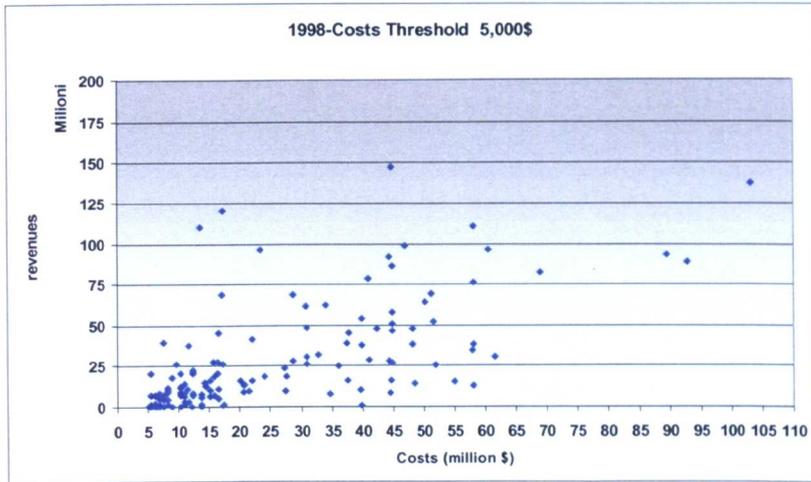
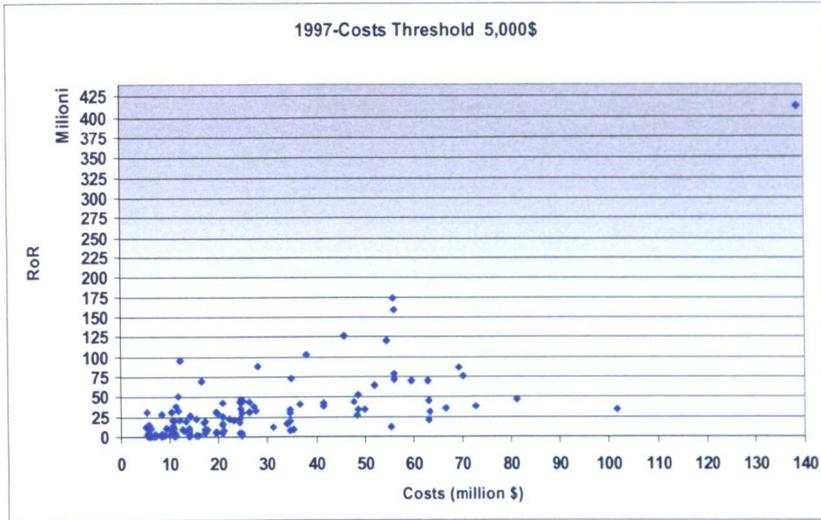


**Appendix 1 – Annual scatter diagrams.**  
**Relation between costs and revenues of each film – US Dataset**

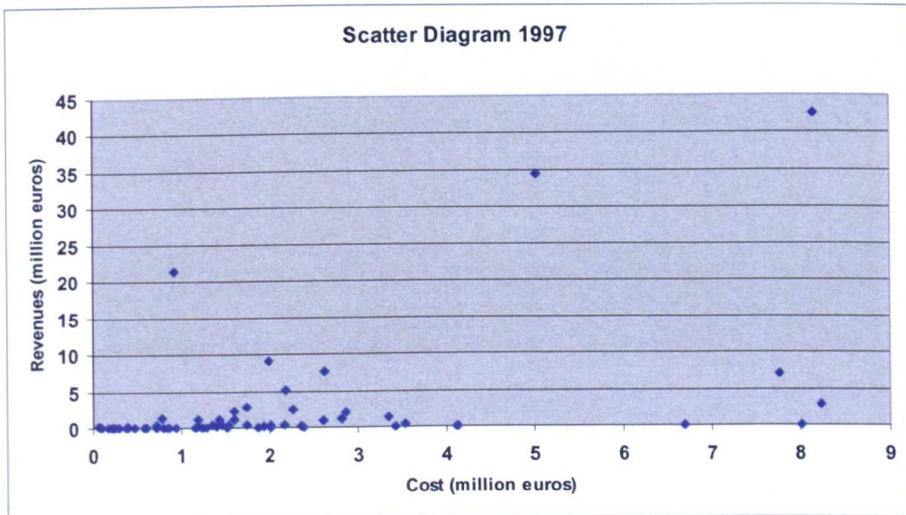
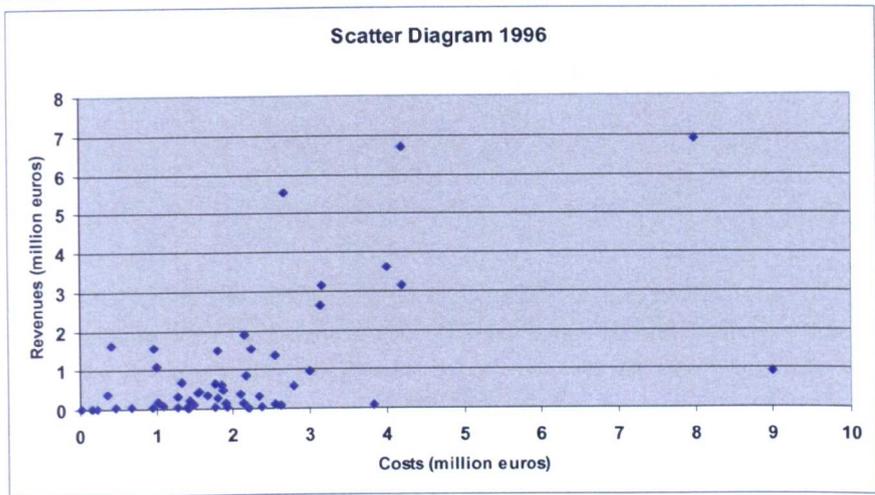
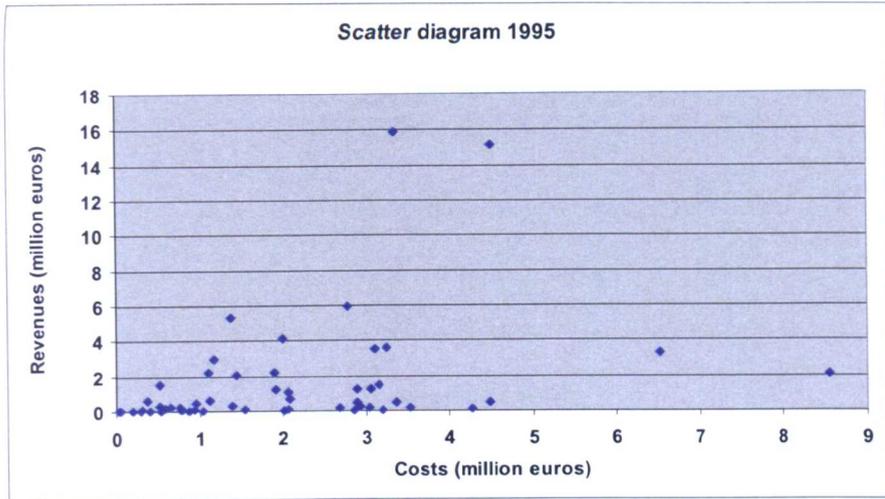


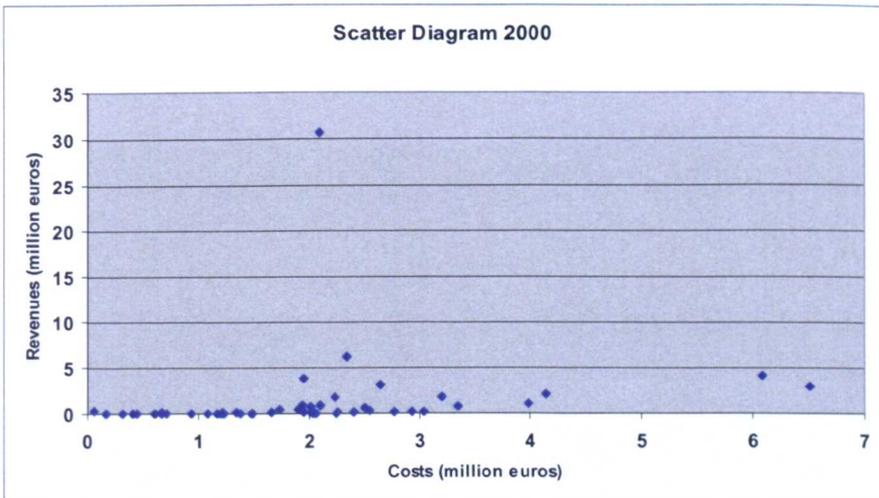
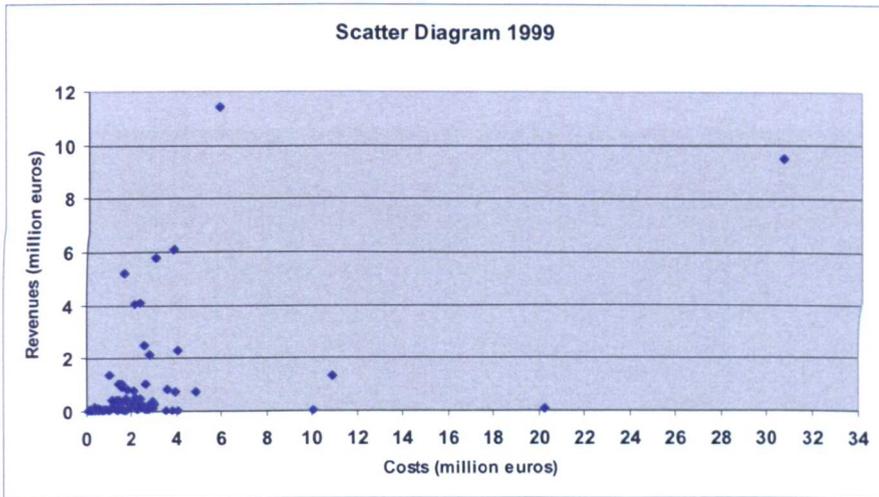
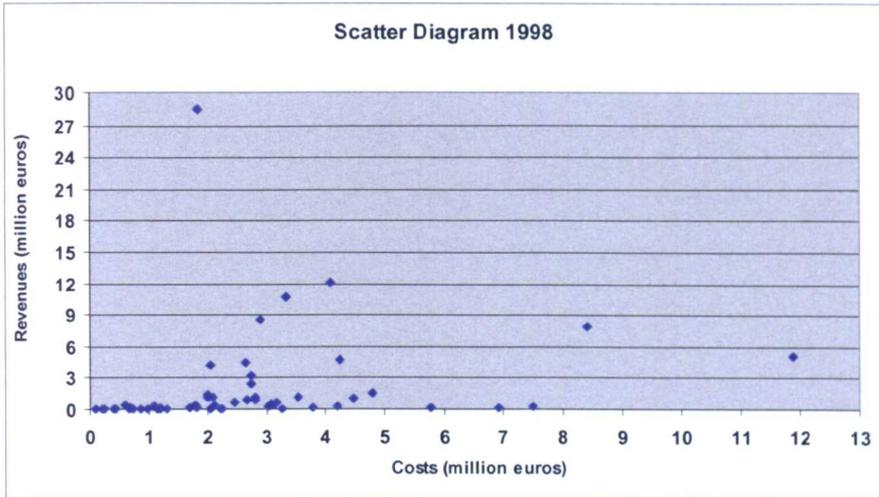


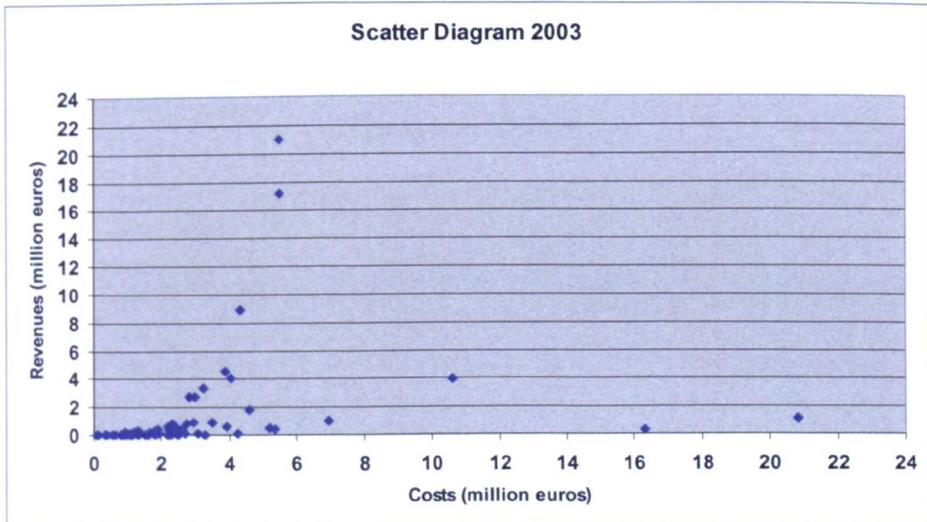
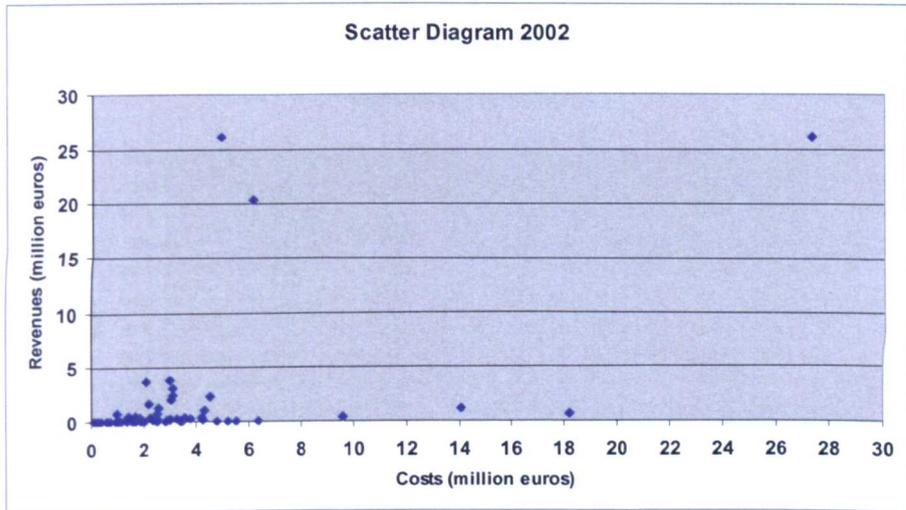
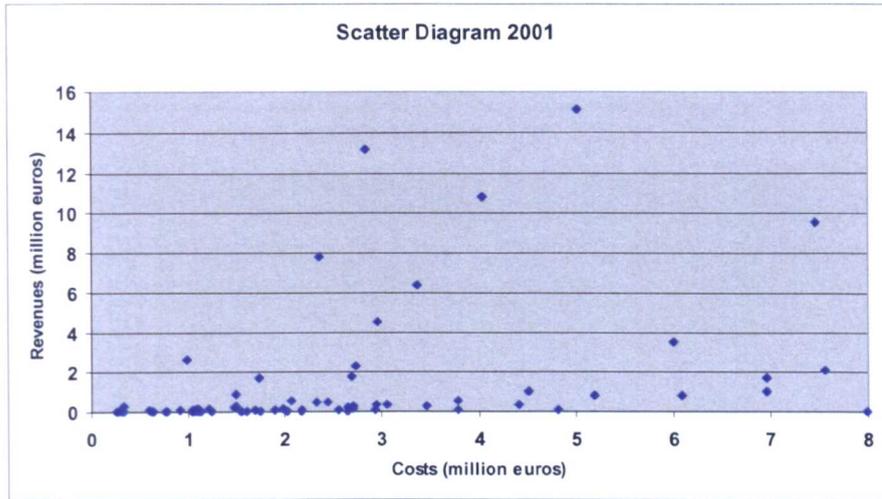




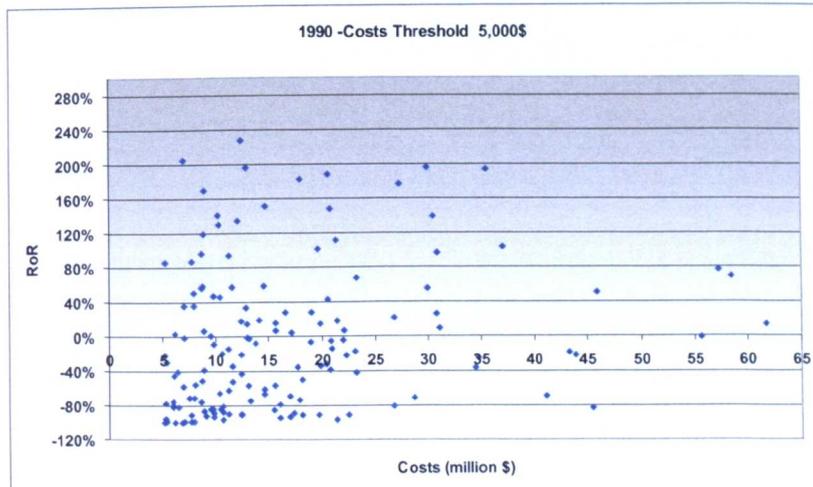
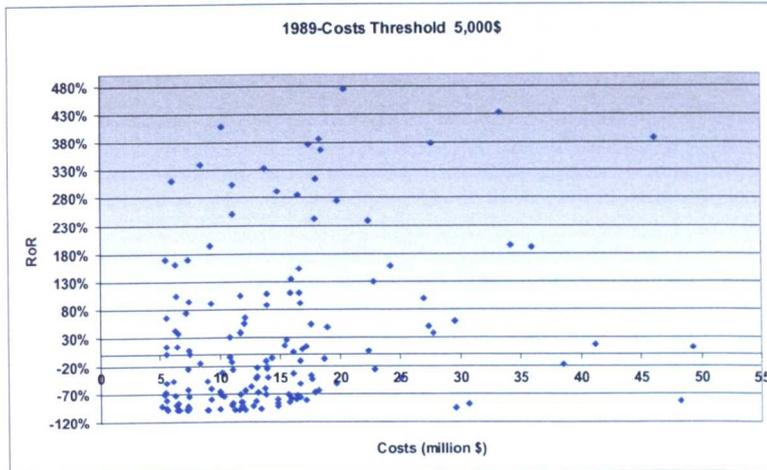
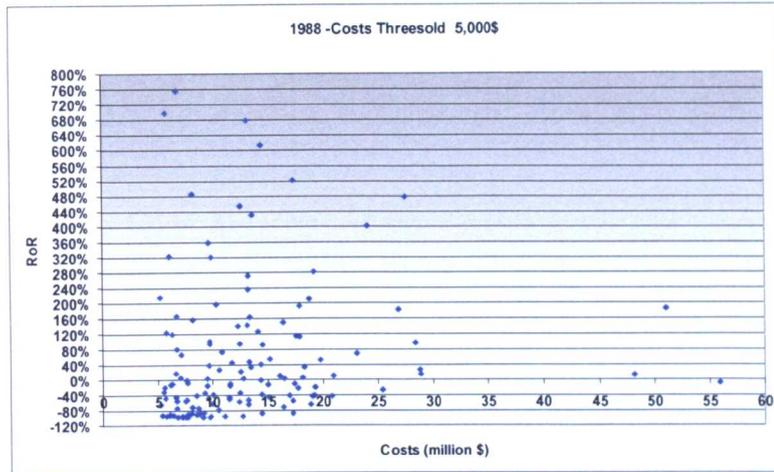
**Appendix 2 – Annual scatter diagrams.**  
**Relation between costs and revenues of each film – Italian Dataset**

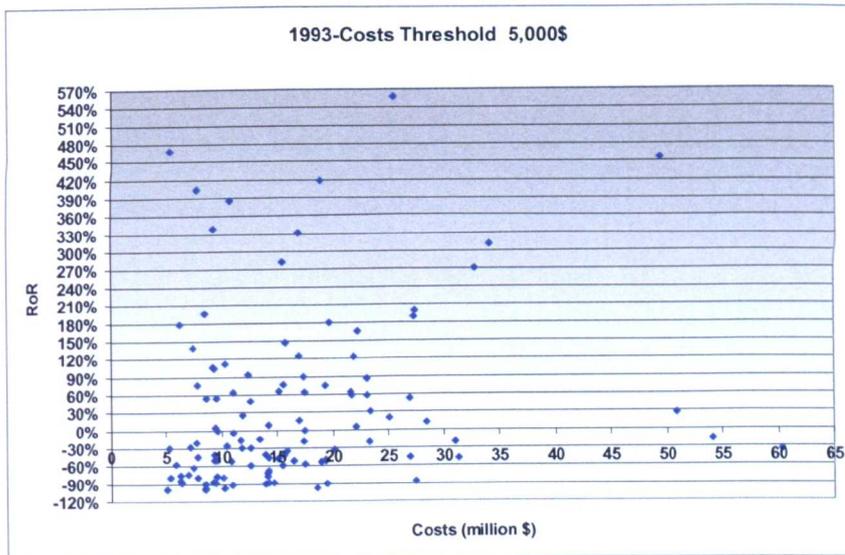
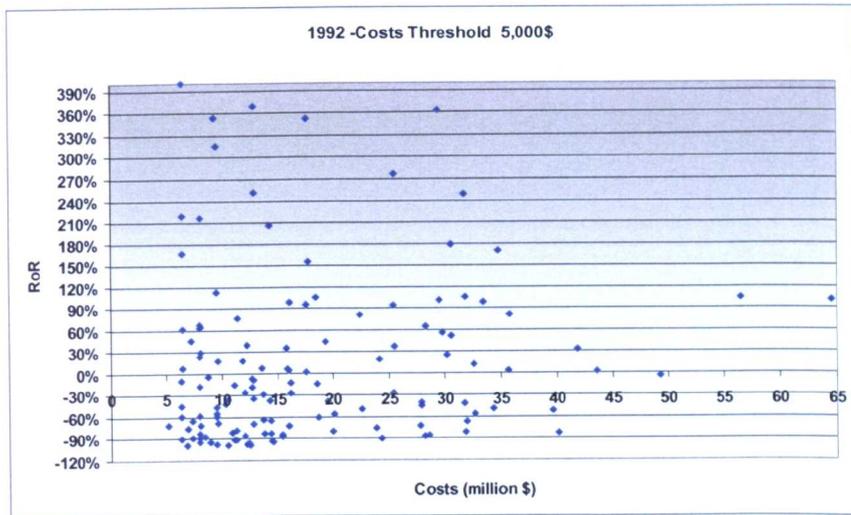
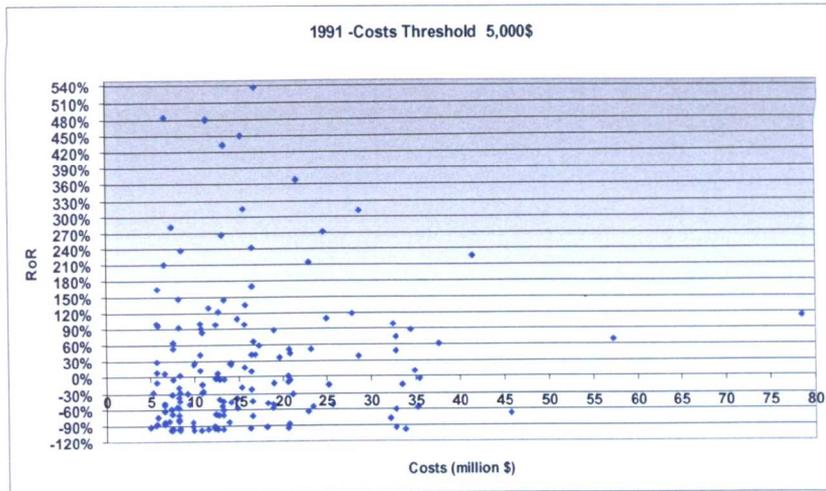


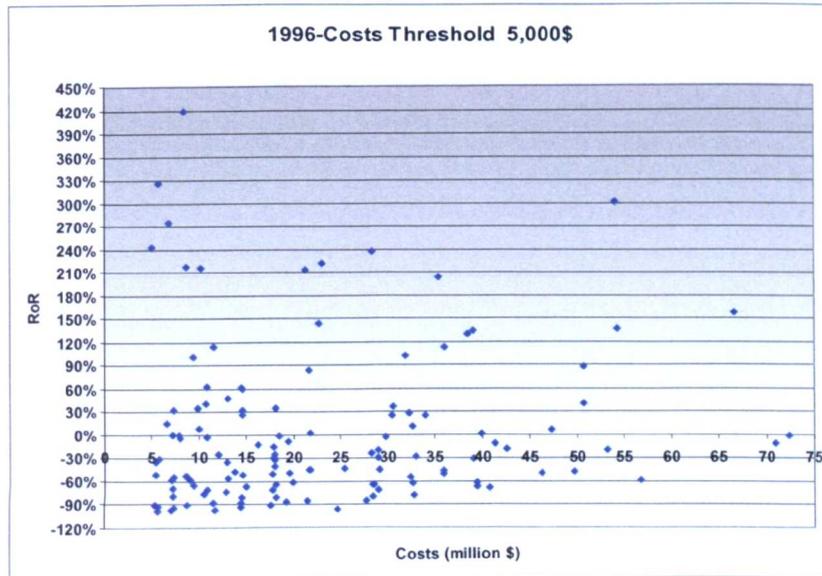
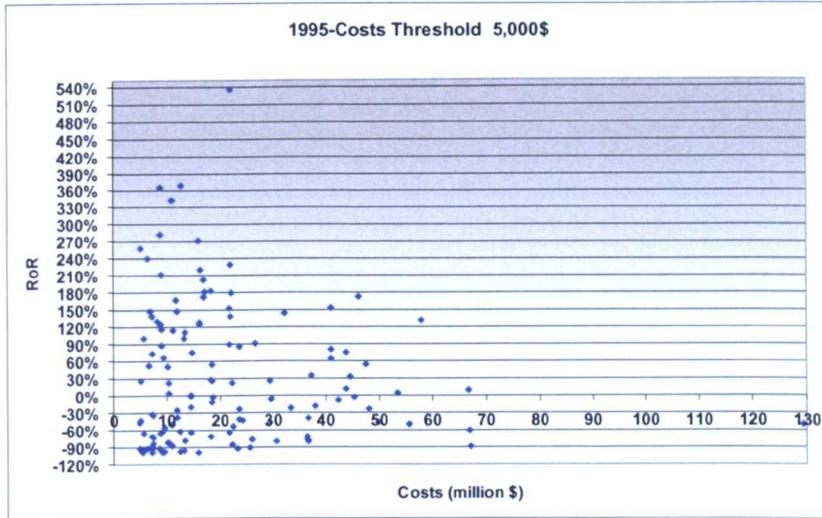
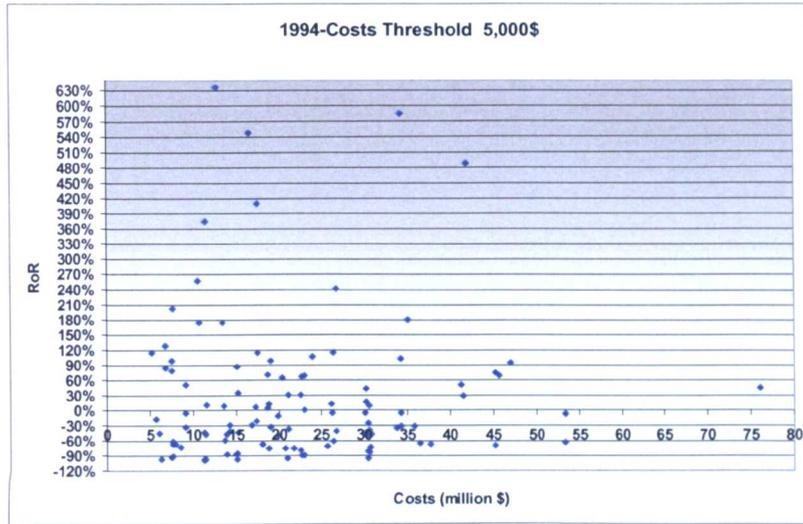


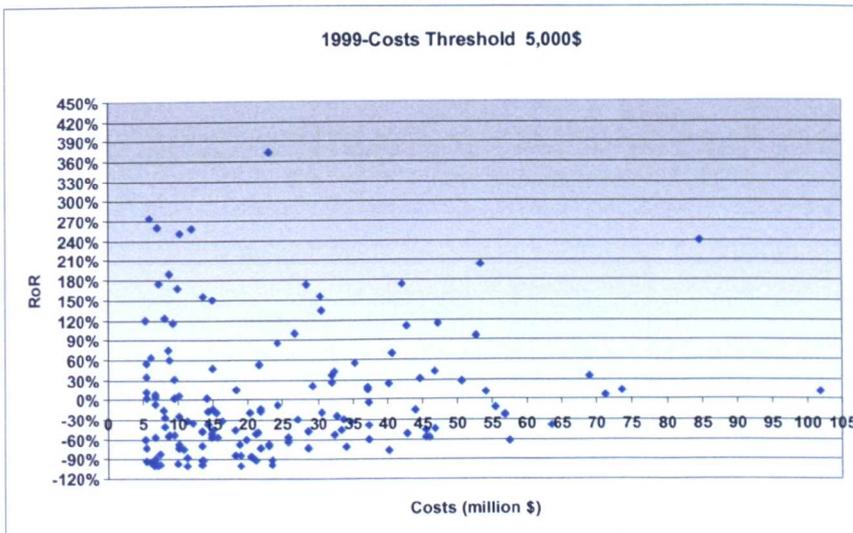
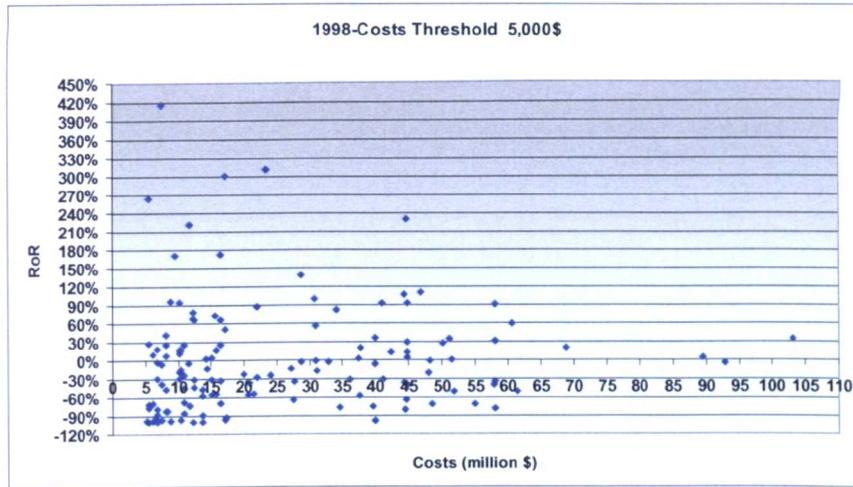
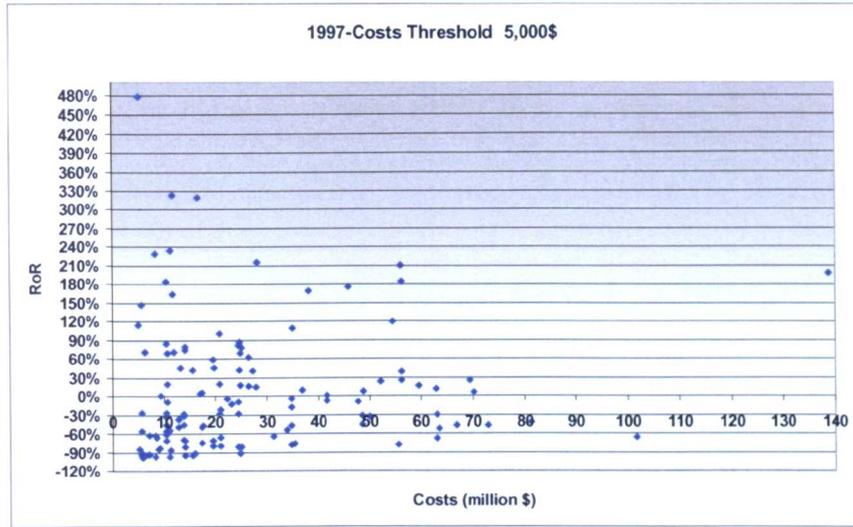


**Appendix 3 - Annual scatter diagrams**  
**Relation between costs and rates of return of each film – US Dataset**









*Appendix 4 - Annual scatter diagrams*  
*Relation between costs and rates of return of each film – Italian Dataset*

