

## **The Role of Organizational Form in Project Choice: Evidence from the Movie Industry**

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*This paper examines the role of organization form on the real investment decisions of a firm. Using detailed project-level data on hundreds of projects, this paper investigates risk and returns of projects in the movie industry characterized by two distinct and separate organization forms: one by firms that cater to the needs of consumers in small specialized niches and the other by firms that cater to the mass market. The findings are consistent with theories in which firms with organization forms plagued by agency problems engage in distorted investment behavior.*

**Field of Research:** Agency Problems, Organization Form, Movie Industry

### **1. Introduction**

Organization form and its effects on managerial decisions remains a fundamental issue in financial economics. Extant evidence shows the extent to which this issue has been investigated *within a given industry*. Early research includes Myers and Smith (1981) for the insurance industry as well as Brickley and Dark (1987) for the franchising industry. More recent research on the effects of alternative organizational forms includes Deli and Varma (2002) for the investment industry, Cashman, Harrison and Seiler (2014) for the real estate industry and Gilje and Taillard (2016) for the natural gas industry.

Whereas the above papers make important contributions on how various organization forms influence managerial decisions, an organization form that characterizes many industries has received little attention. In this relatively unexplored organization form, industries are characterized by two distinct and separate organization forms: one categorized by firms that cater to the needs of consumers in small specialized niches and the other by firms that cater to the mass market. Although these organization forms are prevalent in a variety of industries, little is known about their effect on firm performance. To address this gap in the literature, this paper investigates the above alternative organization forms for the movie industry.

The movie industry provides an ideal setting to investigate issues related to the effect of organization form on real investment decisions for two reasons. First, two types of organization structures dominate this industry. Much of the movie industry is composed of large firms (henceforth referred to as majors) that have integrated production and distribution facilities and focus largely on the desires of widespread audiences. The rest of the industry consists of smaller firms (henceforth referred to as indies) that attempt to satisfy the wants of more specific markets. Second, rich project-by-project data are available for a large number of projects in the movie industry.

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Using a sample of more than 3,000 movie projects over an 18-year period, this paper compares real investment behavior of major and indie firms. If the wide-appeal of movie projects by major firms generate more competitive advantage than movie projects by indie firms, these projects would be associated with higher returns than movie projects by indie firms. To the extent, however, that movie projects by managers of major firms are chosen to decrease risk to enhance job security, movie projects by major firms would be associated with lower returns than movie projects by indie firms. The findings are consistent with theories in which major firms are plagued by agency problems, leading to distorted investment behavior by major firms relative to indie firms.

The rest of the paper is structured as follows: In section 2, the related literature is reviewed and testable hypotheses are suggested. Section 3 describes the methods used for the investigation. Section 4 reports the results including a discussion of the risk as well as the prestige associated with movie projects and a multivariate analysis of the performance of these projects. Section 5 presents the conclusions.

### **2. Related Literature and Hypothesis Development**

This paper contributes to three strands of literature on organization form. First, this paper is related to a large body of empirical literature that has developed over the last several years on the use of alternative organization forms in the investment management industry. For example, Deli and Varma (2002), in their investigation of open-end versus closed-end organization forms, show that investment funds that hold less liquid securities with less transparent prices are more likely to be closed-end. Cashman and Deli (2009) examine that organization arrangements concerning the location of decision rights in the context of whether these rights remain with an advisor or whether they are allocated to an independent subadvisor. In contrast to these papers this paper examines the use of alternative organization forms for *real* investment decisions.

Second this paper also contributes to the literature on the effect of alternative organization forms on investment returns in the movie industry. Natividad (2013), for example, investigates the effects of multidivisional structure, one of the most common organization forms across many markets, within the context of the movie industry. Varma (2015) compares the real investment behavior of diversified and focused firms using project-by-project data for a comprehensive sample of projects in the movie industry. Varma (2016) examines investment decisions sought by managers in the movie industry within the context of two alternative organization structures: one in which managers may seek autonomy because they disagree with investors on what course of action will maximize a project's returns and an alternative one in which managers may want autonomy to allow them to extract private benefits from the project. Different from all of the above papers, this paper examines investment decisions in the movie industry within the context of two distinct and separate organization forms: indies that accommodate needs of consumers in small specialized niches and major firms that cater to the mass market.

Finally, this paper contributes to the very small literature on major and indie organization forms in the movie industry. Zukerman and Kim (2003) examine major versus indie organization forms in the movie industry in the context of a tradeoff between how a major identity is essential for success in a mass market but can be damaging in the art house

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market. In contrast, this paper investigates the major versus indie organization forms in the framework of a tradeoff between advantages from the wide-appeal of movie projects by major firms and private benefits to managers of these firms from decreasing risk to enhance job security.

Extant theoretical research suggests two conflicting managerial reasons for choosing a real project. If value or profit maximization is the eventual purpose for the manager, choosing movie projects, one would expect movie projects by major firms to have two advantages as compared to movie projects by indie firms. First, because the wide-appeal of movie projects by major firms is usually linked with a significantly large audience population, movie projects by majors may generate more competitive advantage than movie projects by indie firms. Second, on account of their extensive appeal, movie projects by major firms may be regarded to be less risky than movie projects by indie firms. Extant theories in finance suggest that managerial attempts to reduce risk can enhance firm value due to capital market imperfections like costs of financial distress, costly external financing, and taxes (Aretz and Bartram, 2010). This discussion suggests the following hypothesis:

**H1:** Because movie projects by major firms generate higher competitive advantages and/or decrease risk, they are associated with higher returns than movie projects by indie firms. This hypothesis, which is labeled the *Shareholder-Interest Hypothesis*, is based on value or profit maximization being the ultimate motive for the manager.

On the other hand, managers may have motives different from value or profit maximization with the movie projects they make. Such managers may select movie projects for a range of private benefits arising from career and other concerns. For example, managers may be attracted to the creative complexity associated with some types of movie projects and decide to make such projects because of the prestige offered by such projects. If the creative complexity of movie projects by managers of indie firms are more likely to provide more prestige to managers of indie firms, movie projects by indie firms are associated with lower returns than movie projects by major firms. Still another private benefit may arise from movie projects being perceived to be less risky. Given the severe uncertainty in the movie industry (De Vany and Walls 2002) and the dearth of managerial job security (Weinstein 1998), Ravid and Basuroy (2004) assert that several decisions about project choice in the movie industry are fundamentally driven by risk minimization to improve job security. As in the discussion on the *Shareholder-Interest Hypothesis*, managers may choose to make certain movie projects because they feel that these are less risky; however, they now do so to enhance their job security. If so, a private benefit that managers may attempt to extract from their project choice decisions is job security from risk minimization.

This discussion suggests the following hypothesis:

**H2:** To the extent that the creative complexity of movie projects by managers of indie firms are more likely to provide more prestige to managers of indie firms, movie projects by indie firms are associated with lower returns than movie projects by major firms. To the extent that movie projects by managers of major firms are chosen to decrease risk to enhance job security, movie projects by major firms are associated with lower returns than movie projects by indie firms. This hypothesis, which is labeled the *Management-Interest Hypothesis*, assumes that managers choose projects that maximize their private benefits to the detriment of the shareholders.

### 3. Methods

To begin the investigation, an initial sample was assembled of movie projects that only included narrative English-language feature films that were released in theatres in North America from 1990 to 2007. Documentaries and foreign-language movies were excluded to make the characteristics of the movies in the sample more similar. Also, movies that were not released on at least 100 screens during their theatrical run were eliminated, because such movies tend to be classified as art-house movies that are best modelled independently.

From the final sample of movies, two subsamples were constructed: a subsample of movie projects made by major firms and another subsample of movie projects made by indie firms. To identify movies made by major firms, the procedure used in Goettler and Leslie (2005) was followed with focusing attention on movie projects produced by the “Big 8” majors: Disney, DreamWorks, MGM, Paramount, Sony, Universal, Warner Bros., and 20<sup>th</sup> Century Fox. Also, following Corts (2001), who presents evidence that subsidiaries/divisions of major firms act as assimilated constituents of their parent studio, movie projects made by subsidiaries of major firms were treated as movies produced by the major. All other movie projects remaining in the final sample were included in the subsample of movie projects made by indie firms.

For each movie project in both the major and indie firm subsamples, data items were obtained to provide proxies for estimating the performance, private benefits and control variables used in the multivariate analysis. Descriptions of three variables--awards, star power and composite critical ratings-- and the sources of data used to compute these variables appear below. All of the remaining data items were obtained from *Baseline/Film Tracker* and its partner *Kagan LLC*. Furthermore, to confirm and obtain missing data items from these two sources, the data in *Variety*, *IMDB* and *Box Office Mojo* was used.

To estimate a project's performance, the project's global return was used and calculated by dividing revenues by costs in both domestic and foreign markets. For managerial private benefits, two variables were used: one for job security from risk minimization and the other for prestige. To create a variable for job security from risk minimization, a close examination was conducted of the returns for all movies in the sample. First, the variance of the returns for the movie projects in the subsample of indie firms was examined and compared to the variance for the movie projects in the subsample of major firms. Next, to gain insights into whether these are any meaningful differences between the upside and downside risks of the movies in the sample, variances of returns were decomposed into mean squared deviations (MSDs) of returns when returns are greater than or equal to one and also when returns are less than one. Finally, the distribution of the returns were examined to obtain an understanding which movie projects break-even as well as which ones are more likely to be flops because, as others have noted, it is only with flops that managers lose their jobs.

As a measure for prestige, awards given to the movies in both subsamples were used. Following empirical research by Gemser, Leenders and Wijnberg (2008) who suggest that the prestige gained by an award can vary depending on the types of persons (peers versus experts) that give the award, two categories of awards were used: one where the selection system only contains peers and the other where the selection is done only by experts. The awards from peer groups in the sample include the Academy Awards, the Directors Guild

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Awards, the Golden Laurel Awards (PGA Awards), and the Independent Spirit Awards. The awards from expert groups in the sample include the Critics Choice Awards, the Golden Globe Awards, the Los Angeles Film Critics Association Awards, and the New York Film Critics Circle Awards. Data on all of the above awards was obtained from the websites of the awards. For all the awards used, data was collected on nominees, when available, and winners. Also, data was collected on all awards as well on major awards (Best Picture, Best Actor, Best Actress, and Best Director). Finally, data was collected for every year in the sample except for the years when no award was given.

A comprehensive list of the determinants of commercial success in the movie industry is discussed in Hadida (2009). Many of these determinants were used as control variables in the regressions discussed in the next section. Specifically, the variables used included a sequel dummy, a star power dummy, the budget, an R-rated dummy, the maximum number of screens on which a movie is released, a season dummy and a numerical variable for the composite critical reviews of the movie. To identify powerful stars in the movies in the sample, the main source used was *James Ulmer's* list of A and A+ stars. The star dummy takes on a value of unity when the star is identified as being powerful and zero otherwise. The dummy variable "sequel" takes on a value of unity if a movie in the sample is a sequel and zero otherwise. The season dummy takes on a value of unity if a movie in the sample was released in theatres in North America during the Christmas/Summer season and zero otherwise. The R-rated dummy takes on a value of unity if a movie in the sample is rated R by the Motion Picture Association of America to assist parents in making decisions about the appropriateness of a given movie for children. Finally, the composite critical review variable is constructed using the average score of two widely-known internet resources: rottentomatoes.com and metacritic.com. Both of these resources distil into a readily usable single number, the critical evaluations of movie projects received from respected critics around the time a movie gets its theatrical release.

## 4. Results and Discussion

Descriptive statistics for the movie projects made by major firms as well as indie firms in the sample are presented in Table 1. As indicated in Panel A, the sample contains 1,809 (58%) movie projects made by major firms and 1,312 (42%) made by indie firms. Thus the number of movie projects by major firms in the sample is larger than the number by indie firms.

To preserve comparability, the numbers for budget, total revenues and returns shown in Panel B were adjusted for inflation. The means and medians of the movie revenues and budget variables indicate that movie projects by major firms are associated with larger revenues as well as larger budgets than those by indie firms. These results provide univariate evidence showing that movie projects by major firms are related with more commercial success but are also associated with larger capital outlays than those by indie firms.

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**Table 1**

Sample description					
Panel A: Sample composition					
Production firm type		Number (% of sample)			
Movies made by major firms		1,809 (58.0)			
Movies made by indie firms		1,312 (42.0)			
Panel B: Performance-based characteristics for movie projects made by major vs. indie firms					
		Major firms (1)	Indie firms (2)	p-value for the difference between (1) and (2)	
Total revenue	Mean	203.19	95.88	0.000	
	Median	121.50	47.37	0.000	
Budget	Mean	49.00	25.56	0.000	
	Median	36.06	17.73	0.000	

We use t-tests to compare differences in means, the Kruskal-Wallis test to test the difference in medians. All reported p-values are for two-tailed tests.

The findings are not directly comparable to Zukerman and Kim (2003) as they examine only revenues for movie projects by majors and indies for a much smaller sample of 396 movies for a single year. Despite the importance of including all streams of revenues and costs, the use of only revenues by many academic studies is not surprising. Hadida (2009) finds that over a three-decade period only eight studies use both revenues and costs and do so usually by only using domestic income, possibly because of the high cost of obtaining the necessary data using more comprehensive measures of performance.

To investigate whether there are any meaningful differences between the risks of the movies in the sample, the variance of returns are calculated. As shown in Table 2, the results indicate that the variance of the movie projects by major firms is significantly smaller than that for movie projects by indie firms. Next, to determine whether these are any meaningful differences between the upside and downside risks of the movies in the sample, variances of returns are decomposed into mean squared deviations (MSDs) of returns when returns are greater than or equal to one and also when returns are less than one. As with variances, the MSDs of the movie projects by major firms are significantly smaller than that for movie projects by indie firms.

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**Table 2**

Comparison of risk characteristics for movie projects made by major vs. indie firms

	Major firms (1)	Indie firms (2)	p-value for the difference between (1) and (2)
N	1,809	1,312	
Variance of rate of return	0.75	1.06	0.000
N	1,211	770	
Mean squared deviation (MSD) of rate of return when rate of return $\geq 1$	0.76	0.93	0.000
N	598	542	
Mean squared deviation (MSD) of rate of return when rate of return $< 1$	0.22	0.26	0.000
N	1,809	1,312	
Percentages with various rate of return values			
3.00 and higher	6.08	7.85	0.053
1.00 and higher	66.94	58.69	0.000
0.50 to 0.99	24.49	24.01	0.758
0.01 to 0.49	8.57	17.30	0.000

We use analysis of variance to compare differences in variances, the Pearson's chi-squared test to compare differences in percentages, and an F-test to compare differences in mean squared deviations (MSDs). All reported p-values are for two-tailed tests.

An examination is also conducted for whether movie projects by major firms are more likely to break even than those for indie firms. The tests indicate that 66.94 percent of movie projects by major firms in the sample break even as compared to only 58.69 percent of movie projects by indie firms. The difference between these percentages is statistically significant. Thus the results indicate that movie projects by major firms are more likely to break even than movie projects by indie firms.

Finally, in the investigation of differences in the risks of the movies in the sample, an examination is conducted for the distribution of returns for movie projects by major firms as well as those for indie firms using industry heuristics such as a return less than 0.5 represents a "flop." Ferrari and Rudd (2008) note that "with studios able to only take a few bets per year, and executives justifiably worried that one wrong decision will end a career, the opportunities for learning are restricted and the incentives to sacrifice return for comfort are strong" (p. 38). The tests indicate that 8.57 percent of the movie projects by major firms in the sample flop as compared to 17.30 percent of the movie projects by indie firms in the sample. The difference between these percentages is statistically significant. These results show that the probability of failure for movie projects by major firms is almost half of that for

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movie projects by indie firms. Taken together the results from Table 2 provide evidence that the risk for movie projects by major firms is smaller than that for movie projects by indie firms.

**Table 3**

Comparison of awards for movie projects made by major vs. indie firms

	Major firms (1)	Indie firms (2)	p-value for the difference between (1) and (2)
N	1,809	1,312	
Percentage with at least one Peer or Expert Award nomination	25.43	23.70	0.270
Mean number of Peer or Expert Award nominations	1.21	1.09	0.301
Percentage with at least one Peer or Expert Award win	11.66	12.27	0.605
Mean number of Peer or Expert Award wins	0.42	0.41	0.914
Percentage with at least one major Peer or Expert Award nomination	13.71	13.80	0.945
Mean number of major Peer or Expert Award nominations	0.43	0.45	0.682
Percentage with at least one major Peer or Expert Award win	4.26	5.72	0.061
Mean number of major Peer or Expert Award wins	0.14	0.17	0.388

We use the Pearson's chi-squared test to compare differences in percentages and t-tests to compare differences in means. All reported p-values are for two-tailed tests.

To measure prestige from making a particular type of a movie, an investigation is conducted for the awards given by peer as well as expert groups for the movies in the sample. Table 3 presents comparisons for the awards received by movie projects in the major firms subsample with those received by movie projects in the indie firms subsample. In the first two rows, an examination is conducted for award nominations by investigating the percentage of movies that received at least one nomination and also by checking the mean number of award nominations received. In both cases there is no significant difference between award nominations, conditional on whether the movie project is in the major versus indie firms subsample. The absence of a significant difference is sustained when this examination is repeated in the next two rows by now looking at movie projects that won awards.

Next a replication of the investigation is conducted by looking only at major awards (Best Picture, Best Actor, Best Actress, and Best Director) received by movie projects in the major and indie firms subsamples. Once again, irrespective of whether the examination is for award nominations or wins, there is no significant difference between major award nominations or wins, conditional on whether the movie project is the major firms versus indie

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firms subsample. Collectively, the results on awards suggest an absence of a significant difference in prestige to be gained from making movie projects by major versus indie firms.

The next set of tests relate to the commercial performance of the movies in the sample. The *Management-Interest Hypothesis* predicts that performance of movie projects in the major firms subsample should be worse than those projects in the indie firms subsample, whereas the *Shareholder-Interest Hypothesis* makes the reverse prediction. The key test variable is the major dummy variable set equal to unity if the movie is in the major firms subsample and zero otherwise. The control variables used were discussed in an earlier section.

**Table 4**

OLS regression analysis of the rates of return and revenues

Variable	Rate of Return	Log of Rate of Return
Major	-0.160 (0.00)	-0.034 (0.00)
Sequel	0.248 (0.000)	0.076 (0.000)
Star Power	0.041 (0.265)	0.019 (0.103)
Composite Critical Reviews	0.018 (0.000)	0.006 (0.000)
Maximum Screens	0.001 (0.000)	0.000 (0.000)
Season	0.223 (0.000)	0.069 (0.000)
R-Rated	0.003 (0.909)	0.005 (0.606)
Budget	-0.009 (0.000)	-0.003 (0.000)
Year fixed effects	Yes	Yes
N	3,019	3,019
Adjusted R <sup>2</sup>	81.5%	42.9%

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P-values of regression coefficients obtained from the OLS regression analysis are reported in parenthesis. All regressions control for year fixed effects whose coefficient estimates are suppressed. The coefficient on the intercept is also suppressed.

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Table 4 presents the results. Column (1) of Table 4 shows the regression results using movie project returns as the dependent variable and column (2) repeats the results using the logarithmic transformation of returns as the dependent variable. Whereas the signs of the control variables are similar to those in previous studies, the major dummy is negative and statistically significant. On the whole, these results indicate that the performance of movie projects in the major firms subsample is worse than movie projects in the indie firms

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subample. Taken together with the results from Table 2, indicating that movie projects by major firms are less riskier than those by indie firms, these results are consistent with the *Management-Interest Hypothesis*, according to which the returns from movie projects by major firms are afflicted by inefficiencies that arise due to agency problems. These results are also supportive of the possibility that risk minimization to improve job security is an important private benefit from project choice.

The findings are comparable to Natividad (2013) who examines the influence of the multidivisional versus universal form on investment returns in the movie industry. He finds that the form with higher returns (the multidivisional form) is also associated with smaller capital investments. Similarly, this paper finds the form with higher returns (the indie form) is also associated with smaller capital investments. Collectively these results indicate, as noted by Natividad (2013), that what matters to higher returns is smarter rather than larger capital investments.

In conclusion, even though described all through the body of the paper, the differences between this paper and that of Zukerman and Kim (2003) bear reiterating. Zukerman and Kim (2003) also examine the major versus indie organization forms in the movie industry in the context of a tradeoff between how a major identity is essential for success in a mass market but can be damaging in the art house market. In contrast, this paper investigates the major versus indie organization forms in the framework of a tradeoff between the advantages from the wide-appeal of movie projects by major firms and the private benefits to managers of these firms from decreasing risk to enhance job security.

For a sample of 396 movie projects by majors and indies all released in a single year, Zukerman and Kim (2003) examine the performance of these projects using only revenues. Despite the importance of including all streams of revenues and costs, they measure performance of movie projects by only using domestic revenues possibly because of the high cost of obtaining the necessary data. In contrast, this paper investigates over 3,000 movie projects over an 18-year period and uses more comprehensive measures of revenue and cost streams to calculate both return and risk for the projects in the sample. Thus the two papers are quite different in their scope and execution.

## 5. Conclusions

This paper attempts to gain insights into competing views about organization form by comparing the investment behavior of major and indie firms in the movie industry. Specifically the paper examines risk, return and other characteristics of investments by major firms and a comparison sample of investments by indie firms, all in the movie industry.

An investigation of the movie projects in the sample is conducted within the context of extant theoretical research that suggests two prominent managerial motives for choosing a particular project. On the one hand, project choice by managers may be stimulated by needs to extract private benefits such as prestige or job security. To the extent that major firms are afflicted by wastefulness that arises due to agency problems, the *Management-Interest Hypothesis* advocates that movie projects by indie firms would be associated with higher returns than those by major firms. On the other hand, the *Shareholder-Interest Hypothesis* asserts that because movie projects by major firms generate higher competitive advantages

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and/or decrease risk, they are associated with higher returns than movie projects by indie firms

The findings indicate that the risk associated with movie projects by major firms is significantly lesser than that for projects by indie firms. Furthermore, the returns for movie projects by major firms are significantly lesser than those for projects by indie firms. Taken together, these results are consistent with the view that major firms are plagued by agency problems.

The results of this have important implications for firms choosing between major and indie organization forms. The findings show that movie project by majors are associated with lesser risk than those by indie firms because majors make projects catering to mass audiences. On the other hand, the results show that performance of projects by majors is inferior to that of indies possibly because of agency problems with majors. Both of these considerations must be kept in mind by firms choosing between these two organization forms.

As with all other studies in financial economics, this paper has an important limitation, which is that the results are based on projects in the movie industry and extensions to other industries must be made with caution. While future research can investigate the broader generality of the results, there are advantages of studying issues related to the choice between the major and indie organization form using the movie industry. First, the movie industry is dominated by majors that have integrated production and distribution facilities to cater largely to the desires of widespread audiences whereas indies attempt to satisfy the wants of more specific markets. Second, rich project-by-project data for a large number of projects is available for this industry.

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