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Managerial Autonomy, Disagreement and Investment Policy: Evidence from the Movie Industry

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Managers may seek autonomy because they disagree with investors on what course of action will maximize a project's returns. Alternatively, managers may want autonomy to allow them to extract private benefits from the project. I examine managerial motives for seeking autonomy using rich ex post project-by-project data for a comprehensive sample of projects in the movie industry. My findings are consistent with a competitive equilibrium in which managerial autonomy does not distort investment efficiency. Specifically, managers seeking autonomy are matched with projects where disagreement between managers and investors is more likely. Similarly, managers without autonomy are matched with projects where disagreement is less likely to arise and such projects fetch lesser private benefits to managers.

Field: Agency Problems, Disagreement Models, Movie Industry

1. Introduction

Recent disagreement models suggest that managers may seek autonomy with real investment decisions because managers and investors disagree on what decision will maximize a project's returns; with autonomy, managers can ensure that whatever they think is right for the project is what gets done. On the other hand, extant agency models contend that managers may want autonomy to extract private benefits from the project. In this paper I empirically investigate managerial motives for managerial autonomy with investment policy decisions.

Empirical tests of the above explanations for managerial autonomy are complicated by two issues. First, data on the performance of real investments made by firms is typically only available at the firm- rather than the project-level. Second, proxies for theoretical constructs such as managerial autonomy, manager-investor disagreement and managerial private benefits are either not easily available or only available at the firm-level. To address these issues, I conduct my analysis of managerial autonomy for investment policy decisions using the movie industry as my laboratory. Rich project-by-project data is available for hundreds of projects in this industry. Also, the movie industry offers reasonable proxies of theoretical constructs for testing theories in financial economics and other disciplines. 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 because "detailed information is available on each project's

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human talent and narrow market niche, thus helping explore the causal mechanisms linking multidivisional strategy and investment returns more directly" (p. 595).

Using project-by-project data for a comprehensive sample of projects in the movie industry, the results of my investigation show that managers seeking autonomy are matched with projects where disagreement between managers and investors is more likely. Similarly, managers without autonomy are matched with projects where disagreement is less likely to arise and such projects fetch lesser private benefits to managers. My results also indicate that the performance of movie projects with managerial autonomy is not better or worse than movie projects without managerial autonomy. Collectively, these results are consistent with a competitive equilibrium in which managerial autonomy does not distort investment efficiency.

The remainder of the paper proceeds as follows. In section 2, I discuss related literature on managerial autonomy, agency costs, and disagreement in investment policy and also develop testable hypotheses. Section 3 describes the methods used for my analysis. Section 4 reports my results, including a discussion of the private benefits gained from movie projects. Section 5 summarizes my key findings and concludes.

2. Related Literature and Hypothesis Development

2.1 The Role of Managerial Autonomy, Agency Costs, and Disagreement in Investment Policy

My paper contributes to three strands of literature. First, a small but growing body of empirical research indicates that managers matter for a firm's investment policies. As summarized in Li, Low, and Makhija (2014), investment policy decisions are affected by management styles (Bertrand and Schoar (2003)), managerial overconfidence (Malmendier and Tate (2005, 2008)), managerial miscalibration (Ben-David, Graham, and Harvey (2013)), managerial attitude (Graham, Harvey, and Puri, (2013)) and management age (Yim (2013)). My paper seeks to contribute to this rising body of research by showing how managerial autonomy affects investment decisions by using the movie industry as my laboratory for testing this relationship.

Second, a huge body of literature has evolved over at least the last three decades on the role of agency problems between investors and managers for a variety of corporate finance decisions due to the separation of ownership and control. McMullen and Varma (2014) summarize recent empirical evidence on the role of agency problems with investment policy decisions in the movie industry. I contribute to this work with an investigation of the effects of managerial autonomy on agency problems with investment policy decisions in the movie industry.

Third, my work is also related to the relatively recent literature on the effects of disagreement between investors and managers for a variety of decisions in corporate finance. See, for example, Allen and Gale (1999), Boot, Gopalan, and Thakor (2006, 2008), Boot and Thakor (2011), Dittmar and Thakor (2007), Song and Thakor (2010), Thakor and Whited (2011), and Van den Steen (2004, 2010a, 2010b). The central message from this literature is that disagreement between investors and managers plays an important role in managerial decisions in corporate finance, both in terms of theoretical models and more recently in the context of empirical evidence.

In the context of disagreement between managers and investors in investment policy decisions, my work is most closely related to Thakor and Whited (2011). They provide empirical evidence showing that disagreement between managers and investors affects corporate investment. Unlike Thakor and Whited (2011) who examine investment at the firm-level, I empirically examine the role of manager-investor disagreement using rich ex post project-by-project data for a comprehensive sample of projects in the movie industry.

2.2 Hypothesis Development

Based on the literature described above, I first develop a hypothesis in which managerial autonomy considerations are motivated by extant theories premised on agency conflicts of interest between managers and investors. Second, I discuss a hypothesis in which managerial autonomy considerations are motivated by relatively newer theories of disagreement between managers and investors of firms. Finally I suggest a hypothesis implied by competitive equilibrium.

2.2.1. Hypothesis related to agency models. Since the seminal work on agency problems by Jensen and Meckling (1976), an extensive literature has documented the agency costs associated with the separation of ownership and control. Extant theoretical research on agency problems suggests that managers may seek autonomy to enable them to extract a variety of private benefits and exacerbate agency problems. For example, in the movie industry, managers may be attracted to the creative complexity offered by certain projects (because of the prestige that making such projects offers) and choose managerial autonomy to enable them to make these projects without any form of opposition from investors. Furthermore, given the extreme uncertainty in the movie industry (DeVany and Walls, 2002) and the absence of managerial job security (Weinstein, 1998), Ravid (2004) argues that many decisions made by managers in the movie industry are essentially an end result of risk minimization to enhance job security. If so, still another private benefit that managers may attempt to extract from choosing managerial autonomy is the ability to choose projects that will enhance their job security from risk minimization without any form of resistance. This discussion suggests the following hypothesis:

H1: To the extent that project choice by managers is motivated by desires to extract private benefits such as prestige or job security, projects by firms with managerial autonomy would be associated with lower returns and lesser risk than those for firms without managerial autonomy. I label this hypothesis the *Agency Costs Hypothesis.*

2.2.3. Hypothesis related to models of disagreement. Recent theoretical research emphasizes how managerial autonomy considerations can affect various managerial decisions, including investment policy. Particularly pertinent for my investigation are the theoretical models developed by Van den Steen (2010b) and Boot and Thakor (2011). In these models maximizing investor returns is the ultimate motive for the manager but there is disagreement between managers and investors on the projects that will achieve this goal. Managers in such firms seek autonomy to enhance their capability to maximize investor returns and such autonomy is valuable to the manager for projects with greater uncertainty in their ultimate outcomes.

Van den Steen (2010b) provides important insights to distinguish between the motives sought for managerial autonomy by key players in disagreement and agency models. With the disagreement model, managerial autonomy is sought because key players disagree on what decision will

maximize project returns and each player seeks control to guarantee that whatever she thinks is correct for the project gets done. On the other hand with agency models, players agree on what decisions will maximize project returns but prefer to extract private benefits at the cost of the project.

This discussion suggests the following hypothesis:

H2: Movie projects by firms associated with managerial autonomy are associated with higher returns than those by firms without managerial autonomy. This hypothesis, which I call the *Disagreement Hypothesis,* is based on maximizing investor returns being the ultimate motive for the manager.

2.2.3. Hypothesis related to competitive equilibrium. Fama and Jenson's (1983a, b) arguments related to organization survival have important implications for the organization choice discussed in this paper. If movie projects with managerial autonomy produced systematically lower returns than those without managerial autonomy, one would expect that movie projects with managerial autonomy would not continue to exist in the marketplace. Such suboptimal organization forms would particularly not endure in a setting as lucrative as the movie industry. If, on the other hand, movies projects with managerial autonomy produced systematically higher returns than those without managerial autonomy, one would expect all movie projects to have managerial autonomy. That both projects with and without managerial autonomy manage to survive and that not all movie projects have managerial autonomy suggests that both organization forms are purposefully chosen to match with managerial motives.

For example, managers seeking autonomy are matched with projects where disagreement between managers and investors is more likely. Similarly, managers without autonomy are matched with projects where disagreement is less likely to arise and such projects fetch lesser private benefits to managers. This explanation of organization choice suggests the following hypothesis.

H3: To the extent that organization choice is optimal, movie projects associated with managerial autonomy generate returns that are not significantly different than those by movie projects without managerial autonomy. I label this hypothesis the *Competitive Equilibrium Hypothesis*.

In essence, the *Competitive Equilibrium Hypothesis* suggests that, in a competitive environment (such as one that exists in the movie industry), if an organization structure with or without managerial autonomy is an inefficient arrangement, then such a structure would be competed out of existence. So, if projects with managerial autonomy continue to exist, the benefits that come from such a structure, due to reduced manager-investor disagreement, tend to be large. Similarly, if projects without managerial autonomy endure, the costs that come from such a structure, due to managerial private benefits described in the agency models above, tend to be low.

Given the above discussion, the *Competitive Equilibrium Hypothesis* has two other testable propositions. First, managers with autonomy are less likely to be associated with projects without manager-investor disagreement. Second, managers without autonomy are likely to be linked with projects that fetch smaller private benefits than managers with more autonomy.

3. Methods

My initial sample of movie projects includes narrative English-language feature films that were released in theatres in North America from 1990 to 2007. Documentaries and foreign-language movies are removed from the sample to make the characteristics of the movies in my sample more comparable. Furthermore, I exclude movies that were not released on at least 100 screens during their theatrical run, because such movies tend to be art-house movies that are best modelled independently.

In his examination of financing choices between independent and studio financing in the movie industry, Fee (2002) asserts that a movie director has a large artistic stake in a movie when she also serves as a scriptwriter and a producer for the movie. I contend that directors with large stakes can gain more independence with their movie projects. To the extent that managerial independence is about overcoming any form of resistance, I define movie projects with managerial autonomy as those projects where the movie's director is also credited as being a scriptwriter and a producer for the project. Using this identification approach, movies in my final sample are categorized into two subsamples: one comprising of movies made by made by managers with autonomy and the other containing movies without managerial autonomy. The necessary data on human personnel for each movie is obtained from *Baseline/Film Tracker*, a leading supplier of data for professionals as well as academics doing research on the movie industry.

For each movie project in both the subsamples, I collect data that offer proxies for assessing the performance, private benefits and control variables used in my empirical analysis. Descriptions of four variables--awards, star power, composite reviews, and critical acclaim-- and the sources of data used to compute these variables appear below. All of the remaining data items are also described below and are obtained from *Baseline/Film Tracker* and its partner *Kagan LLC.* To check and obtain missing data items from these two sources, I also look at data in *Variety*, *IMDB* and *Box Office Mojo*.

I estimate performance using the project's global return, which I calculate by dividing revenues by costs in both domestic and foreign markets. I use two variables related to private benefits, one for job security from risk minimization and the other for prestige. To create a variable for job security from risk minimization I conduct a close examination of the returns for all movies in my sample. First, I examine the variance of the returns for the movie projects with managerial autonomy and compare this to the variance for movie projects without managerial autonomy.

Next, to gain insights into whether these are any meaningful differences between the upside and downside risks of the movies in my sample, I decompose variances of returns 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, I examine the distribution of the returns to obtain an understanding which movie projects break-even as well as which ones are more likely to be flops because, as scholars and others have noted, it is only with major flops that managers lose their jobs.

As a measure for prestige, I use awards given to the movies in both my subsamples. Following empirical research by Gemser, Leenders & Wijnberg (2008) that suggests that the prestige gained by awards can vary depending on whether the award is given by peers or experts, I use two categories of awards: 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 my sample include the Academy Awards, the Directors Guild Awards, the Golden Laurel Awards (PGA Awards), and the Independent Spirit Awards. The awards from expert groups in my 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 is obtained from the websites of the awards. For all the awards I use, I collect data on nominees, when available, and winners. Also, I collect data on all awards as well on major awards (Best Picture, Best Actor, Best Actress, and Best Director). Finally, I collect data for every year in my sample except for the years when no award was given.

Hume (1998) advocates that the aesthetic quality of a product should be evaluated over time. Accordingly, a supplementary measure I use for the prestige attained from a movie is the critical acclaim of each movie that is made noticeably after the theatrical release of the movie. Normally such evaluations are made in annual issues of movie guides. To measure prestige from critical acclaim, I build a critical acclaim variable using the average score of three widely-known movie guides: *Leonard Maltin's Movie and Video Guide*, *TV Guide*, and *Videohound's Golden Movie Retriever*.

My investigation requires a proxy for manager-investor disagreement. As this disagreement is challenging to measure, I make assumptions about the kind of projects which are more likely to be associated with manager-investor disagreement, irrespective of the extent of managerial autonomy. I contend that movie projects with narrow appeal are more likely to have more manager-investor disagreement than projects with a wide appeal. Given the general conviction among industry professionals and academics that movies in the action, sci-fi, horror, thriller, animation, or family are more likely to have a larger audience, I classify movies in these genres as not having manager-investor disagreement and movies in the comedy, drama, or romance genres as having manager-investor disagreement.

My inspiration for constructing my own proxy for manager-investor disagreement comes from Thakor and Whited (2011), who also construct a novel proxy for this variable, give the relative recency of empirical research on manager-investor disagreement. Whereas my use of the genre proxy is not perfect, I do note that unlike the proxies that have been used so far in extant empirical research on manager-investor disagreement, the use of genre has the advantage of being a proxy at the project- rather than the firm-level.

A broad list of the determinants of commercial success in the movie industry appears in Hadida (2009). I use many of these determinants as control variables in my regressions discussed in the next section. Specifically, I use variables for a star power dummy, a sequel dummy, a R-rated dummy, the maximum number of screens on which a movie is released, a season dummy and a numerical variable for the composite reviews of the movie.

To identify powerful stars in the movies in my sample, my main source is *James Ulmer's* list of A and A+ stars. The star power dummy undertakes 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 my 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 my 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. The genre dummy takes on a value of one for genres more likely to have a larger audience when *Baseline/Film Tracker*, my source for genres, classifies the genre as action, sci-fi, horror, thriller, animation, or family and zero if the genre is a comedy, drama, or romance.

Finally, the composite reviews 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. My composite reviews variable contrasts from the critical acclaim variable described previously. Whereas the composite reviews variable measures the critical appraisal of a movie just around the time the movie is released, the critical acclaim variable assesses the critical evaluation of the movie at a time markedly after the theatrical release of the movie.

4. Results and Discussion

Descriptive statistics for the movie projects in subsamples for movie projects with managerial autonomy and movie projects without managerial autonomy are presented in Table 1. As indicated in Panel A, the sample contains 329 (10.5%) movie projects made by managers with autonomy and 2,792 (89.5%) made by managers without autonomy. Thus the overwhelmingly majority of projects in the sample are made by managers without autonomy. To preserve comparability, the numbers returns shown in Panel B were adjusted for inflation. The means and medians of the movie returns indicate that movie projects with managerial autonomy are not significantly different from those for all other projects, providing univariate evidence consistent with the predictions of the *Competitive Equilibrium Hypothesis*.

To investigate whether there are any meaningful differences between the risks of the movies in my sample, I calculate the variance of returns. As shown in Table 2, my results indicate that the variance for movie projects with managerial autonomy is not significantly different from that for movie projects without managerial autonomy.

Following Ravid and Basuroy (2004), I also examine whether movie projects with managerial autonomy are more likely to break even than movie projects without managerial autonomy in my sample. My tests indicate that 65.35 percent of the movie projects with managerial autonomy break even as compared to 63.25 percent of movie projects without managerial autonomy. The difference between these percentages is not statistically significant. These findings indicate that movie projects with managerial autonomy are not less likely to break even than movie projects without managerial autonomy.

Next, to gain insights into whether these are any meaningful differences between the upside and downside risks of the movies in my sample, I decompose variances of returns into mean squared deviations (MSDs) of returns when returns are greater than or equal to one and also when returns are less than one. In both cases, MSDs for movie projects with managerial autonomy are not significantly different at the 0.05 level from those for movie projects without managerial autonomy.

Table 1: Sample description

Panel A: Sample composition

Project type	Number (% of sample)
Movies with managerial autonomy	329 (10.5)
All other movies	2,792 (89.5)

Panel B: Performance-based characteristics for movies with managerial autonomy vs. movie projects without managerial autonomy

		Movies with managerial autonomy (1)	Movies without managerial autonomy (1)	p-value for the difference between (1) and (2)
Rate of return	Mean	1.52	1.46	0.301
	Median	1.33	1.28	0.321

Panel C: Other characteristics of movies with managerial autonomy vs. movie projects without managerial autonomy

	Movies with managerial autonomy (1)	Movies without managerial autonomy (2)	p-value for the difference between (1) and (2)
Percentage which are sequels	9.42	9.74	0.853
Percentage with wide-appeal genres	32.52	39.94	0.009

I use t-tests to compare differences in means, the Kruskal-Wallis test to test the difference in medians and the Pearson's chi-squared test to compare differences in percentages. All reported p-values are for two-tailed tests.

Finally, in my examination of differences in the risks of the movies in my sample, I examine the distribution of returns for movie projects with managerial autonomy and movie projects without managerial autonomy 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). My

tests indicate that the probability of failure for movie projects with managerial autonomy is similar to that for movie projects without managerial autonomy. Taken together, the results from Table 2 do not provide evidence that managers seek managerial autonomy to reduce risk for job security, as predicted by the *Agency Costs Hypothesis.*

Table 2: Comparison of risk characteristics for movies with managerial autonomy vs. all other movies

	Movies with managerial autonomy (1)	Movies without managerial autonomy (2)	p-value for the difference between (1) and (2)
N	329	2,792	
Variance of rate of return	0.95	0.87	0.443
Percentage with rate of return ≥ 1	65.35	63.25	0.455
N	215	1,766	
Mean squared deviation (MSD) of rate of return when rate of return ≥ 1	0.70	0.69	0.909
N	114	1,026	
Mean squared deviation (MSD) of rate of return when rate of return < 1	0.06	0.06	0.330
N	329	2,792	
Percentages with various rate of return values			
3.00 and higher	7.29	6.77	0.721
1.00 to 2.99	58.05	56.48	0.586
1.70 to 2.99	28.27	26.47	0.485
1.00 to 1.69	29.79	30.01	0.932
0.50 to 0.99	21.88	24.57	0.283
0.01 to 0.49	12.77	12.18	0.758

I 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.

To measure prestige from making a particular type of a movie, I investigate awards as well as the critical acclaim received by the movies in my sample. Table 3 presents my comparisons for peer awards received by movie projects with managerial autonomy and movie projects without managerial autonomy.

Table 3: Comparison of prestige from peer awards for movies with managerial autonomy vs. all other movies

	Movies with managerial autonomy (1)	Movies without managerial autonomy (2)	p-value for the difference between (1) and (2)
N	329	2,792	
Percentage with at least one Peer Award nomination	31.31	18.34	0.000
Mean number of Peer Award nominations	1.15	0.60	0.000
Percentage with at least one Peer Award win	11.55	7.09	0.004
Mean number of Peer Award wins	0.32	0.15	0.023
Percentage with at least one major Peer Award nomination	14.29	7.45	0.000
Mean number of major Peer Award nominations	0.34	0.17	0.003
Percentage with at least one major Peer Award win	3.65	2.22	0.108
Mean number of major Peer Award wins	0.08	0.04	0.155

I 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.

In the first two rows of Table 3, I examine 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 I note that there is a substantial and significant difference between award nominations, conditional on whether the movie project is in the managerial autonomy versus the movie projects without managerial autonomy subsample. The difference is sustained when I repeat this examination in the next two rows by now looking at movie projects that won awards.

In the last four rows of Table 3, I replicate my investigation by only looking at major awards (Best Picture, Best Actor, Best Actress, and Best Director). I note that the difference between movie projects with managerial autonomy and movie projects without autonomy is substantial and statistically significant when I examine award nominations but the significance disappears when I examine award wins.

Further clues on prestige gained from making a particular type of a movie come from an examination of the awards given by experts to the movies in my sample. As shown in Panel A of Table 4, the results indicate that there is essentially a large and significant difference between the likelihood of getting expert awards conditional on whether the movie project is in the movie

projects with managerial autonomy versus movie projects without managerial autonomy subsample, irrespective of whether I look at nominations or wins or whether I investigate major or all awards.

Table 4: Comparison of prestige from expert awards and critical acclaim for movies with managerial autonomy vs. all other movies

	Movies with managerial autonomy (1)	Movies without managerial autonomy (2)	p-value for the difference between (1) and (2)
N	329	2,792	
Panel A : Expert Awards			
Percentage with at least one Expert Award nomination	25.84	17.16	0.000
Mean number of Expert Award nominations	0.84	0.46	0.001
Percentage with at least one Expert Award win	14.89	8.56	0.000
Mean number of Expert Award wins	0.43	0.22	0.011
Percentage with at least one major Expert Award nomination	17.63	11.10	0.001
Mean number of major Expert Award nominations	0.42	0.23	0.002
Percentage with at least one major Expert Award win	6.99	3.98	0.011
Mean number of major Expert Award wins	0.19	0.09	0.044
Panel B : Critical Acclaim			
Mean critical acclaim	61.86	58.00	0.000

I 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.

Finally, in Panel B of Table 4, I examine prestige from critical acclaim for the movie projects in my sample. As shown in Panel B, the prestige from critical acclaim for movies projects with managerial autonomy is significantly higher than that for movie projects without managerial autonomy. Collectively, my results from Tables 3 and 4 on awards and critical acclaim suggest that there is significantly more prestige to be gained from movie projects with managerial autonomy than movie projects without managerial autonomy.

As the univariate analysis discussed so far implicitly assumes that potentially relevant project characteristics are fixed, I conduct further investigations using a multivariate framework. In Table

5, I present my results using a LOGIT model to conduct my analyses in a multivariate setting. The left-hand-side variable is a dummy variable equal to one for movie projects with managerial autonomy and zero otherwise. The right-hand side variables include a budget variable, a dummy variable for sequels and variables for my proxy for manager-investor disagreement as well as proxies for managerial prestige discussed in the previous section of the paper. I report results for two separate regressions: one where prestige is measured with peer or expert award nominations and the other where prestige is measured with peer or expert award wins.

Overall, the results of the LOGIT model presented in Table 5 are consistent with the *Competitive Equilibrium Hypothesis*. The first implication of the *Competitive Equilibrium Hypothesis* was that managers with autonomy are less likely to be associated with projects without manager-investor disagreement. Consistent with this implication, the coefficient of the genre dummy, my proxy for investor-management disagreement is negative and statistically significant in both of my regressions. The second implication of the *Competitive Equilibrium Hypothesis was* that managers without autonomy are likely to be linked with projects that fetch smaller private benefits than managers with autonomy. Put slightly differently, managers with autonomy are likely to be linked with projects that fetch larger private benefits than managers without autonomy.

Table 5: Logit analysis of making movies with managerial autonomy vs. movie projects without managerial autonomy

Variable	Model 1	Model 2
Budget	0.001	0.001
	(0.619)	(0.502)
Sequels	0.131	0.116
	(0.534)	(0.582)
Genre	-0.291	-0.313
	(0.034)	(0.022)
Critical acclaim	0.013	0.015
	(0.007)	(0.001)
Peer or expert award nominations	0.034	
	(0.039)	
Peer or expert award wins		0.038
		(0.170)
Year fixed effects	Yes	Yes
N	3,121	3,121
Pseudo-R^2	52.8%	52.8%

P-values for parameter estimates from the logit analysis are reported in parenthesis. The dependent variable is a dummy variable set equal to unity for movie projects with managerial autonomy and zero for all other projects. All analyses control for year fixed effects whose coefficient estimates are suppressed. The coefficient on the intercept is also suppressed.

My results show that the coefficient of the peer or expert major award nominations variable, my first proxy for managerial prestige is positive and statistically significant. Additionally, the coefficient of the peer or expert major award wins variable, my second proxy for managerial

prestige, is also positive but not statistically significant. Finally, the coefficient for critical acclaim, my third proxy for managerial prestige, is positive and statistically significant in both regressions included in Table 5.

Table 6: OLS regression analysis of the rates of return

Variable	Log of Rate of Return
Movies with managerial autonomy	-0.021
	(0.149)
Sequel	0.063
	(0.000)
Star power	-0.046
	(0.000)
Composite reviews	0.005
	(0.000)
Maximum s\creens	0.000
	(0.000)
Season	0.042
	(0.000)
R-Rated	0.022
	(0.026)
Genre	-0.037
	(0.000)
Year fixed effects	Yes
N	3,019
Adjusted R^2	37.5%

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.

The last set of multivariate tests I perform relates to the commercial performance of the movies in my sample. The *Agency Costs Hypothesis* predicts that performance of movie projects with managerial autonomy should be worse than that for movie projects without managerial autonomy, whereas the *Disagreement Hypothesis* makes the reverse prediction. I measure performance using the project's rate of return. My key test variable is the managerial autonomy dummy variable set equal to unity if the movie project has managerial autonomy and zero otherwise. The control variables I used were discussed in an earlier section.

Table 6 presents the results of the regressions. An inspection of the spearmen correlation coefficients for the control variables indicates that excessive multicollinearity is not a problem in the multivariate analysis. Whereas the signs of the control variables are similar to those in previous studies, the managerial autonomy dummy is insignificant. On the whole, these results indicate that

the performance of movie projects with managerial autonomy is not better or worse than movie projects without managerial autonomy. This result is not consistent with the *Agency Costs Hypothesis* or the *Disagreement Hypothesis*. It is, however, consistent with the *Competitive Equilibrium Hypothesis*, according to which, to the extent that organization choice is optimal, movie projects by firms associated with managerial autonomy are associated with returns that are not significantly different than those by firms without managerial autonomy. Specifically, managers seeking autonomy are matched with projects where disagreement between managers and investors is likely. Similarly, managers without autonomy are matched with projects where disagreement is less likely to arise and such projects fetch lesser private benefits to managers.

Taken together, the results from Tables 5 and 6 are supportive of the role of manager-investor disagreement in investment policy decisions. These results complement the findings of Dittmar and Thakur (2007) who show that manager-investor disagreement has an effect on equity issuance and equity issuance subsequently affects investment policy decisions. My results are also consistent with Thakor and Whited (2011) who find strong empirical support for the effect of manager-investor disagreement on investment policy decisions.

5. Conclusions

Managers may seek autonomy because they disagree with investors on what course of action will maximize a project's returns. Alternatively, managers may want autonomy to allow them to extract private benefits from the project. Competitive equilibrium implies that the decision to grant autonomy to managers depends on a trade-off between the opportunity costs of not granting autonomy to managers and the agency costs of giving managers autonomy. I predict that when the benefits to project returns from overcoming the disagreement between managers and investors are large, managers will be granted autonomy. My results are consistent with that prediction. Specifically, managers seeking autonomy are matched with projects where disagreement between managers and investors is likely. Similarly, managers without autonomy are matched with projects where disagreement is less likely and such projects fetch lesser private benefits to managers.

My investigation of the role of manager-investor disagreement and agency costs for managerial autonomy with investment policy decisions was conducted using rich ex post project-by-project data for a comprehensive sample of projects in the movie industry. The key reasons for using the movie industry as a laboratory for my investigation is that the industry has reasonable proxies for many theoretical constructs like managerial autonomy, manager-investor disagreement and private benefits. As with any study using a single industry, an important limitation of my study is whether the results can be extended to other industries. A useful area for future research is to investigate this possibility.

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