

C. Edward Fee

Michigan State University

The Costs of Outside Equity Control: Evidence from Motion Picture Financing Decisions*

I. Introduction

Shareholder activism has traditionally been viewed as a benefit of concentrated outside equity. Shleifer and Vishny (1986), for example, argue that ownership concentration may increase firm value by enhancing the incentives of outsiders to monitor and control managers. The empirical literature on the actions of large block-holders seems to support this view. For example, Bethel, Liebeskind, and Opler (1998) find that asset divestitures increase following block share purchases. Additionally, Denis, Denis, and Sarin (1997) find a significant correlation between management turnover and the presence of a large block-holder. Outside equity influence is perhaps most prevalent in the relationship between venture capitalists and the firms they finance. Venture capitalists, like large block-holders in public companies, tend to hold board seats on the firms in which they invest (Barry et al. 1990) and are important in removing poorly performing managers (Lerner 1995). Additionally, venture capitalists are reputed to bring expertise to their relationships through on-location monitoring and advising (see Sahlman 1990).

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Recent theoretical work suggests that outside investor control may have costs as well as benefits, particularly in small, entrepreneurial firms. The possibility of investor opportunism can reduce an entrepreneur's incentives to invest personal effort into the firm. I investigate this issue in the context of motion picture financing decisions.

Filmmakers face the choice of using studio financing (and giving up control) or of obtaining independent financing (and retaining control). I find that independent financing is more common when a filmmaker's private artistic stake in a film is high and also for films requiring a relatively high level of creative effort.

Recent theoretical work has pointed out that with the benefits of concentrated outside ownership come potential costs, especially in small, developing companies whose values are closely tied to the actions of an entrepreneur.¹ Large outside investors may be able to exercise their control to the detriment of the entrepreneur, even if they promise *ex ante* not to do so. The threat of this type of opportunism may adversely affect the entrepreneur's incentives. She may underinvest in effort because she correctly anticipates investor holdup. Consequently, limiting outside control may sometimes increase overall firm value.²

This article investigates these trade-offs in the context of motion picture financing. This setting is an ideal one because the institutional features of the motion picture industry closely resemble those modeled in the theoretical literature. The film producer, an entrepreneur who develops a motion picture project, faces a choice between financing through a studio-distributor (and relinquishing control) or obtaining independent funds (and retaining control). The primary friction in these projects arises when a filmmaker is concerned about realizing an artistic vision as well as creating a profitable project. When choosing studio financing, the filmmaker faces the very real possibility that the studio will exercise its control to reduce her private (artistic) benefits. For example, studios sometimes change the endings of films on the basis of test screenings. The primary hypothesis tested herein is that film financing patterns are consistent with the aforementioned literature on manager versus investor control. I refer to this hypothesis as the "incomplete financial contracting hypothesis."

I have assembled a unique database of 349 U.S. films distributed in 1992 and 1993 that identifies the funding source of each film. I find that the likelihood of independent financing (entrepreneur control) increases when the filmmaker's artistic stake is high and when the importance of filmmaker effort is relatively high. These findings are consistent with the incomplete financial contracting hypothesis. Also consistent are findings concerning film outcomes. First, the relative level of effort expended by filmmakers and film studios appears to depend on which party has control. Second, when a studio finances a film of a type typically financed independently, the performance of the film appears to suffer.

The results I report are consistent with existing anecdotal and systematic evidence that potential loss of control is an important consideration for businesses seeking outside funds. For example, the founders of Ben and Jerry's Homemade reportedly decided against venture capital backing to insure that

1. Aghion and Bolton (1992); Hart (1995); Burkhart, Gromb, and Panunzi (1997); Pagano and Röell (1998); and Myers (2000), among others.

2. Shleifer and Vishny (1997) document several other costs of large investors in addition to distorted management incentives. Among these are suboptimal diversification and the potential expropriation of minority shareholders by large block-holders. Another cost of concentrated equity, modeled in Bolton and Von Thadden (1998), is a potential decrease in stock liquidity. The focus of this article is the effect of block-holding on managerial incentives.

the company would continue to foster their social agenda (Shulins 1987). Demsetz and Lehn (1985) suggest that control issues may also explain why mass media companies and professional sport clubs are predominantly closely held by management. The private benefits of managerial control in these industries may outweigh the possibility of greater profits under an alternative ownership structure.

The trade-offs examined in this article are similar in spirit to arguments made by Rajan (1992) in his model of the choice between public and private debt.³ In Rajan's (1992) model, it is bank lenders who have opportunities to exploit borrowers. In the setting I examine, it is equity block-holders whose monitoring is potentially onerous.

This article is organized as follows. Section II provides industry background. Section III contains hypothesis development. Section IV describes the construction of the data set. Section V analyzes the predictors of financing choices, Section VI examines film outcomes, and Section VII concludes.

II. An Introduction to Motion Picture Finance

A. *The Players*

The founder/chief executive officer of a film project is its producer. The basic asset of the film project is a literary property (book, screenplay, etc.), which the producer either creates or to which she acquires rights. She is responsible for assembling the various inputs of the film (financing, cast, director, crew, etc.) around this property and for overseeing the business aspects of the production. The producer is also responsible for securing distribution for the film through a studio-distributor.

In addition to her business duties, the producer also sometimes serves in a creative capacity. When she wishes to express a personal artistic vision, she may act as the film's writer and director as well as producer. I later use an indicator of whether one person serves in all three capacities as a proxy for the importance of private benefits of control in the filmmaker's utility function.⁴

Film studios are the primary distributors of motion pictures. In this capacity they negotiate with theaters for playing time and market films to the public. In addition, they often provide financing as well. Of the 326 (out of 349) films for which I was able to identify financing sources, 173 (or 53%) were studio funded. The rest, which I refer to as independently financed, were funded by nonstudio investors.

Independent finance takes a variety of forms. One method of independent finance is limited partnership financing augmented by presales of ancillary rights. Presales involve parceling out the rights to overseas distribution, home

3. See also Diamond (1993).

4. It is also plausible that in resource-limited productions, having one individual serve all three roles is a budgetary necessity. I include the film's cost (budget) in some of my empirical tests to distinguish between these alternative possibilities.

TABLE 1 Classification of Financing Methods

Classification	Type of Financing	Description
Studio	Studio development deal	Distributor participation in earliest stage before all elements in place. Producer possibly employee of studio.
Studio	Studio-based independent production company	Independent production company has headquarters at studio. Studio totally finances the company's productions.
Studio	Studio financing/distribution deal	Producer comes to studio with fully developed package. Studio finances production.
Studio	Negative pickup deal	Studio agrees to pay for movie once it is finished in production. Producer uses this guarantee as collateral for bank loan. Studio retains ancillary rights.
Independent	Cofinancing	Studio pays for part of cost. Producer finds other financing for rest. Studio does not retain all rights to the film. Producer usually owns the negative.
Independent	Overseas presales	Producer sells overseas and/or video rights to film. Uses advances to finance film without obtaining domestic distributor.
Independent	Long-term independent finance	A producer arranges financing for a whole slate of films through an independent production company she runs.
Independent	Single-film independent investor finance	Producer arranges independent investor financing, such as a limited partnership, for just one film.
Independent	Self-financing	Producer finances through personal savings, credit cards and/or family. Primarily limited to small independently distributed films.

video, and so on, and selling them individually. The revenues from the presales help reduce the amount of investor funding required. Table 1 breaks down the most popular methods of film finance and categorizes them as studio or independent. I describe the financing methods and my classification criteria in more depth in Section IV.

B. Independent Financing versus Independent Distribution

An important distinction to make is the one between independently financed films and independently distributed films. When members of the media talk of independent pictures, they generally refer to small, art-house features distributed outside the major studio system. These films, often self-financed and hence, by necessity, low budget, are quite different from those distributed within the studio system. This article is specifically focused on the question of the determinants of finance, not distribution. I therefore exclude (except in sensitivity analysis) independently distributed films from my empirical analysis of the financing decision. This treatment allows me to isolate the determinants of financing from the determinants of distribution.

I break down the motion pictures in my sample into a two-by-two matrix on the basis of how they were financed and how they were distributed in figure 1. Note that no films lie in the lower left quadrant (studio-financed/

		Finance Method	
		Studio	Independent
Distribution Method	Studio	Studio-financed/ studio-distributed films 173 in sample	Independently financed/ studio- distributed films 99 in sample
	Independent		Independently financed/distributed films 54 in sample

FIG. 1.—Finance method versus distribution method. No films lie in the lower-left quadrant because studios distribute all films they finance. The lower-right quadrant represents independently financed/independently distributed films. These are often self-financed, art-house features. This article focuses on the factors that distinguish films in the upper two quadrants, that is, the financing choice of studio-distributed films.

independently distributed) since studios distribute the films they finance. The definition of a studio for the purposes of this article is a film distributor also involved in film finance. Any distributor who financed at least one film in my sample is termed a studio. The 17 distributors in the studio group (of 51 total distributors) include the traditional “major studios,” such as Disney and Warner Brothers, as well as the so-called mini-majors, such as New Line Cinema.⁵ The studio group includes all distributors who distributed more than seven films. The average number of films distributed per studio is 17.4. The average number of films distributed by the 34 nonstudios is 1.6. Section IV describes how the studio-distributed films were categorized as independently financed or studio financed.

The data reported in table 2 (data sources described in Sec. IV) support the decision to separate out independently distributed films. These films really do appear different in important ways from the other two groups. The producer of the average independently financed/independently distributed film created only 4.2 films in his career. The producer of the average independently financed/studio-distributed film, however, created 9.9 films, statistically indis-

5. An important trend in the motion picture industry since the time of the sample has been the acquisition of the mini-major studios by the majors. New Line Cinema, e.g., is currently owned by AOL Time Warner, and Miramax is owned by Disney. One explanation for the trend is that major studios wish to utilize the mini-majors’ reputation for fairness with filmmakers. An interesting debate in the industry revolves around the extent to which these reputations can be maintained.

TABLE 2 Univariate Comparisons of Motion Pictures by Finance and Distribution Methods

	All Films	Studio Financed/ Studio Distributed	Independently Financed/ Studio Distributed	Independently Financed/ Independently Distributed	Financing Unknown
Total number	349	173	99	54	23
Average domestic box office (millions of \$)	25.37	37.22	19.92**	1.84**	14.89**
Average budget (millions of \$)	23.95	28.56	22.53*	4.44**	21.00
Average domestic box office (millions of \$) for films with reported budget	41.08	55.45	30.86**	4.19**	19.79
Percent with high artistic stake	20	12	24***	37***	22
Box office receipts of pro- ducer's last film (millions of \$)	21.38	28.45	21.72	2.27**	11.64*
Average number of films by producer	9.6	11.1	9.9	4.2**	8.7
Genre breakdown (%):					
Action	21.8	22.0	25.3	18.5	13.0
Comedy	23.2	27.8	18.2*	14.8*	30.4
Drama/other	55.0	50.3	56.6	66.7**	56.5

SOURCES.—The films in the data set are U.S.-produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits, distribution, and box office performance. The chief sources for financing data are articles in weekly *Variety* magazine from January 1991 to December 1993. Genre comes from *Microsoft Cinemania '97*.

NOTE.—This table compares the characteristics of films across finance and distribution categories. A studio is defined as a domestic motion picture distributor involved in film finance. High artistic stake films are defined as those films for which one individual serves as the writer, director, and producer or in which a producer and director collaborate on a script.

* Statistically different from the studio financed/studio distributed group at the 10% confidence level using a two-tailed *t*-test. "All films" group not tested.

** Statistically different from the studio financed/studio distributed group at the 5% confidence level using a two-tailed *t*-test. "All films" group not tested.

*** Statistically different from the studio financed/studio distributed group at the 1% confidence level using a two-tailed binomial test. "All films" group not tested.

tinguishable from the 11.1 films by the producers of the average studio-financed/studio-distributed film. The independently distributed films were also much smaller in terms of budget than either of the other two categories. Of the independently financed films for which I was able to obtain budget figures, the average budget was only \$4.44 million.⁶ The average budgets for films in each of the studio-distributed groups were \$28.56 million and \$22.53 million, respectively.

C. Financing Contracts and Creative Control

Film financing contracts are by their nature incomplete. Despite the fact that many decisions important to the film's artistic and commercial success have to be made after the contract is signed, the contract cannot specify rules for every possible contingency that may arise. For example, final editing decisions can affect the entire feel of a movie. The filmmaker may have to make a choice between footage that stresses character development and footage that stresses rapid-fire action. Conceivably, the action footage might increase the film's commercial appeal while the character development footage might improve the film artistically. Clearly, at this stage, the financiers and the filmmaker may have different opinions about which footage to choose. Unfortunately, the financing contract has to be signed before the footage is even shot, so it cannot specify exactly how the film should be edited. Therefore the financing contract must specify which party has final say.

A primary issue considered here is whether control rights are assigned in a manner consistent with existing theories of incomplete financial contracting. While individual financing contracts are private and hence unobservable, there is substantial evidence that, in general, filmmakers are able to maintain a much greater degree of control over independently financed productions than they are over studio-financed productions. The evidence I present to support this generalization, which I make use of in my empirical analysis, is of three types: filmmakers' anecdotal accounts, textbook descriptions of the features of financing/distribution contracts, and the results of a systematic news-wire search.

1. *Anecdotal evidence.* The anecdotal evidence overwhelmingly supports the contention that filmmakers view studio financing as more onerous in terms of control than independent financing. I present here only a couple of representative quotes out of many similar ones in the press. For one, Jim Jarmusch, who is represented in my sample as the writer, director, and producer of the independent film *Night on Earth*, is quoted as saying, "The studios want to talk to you endlessly about the script. They want a say in casting and want to talk to you about how to cut the film . . . which for me is basically just a big waste of my time and energy because I know what [I want] to do . . . I don't want people interfering with my ideas" (Litwak 1986, p. 268). Film-

6. As discussed in Sec. IV, the budget figures are likely biased upward to some extent, particularly for the independently distributed category.

makers choosing independent financing are often willing to sacrifice the higher monetary rewards associated with studio productions in exchange for the creative freedom associated with independent finance. In a *Dallas Morning News* interview, filmmaker Keith Gordon said that “the rewards of being able to tell stories on film in a way that you want, with the actors you want, are very great” but that he might some day tire of the struggle of raising capital and “just want to do studio movies and make a lot of money” (Smith 1992).

2. *Systematic accounts in industry textbooks.* The evidence that independent finance is associated with greater filmmaker control is not purely anecdotal, however. Industry textbooks that discuss film finance also support the contention that studio financiers generally demand more extensive control rights over productions than do nonstudio financiers. The following synthesis of textbook accounts should give the reader an idea of the rights assigned in film financing and/or distribution contracts and how these contracts typically differ depending on the source of the funding. The textbooks consulted include Baumgarten, Farber, and Fleischer (1992), Cones (1992, 1995), Litwak (1994), and Vogel (1998), among others. The authors of these texts come from the ranks of industry professionals, including entertainment lawyers, producers, and financial analysts.

The industry texts clearly indicate that the right to make final editing decisions, known as “final cut,” is a crucial right assigned in film financing contracts and that studios almost always retain final cut for the films they finance. Exceptions are rarely made and then only for the most successful directors. In making the final cut decisions, the studios frequently make use of focus groups, a practice disliked by many filmmakers (see Bay 1998). A case in point comes from the production of the film *Mr. Jones*. The screenplay, written by filmmaker Mike Figgis, was a dark story about the relationship between a manic-depressive man, played by Richard Gere, and his therapist. In test screenings, audiences reportedly found the manic side of Richard Gere’s character more entertaining than the depressive side. Tristar (the studio-financier) consequently asked Figgis to recut the movie to de-emphasize the depressive side of the character. When Figgis refused, Tristar exercised its control and had him replaced.

In contrast, the right of final cut for independently financed films generally lies with the filmmaker. For these movies, filmmakers have the freedom to tell the stories in the manner they desire as long as the films meet certain minimal guidelines. These guidelines are generally standard contractual terms and are common to both studio-financed and independently financed films. For example, contracts usually require that films conform to community obscenity standards. Additionally, the contracts often specify minimum quality standards for the films’ technical features such as audio dubbing. These quality standards are not seen as creative constraints on filmmakers but instead as guarantees that the films will meet basic professional standards. Both studio and independent financing contracts also generally require filmmakers to insure their productions against various types of hazards such as cast-member deaths,

defamation lawsuits, damage to the film stock, and so on. Additionally, of course, any financing contract will specify a budget and a deadline.

Industry accounts suggest that studios tend to exercise a good deal of creative control throughout the filming process. They may demand daily screenings, cast approvals, script change approvals, and so on. The controls on independent productions tend to be much less severe, focused primarily on budgetary issues. Like studios, independent investors require producers to account for all spending and to file frequent expense and schedule reports.

It is clear that with their hands-on control, studios can quickly step in if a film appears likely to go over budget. Since independent investors can be dispersed and unknowledgeable, they rely on an agent, the completion guarantor, to protect their budgetary interests. The completion guarantor, hired by the producer, is essentially a contingent subordinate investor who promises to step in and meet any overbudget expenses if necessary. The upfront fee paid to the completion guarantor is generally in the 2.5%–6% range. Completion guarantors naturally prefer not to have to contribute funds to a film and therefore have the incentive to monitor the film's budgetary performance.

Completion guarantors tend to remain much more hands-off than studios as long as the production remains on budget. They do, however, have the right, which is rarely exercised, to take over a production if its budget gets out of control. Frequently, a portion of the upfront fee is refundable if the completion guarantor's funds are not used. This, along with the desire to retain control, encourages filmmakers to meet small overages out of their own pockets.

Another difference between independent and studio financiers is that studios generally insist on owning the negative of any film they finance. Owning the negative gives them the right to exploit the film in whatever new media formats might emerge in the future. Within bounds, they are allowed to make changes to the film to fit the requirements of the media. For example, when videotapes first became a popular medium, studios were free to "pan and scan" wide-screen movies so they could fit on the dimensions of a television. At that time, some filmmakers complained that some of the artistic effectiveness of the films was lost in the process, especially when the translation was done carelessly. If a filmmaker retains ownership of the negative, as is common for independently financed films, she can be assured that no version of the film will be released without adequate quality control.

The studios also generally demand all ancillary (non-U.S.-theatrical) distribution rights. They may also retain the rights to alter films to meet the needs of the other markets. For example, United Artists and filmmaker Barry Levinson had a public dispute over how the studio recut the film *Rain Man* for the airline market. At the airlines' request, the studio removed a scene in which Dustin Hoffman's character recited airline crash statistics and screamed to avoid boarding a plane. The studio was able to ignore Levinson's protests that the scene was crucial to the film's plot and characterization because of its contractual rights (*Los Angeles Times*, June 29, 1989). For independently

financed films, the filmmaker has the option not to release the film in a certain market if the changes demanded for the market are too severe.

3. *Results of a systematic news-wire search.* Additional systematic evidence on the degree of creative control awarded to filmmakers in independently financed films relative to those in studio-financed films is provided by the results of a Dow Jones Interactive keyword search designed to find articles on the subject.⁷ The search returned 52 nonduplicate articles that were relevant to the topic. Of these, only three articles directly provided counterexamples in which filmmakers conceded control rights in independent films or lauded the creative control awarded by a studio backer. In contrast, 32 either explicitly equated independent finance with creative control or said that a given filmmaker avoided Hollywood money to retain control. Of the remaining articles, 10 did not explicitly compare studio to independent finance but indicated that creative control is a right highly valued by filmmakers. The remaining seven articles discussed details such as how commercial success improves filmmakers' bargaining positions vis-à-vis control issues with studios, the extent of big-name stars' creative influence, and the correct definition of an independent film. Given the results of this search, combined with the previously presented evidence, I am confident that, as a general rule, filmmakers retain greater control in independently financed films than they do in studio-financed films.

4. *Discussion.* As with any generalization, there are exceptions to the rule that filmmaker control is greater in independently financed films. For example, an "angel" investor in a small independently financed movie may try to assert his or her own ideas about a movie. Additionally, there have been a few well-publicized incidents in which studios granted final cut to a filmmaker with less-than-satisfactory results.⁸ The restriction of my empirical tests to only studio-distributed films limits the sample primarily to films too large to be financed by one angel investor. Also, the very publicity of the above-mentioned incidents reduced studios' willingness to grant final cut. Nevertheless, it is possible that the filmmakers of a small number of studio-financed films in my sample had greater control than the filmmakers of a small number of independent films in the sample. If that is the case, then the empirical tests performed may be slightly biased against finding evidence in support of the incomplete contracting hypothesis. While the evidence suggests that the frequency of such exceptions is quite rare, the reader may prefer to view the empirical section of this article as a joint test of the hypothesis that

7. The exact search term used was [(movie or motion picture or film) and creative control and financing and studio and independent]. The search was for "All Publications" and "All Dates." The actual article dates ranged from January 2, 1985, to February 28, 2000. The keywords were chosen to maximize the number of relevant articles. The nature of the relevant articles retrieved by the author in nonsystematic searches with other keywords was quite similar to those reported in the systematic search.

8. See Bach (1985) for a particularly disastrous case in point: Michael Cimino's filming of *Heaven's Gate*.

filmmakers view studio finance as more onerous in terms of control and that they choose financing on the basis of this view.

A natural question to ask is why the two forms of finance vary the way they do. Why can't nonstudio financiers be given control and studio financiers be kept at arm's length, for example? I suggest three potential answers to this question. First, only studios have the expertise and incentives to actually exercise their control. Studios specialize in monitoring film projects and thus have a comparative advantage in doing so. Monitoring by independent investors, dispersed and without expertise, would be ineffective by comparison.⁹ Second, studios have a great deal of bargaining power. Even if they promise not to exercise control, their strong position as distributors may allow them to do so anyway. This argument is similar to Welch's (1997) explanation of why bank debt is generally given priority in bankruptcy—banks have so much bargaining power that they will have effective priority regardless of their nominal priority. Alternatively, a studio may be a bigger target for filmmaker holdup than dispersed independent financiers. A filmmaker with final cut might be able to threaten to derail a studio movie unless more money is given. Having multiple investors might make such bargaining tactics more difficult.

D. Cash Flow Rights

Not discussed above is the allocation of cash flow rights between filmmakers and studios. In general, for both studio and independent films, the filmmaker's compensation is predominantly fixed. While studio financing/distribution contracts generally specify some profit sharing, the studio accounting system is well known to be biased toward showing even apparently successful movies to be money losers. Although independent films generally receive better profit-sharing terms with distributors, the film entity's share of the profits is largely directed toward repaying the investors. The reader can refer to Chisholm (1997), Goldberg (1997), Vogel (1998), and Weinstein (1998) for more detailed discussions of profit sharing in Hollywood.

Why we do not observe high-powered incentive contracts for film producers is an interesting question but is beyond the scope of this article. Note that, in theory, identical incentive contracts could be created for the producer regardless of the identity of the financier. The literature on incomplete contracts suggests that even in the presence of incentive contracting, correct control allocation can still improve the efficiency of economic relationships. Thus the tests performed in this article would be relevant even in the presence of high-powered incentive contracts.

III. Hypothesis Development

The primary hypothesis examined in this article is that movie financing patterns can to some extent be explained by theories of incomplete financial

9. This is analogous to the difference between public and private debt in the financial intermediation literature.

contracting (the incomplete financial contracting hypothesis). The first part of this section discusses in some depth the nature of these theories and develops testable implications in the context of the motion picture industry. There are, however, other plausible hypotheses about why films are financed the way they are. I therefore devote the second part of this section to alternative hypotheses. Note that, while these hypotheses are described in mutually exclusive terms, multiple factors undoubtedly influence real world financing decisions.

A. The Incomplete Financial Contracting Hypothesis

The incomplete financial contracting theories take as a starting point an entrepreneur seeking funds for a positive net present value project. Aghion and Bolton (1992), and much of the literature that follows, assume that a firm's value can be broken into two components: monetary output, which can be promised to investors, and private managerial benefits, which cannot. A common assumption is that there is some tension between private and monetary benefits so that maximizing one does not necessarily maximize the other. In these models, investor monitoring is not just passive verification of cash flows. Instead, investors are assumed to bring specific, valuable skills with them to the relationship, much like venture capitalists.

Following Grossman and Hart (1986) and Hart and Moore (1990), these models generally assume contracting opportunities are incomplete. In the theory of incomplete contracting, the delegation of control rights over noncontractible decisions sets the status quo point of any renegotiations. Problems can arise if the party with control can utilize her bargaining position to extract concessions from the other party, a problem referred to as "holdup." The party without control may underinvest effort into the project because she realizes the party with control will be able to extract most of the gains from that effort. Control is therefore optimally granted to the party whose actions are relatively most important.

In terms of the relationship between investors and an entrepreneur, noncontractible decisions affect the split between the monetary value of the firm and the value of private benefits. When investors have control, the manager may underinvest effort into the firm. When the entrepreneur has control, investors may undermonitor.¹⁰ A secondary cost of entrepreneur control can be suboptimal project size: investors may be hesitant to provide large amounts of capital when they lack control.¹¹

The above discussion of the costs and benefits of investor control seems to conform to filmmaker discussions of the costs and benefits of studio financing. More important, the discussion seems to conform to filmmakers'

10. In some models, such as those of Burkart et al. (1997) and Pagano and Röell (1998), entrepreneur control is facilitated by dispersed ownership of outside equity. In these models, the dispersion of equity, rather than holdup problems, leads to the undermonitoring.

11. Additionally, as in Fluck (1998), investors' control rights may also affect the set of feasible cash-flow allocation contracts.

actions in choosing financing. After his experience with Tristar on *Mr. Jones*, Mike Figgis deliberately avoided studio financing for his next film, *Leaving Las Vegas*. About the decision he says, “One of the points in making it was to make it independently—and not to be tied down” (quoted in Horn 1995). The cost to him was in accepting a small \$3.5 million budget and in giving up hopes of major financial rewards. He says when he produced the film, he “thought it would be a European art-house movie” and “really didn’t expect any reception for it in the States” (*San Francisco Chronicle*, November 7, 1995, p. E1).

The incomplete financial contracting hypothesis has two testable implications about how films are financed. First, filmmakers with a large stake in the artistic success of the film are predicted to be more likely to choose independent financing because the relative size of the private benefits of control is higher for these films. Second, films that require higher producer effort relative to studio effort should prove more likely to be independently financed. I discuss my proxies for the filmmaker’s artistic stake and required effort in Section IV.

The incomplete financial contracting also yields two testable implications about what happens to films after they are financed. First, the relative effort expended by producers and studios should vary systematically by financing type. Second, “suboptimally” financed films should perform less well than “optimally” financed films. What is meant by the terms “optimally” and “suboptimally” is discussed in Section VI.

B. Alternate Hypotheses

As reported in Section II, the budget of the average independently financed film is slightly below that of the average studio-financed film. While the difference is by no means as large as the difference between both of these categories and independently distributed films, it is statistically significant at the 10% confidence level. Not all independently financed films are smaller than all studio-financed films however. In fact, weekly *Variety* reported that independently financed *Cliffhanger* was a candidate for “1992’s most expensive production” (*Variety*, November 23, 1993, p. 5).

The difference in average budget is consistent with the incomplete financial contracting hypothesis. Since studios monitor productions they finance more closely than independent financiers, they should be expected to be more generous in terms of capital provided. Industry sources frequently cite this as a major benefit of studio financing. For example, Cones (1995) says, “A studio can generally provide more significant resources . . . [it] can offer the promise of a higher production budget.”

It is conceivable, however, that the causality may be reversed; that is, the film’s required budget may influence how it is financed. Perhaps a filmmaker who wishes to develop a large action film will be forced to use studio funds

because of studios' deeper pockets. I term the possibility that size alone determines financing patterns as the size-segmentation hypothesis.

If the size-segmentation hypothesis were true, one would expect to observe budget being the only variable that predicts film financing decisions. If the size-segmentation hypothesis is false, other variables should matter as well. This observation suggests the inclusion of a budget control variable in the film finance regressions. Unfortunately, if budget is instead a function of finance type, as the incomplete financial contracting hypothesis suggests, including a budget term is inappropriate. Including budget as a right-hand-side variable could well cause some truly significant variables to become insignificant in the regression, biasing any statistical inferences. It is therefore unclear whether including a budget control is appropriate or not.¹² I therefore perform statistical tests both with and without a budget control variable. Fortunately, adding the budget variable does not materially change the inferences concerning the incomplete financial contracting variables.

Two contradictory hypotheses emerge when one considers the potential linkage between reputation and financing. The first, which I refer to as the minor leagues hypothesis, is that independent films serve as training grounds for filmmakers and that studios only lend to filmmakers with established track records. The second hypothesis, which I refer to as the studio nurturing hypothesis, is related to the literature on banks and reputation building, particularly Diamond (1991). In Diamond's model, firms rely on bank debt, with its associated heavier monitoring, until they gain a reputation sufficient to enter the public market. By analogy, young filmmakers might be nurtured under the close guidance of the studios until they gain enough reputation to secure independent funding.

IV. Data

A. Basic Film Data

My primary data source for basic film information is the 1994 edition of the *Film Index International* CD-ROM (hereafter *FII*). The *FII* contains information on approximately 90,000 films dating from before 1930 to the present as well as information on about 30,000 individuals involved in the film industry. Due to the high cost of collecting finance data, I restrict my sample to U.S.-produced films released in 1992 and 1993, of which *FII* lists 728. This sample period overlaps to a large extent that of Ravid (1999), who investigates whether filmmakers use stars as informational signals. The information I draw from *FII* includes film name, production company, year

12. One could imagine implementing a full-scale structural simultaneous equations model that allows for endogeneity of finance, budget, filmmaker effort, studio effort, profitability, etc. However, limitations in the data, specifically in terms of observables and the availability of instruments, makes estimating such a system practically unfeasible. Additionally, the inferences drawn from such a model depend crucially on correctly modeling the system. One can, however, view some of the specifications in this article as reduced forms of a class of such models.

released, year produced, and production credits for cast members, producers, directors, and screenwriters.

I restrict my attention in this article to feature films released in theaters. Since the *FII* database contains TV and direct-to-video films as well as feature films, I employ two screens to create my sample. First, I limit the data set to films for which the 1996 edition of the *International Motion Picture Almanac* lists a domestic theatrical distributor. I additionally limit the data set to films with domestic box office figures reported in the *Compact Variety* CD-ROM database. This screen, which reduces my sample to 349 films, provides the distributor names and box office receipts for all films in the final data set.¹³

B. Financing Method

Section V examines the empirical determinants of observed film financing choices. Since I am aware of no preexisting database that identifies the source of a film's financing, I develop a unique hand-collected database that does so. I categorize films into three categories: studio financed/studio distributed, independently financed/studio distributed, and independently financed/independently distributed. The multivariate tests are focused entirely on the first two categories.

The primary source of financing data is the weekly magazine *Variety*. I examine a microfiched version of each issue of the magazine from January 1991 to December 1993 for relevant information. This information takes the form of general articles on motion picture finance, discussions of individual films, individual and company profiles, weekly production reports, market and festival updates, and gossip columns. Annual reports of film production and distribution companies, as well as Dow Jones Interactive searches, provide additional information on financing methods. I am able to classify the financing method of 326 of the 349 films in my sample. Of these, 173 are studio financed/studio distributed, 99 are independently financed/studio distributed, and 54 are independently financed/independently distributed.

Table 1 describes the most common methods of motion picture finance and classifies them as either studio or independently financed. Cases such as studio development deals or limited partnerships are easily classified. The main criterion I use to classify cases where some studio funds and some outside funds are used is the degree to which the studio retains rights. Films in which the studio retains all ancillary rights are classified as studio financed. Films where the producer retains some rights are classified as independently financed.

The primary case where I classify a film as studio financed, even though some nonstudio funds are used, is in a so-called negative pickup deal. In a negative pickup deal, the studio guarantees to pay for a film when it is com-

13. If any theatrically screened films are inadvertently eliminated, it is very likely that they fall into the independently financed/independently distributed category, to which I devote less attention. The data for studio-distributed films, both studio and independently distributed, seems quite reliable.

pleted. The producer then takes out a bank loan, backed by this guarantee, to finance the production. Like the other cases classified as studio finance, the studio retains all ancillary rights and owns the negative. An alleged reason that studios use negative pickup deals is to circumvent union contracts. Independent production companies do not face the same union restrictions that studios face as signatories to collective bargaining agreements. Negative pickup deals reputedly allow the studios to skirt these agreements by channeling production through nominally independent companies that they in fact control (Fleming and Natale 1992).¹⁴

For many films I have only enough information to classify them into studio or independently financed categories, not into the nine categories in table 1. For example, I am able to determine that some films had not secured a studio distributor at the time the production was started. Since studios distribute the films they finance, the lack of studio distributor implies that the film was not studio financed.

Note that self-financing is classified as independent finance. Self-financed films are by necessity an order of magnitude smaller than films in which outside financing is used. Almost all of these films are independently financed/independently distributed. Thus, they are not assigned to the studio-distributed categories where I focus most of my analysis.

C. Budget

According to the size-segmentation hypothesis, film finance is solely a function of budget. Table 2 gives summary statistics for the average budgets of films for which budget data were available. Budget figures were available for 103 films in the sample. Filmmakers and studios tend to be quite tight-lipped about film budgets, perhaps because they are afraid of negative publicity. Individual films are generally structured as private entities and are not subject to Securities and Exchange Commission reporting requirements. Sometimes, however, figures do get leaked to the media. The budget figures in my data set were obtained in a method analogous to the one used in collecting the film finance data: by systematically examining each issue of weekly *Variety* from January 1991 to December 1993 for mentions of specific films' budgets.

Since bigger budget films tend to receive more media coverage, I suspect that the budget figures may be biased upward. To see if this is indeed the case, I compare in table 2 the average domestic box office performance of the subset of films with reported budgets to the average performance of all films. Consistent with the conjecture, the average domestic box office performance of films with reported budgets is \$41.08 million, as compared to \$25.37 million for all films, statistically different at the 5% level.

As a test for potential selection bias, I compare the percentage of films with reported budgets across financing categories. Results of *t*-tests suggest that, while the frequency of reported budgets is much lower in independently

14. See also Cones's (1992) definition of "Artificial Pickup."

distributed films than it is in studio-distributed films, the frequency of reported budgets in independently financed/studio-distributed films is roughly equal to the frequency in studio-financed/studio-distributed films. The frequencies of films with reported budgets are 35%, 32%, and 13% for studio-financed/studio-distributed films, independently financed/studio-distributed films, and independently financed/independently distributed films, respectively. The results are further support for the decision to concentrate the empirical analysis on studio-distributed films.

D. Filmmaker Experience

The minor leagues hypothesis suggests that filmmaker experience will be associated with a higher probability of studio finance. In contrast, the studio nurturing hypothesis predicts the opposite. The proxy I use for filmmaker experience is the number of films the producer made in the past. This variable is calculated using *FII*'s database of producer credits. The univariate results presented in table 2 provide little support for either hypothesis in terms of how films are financed. The relative inexperience of independently distributed films' producers suggests that the minor league hypothesis may help explain how films are distributed but not how they are financed.

E. Private Benefits

The incomplete financial contracting hypothesis suggests that a filmmaker with a large artistic stake in her production will be more likely to choose independent financing. As a proxy, I create the variable "artistic stake" that takes on the value of one if the individual credited as the film's director is also credited as a screenwriter and a producer (producer, executive producer, or coproducer). The artistic stake dummy variable also takes on a value of one if a director and a producer jointly collaborated on a screenplay. In all other cases, the variable takes on the value of zero.

Consistent with the incomplete financial contracting hypothesis, for 24% of the independently financed/studio-distributed films, the artistic stake variable is coded as one, while this is true for only 12% of studio-financed/studio-distributed films. A two-tailed binomial test comparing the frequency of films with high artistic stake across the two groups rejects the hypothesis that they are equal at the 1% confidence level. If, for large films, having one individual serve as writer, director, and producer is less feasible, the evidence on artistic stake can be construed as supporting the size-segmentation hypothesis as well. Only the multivariate analysis of Section V, where budget is explicitly controlled for, can distinguish which of these differing interpretations is more reasonable.

F. Importance of Producer Effort Relative to Studio Effort

Another implication of the incomplete financial contracting hypothesis is that the likelihood of independent financing should be positively related to the

importance of filmmaker (artistic) effort relative to studio (marketing) effort. Industry sources suggest several film characteristics as candidate proxies for the relative importance of artistic versus marketing effort. Rather than relying on industry arguments alone, I take the approach of “letting the data speak” in a preliminary regression to determine which of these characteristics to use in the predictive regression.

1. *Procedure.* The goal of the preliminary regression is to determine which characteristics from a pool of potential proxies best map into the relative importance of filmmaker versus studio effort. In order to do so, I construct a dependent variable designed as a measure of the relative level of effort actually expended by the two parties. From the initial pool of potential proxies, I choose those variables found significant in the first-stage regression as proxies for the relative importance of effort in the second-stage, predictive regression. Of course, the actual level of effort expended by each party could be correlated with how the film is financed. In fact, this correlation is a key prediction of the incomplete financial contracting hypothesis. Therefore, I include an indicator variable in the preliminary regression for how the film is financed.

This approach assumes that each party has some incentive to work harder when her effort is more valuable, regardless of control allocation. This assumption will hold as long as each shares in some of the gains from her own effort, even if the relative distribution of the gains depends on who has control. As long as the party without control has a minimal level of bargaining power, this will be the case.

It is also important that the characteristics chosen not be proxying for a third factor that jointly determines relative effort levels and financing. One such potential factor, according to the size-segmentation hypothesis, could be film budget. However, as discussed previously, if size does not actually determine finance but instead is endogenous to finance, problems may arise when size is included as a control variable. I therefore perform two separate versions of the procedure: one with size as a control variable and one without.

2. *Dependent variable in the preliminary regression.* The dependent variable in the preliminary regressions is designed as a proxy for actual artistic effort expended relative to actual marketing effort. Since effort itself is impossible to measure precisely, my approach is to generally rank films along a spectrum based on observable proxies for what is modeled as “effort.”

To create the dependent variable, I first create two measures, one a proxy for artistic effort and one a proxy for marketing effort. I ordinaly rank each film from one to N (lowest to highest) on each of these measures. The final variable, which rates the film as relatively more art driven versus marketing driven, is calculated as the artistic rank minus the marketing rank. The measure of marketing effort is the number of screens on which the studio initially opens a film, as reported in weekly *Variety*. The measure of artistic effort is how well the films were received critically. Each week, *Variety* breaks down the reviews of each film screened for critics in New York into three categories: good, bad, and

mixed. My review score is equal to $1 \times (\% \text{ good reviews}) + .5 \times (\% \text{ mixed reviews}) + 0 \times (\% \text{ bad reviews})$.

In creating the dependent variable, I am making the implicit assumption that reviewers judge films primarily on their artistic quality. A natural question is whether this assumption is a valid one. Although most reviewers are adamant about their independence, might they be afraid of retaliation if they give a negative review to a heavily marketed film? Alternatively, might they unwittingly be swayed by studio promotion efforts? If it is the case that critics are influenced by promotion and if studio promotion efforts toward critics are correlated with the overall level of marketing, one would expect to see a positive correlation between a film's marketing rank and its review rank. In my sample, this does not appear to be the case. The correlation between the review rank and the marketing rank is -0.28 , significant at the 1% confidence level. This is inconsistent with the conjecture that reviewers are primarily swayed by studio marketing dollars. Instead it appears that studios rely most heavily on marketing when they expect poor critical reception and negative word-of-mouth.

3. *The contestants.* Industry readings suggest that a film's genre (type) may proxy for the relative importance of artistic versus marketing effort. For example, "high-concept" comedies are one type of film frequently criticized in the trade press for lack of artistry. "High-concept" is defined by Cones (1992) as "a film idea, concept or plot that can be described in a very few words."¹⁵ Reputedly, formulaic jokes substitute for filmmaker creativity in these productions. A comedy variable is therefore the first candidate proxy for the unimportance of producer effort in the first-stage regression. Action film attendance, at least in the opening weeks, seems to be heavily driven by promotions, including television advertisements, tie-in merchandising, and so forth. I therefore also include an action dummy as a proxy for the importance of marketing.

My source for film genres is *Microsoft Cinemania '97*. I create three zero/one indicator variables based on the genre as described in *Cinemania*: action, comedy, and drama/other. Included in the action category are subcategories like adventure, thriller, and war. Nondrama categories pooled into the drama/other category include romances, documentaries, and historical films. Summary statistics for genre are reported in table 2. Action films accounted for 21.8% of all films distributed and comedies accounted for 23.2%.

I also categorize films as sequels and nonsequels. It is unclear a priori what the expected sign on the sequel coefficient is. One could argue that since sequels have a built-in audience, the artistic quality of the film is of secondary importance. However, one could equally argue that the built-in audience reduces the required marketing effort as well. I rely on the two-stage methodology employed here to indicate which of these two arguments, if either, is supported empirically.

15. Examples of high concept ideas might be "high school students uncover frozen caveman" or "police officer poses as kindergarten teacher."

4. *The winners.* Table 3 reports the results of the preliminary regressions. Panel A reports the results without a budget control, and panel B reports the results with a budget control. The first specification in each panel includes the full set of candidate proxy variables. The second specification includes only those variables found significant in the first regression. I run the second regression to confirm that the signs and significance of the coefficients on winning proxies do not change when the other candidate proxies are removed.

Without a budget control, the coefficients on both the action film variable and the comedy variable are negative and significant. However, when budget is included, the coefficient on the action film variable becomes insignificant. Note that in panel B the budget coefficient is negative and significant. It therefore appears that, while marketing is relatively more important than artistic factors for action films, the difference may be due to action films' higher budgets.¹⁶ In contrast, the comedy coefficient remains significant even in the presence of a budget control, supporting the conjecture that comedies are more marketing driven than art driven. The sequel coefficient is insignificant regardless of whether budget is included or not. Finally, in both panels, running the regressions with only the significant variables from the initial specification does not change any inferences.

As a consequence, I use the comedy and action variables as proxies for the relative importance of producer versus studio effort in the predictive regressions without a budget control and just the comedy variable in the regressions with a budget control. Note that in all specifications the coefficient on independent finance is positive and significant. Thus, when producers have control, artistic effort appears to be relatively higher, and when studios have control, marketing effort appears to be relatively higher. This is exactly what the incomplete financial contracting hypothesis would suggest. I investigate further evidence from outcomes in Section VI.

G. Persistence of Performance by Genre

In table 3, comedy proved to be the most robust proxy for the relative unimportance of filmmaker artistic ability/effort, consistent with a priori arguments. This section presents further evidence to that effect by comparing the persistence of performance across genres. If filmmaker ability/effort is indeed least important for comedies, one might expect to see less correlation between current performance and past performance for the directors of comedies than for the directors of other types of films.¹⁷ As I report below, the evidence is indeed consistent with this expectation.

I start by identifying all cases in the time period 1986–95 in which a director filmed more than one film of the same genre sequentially. This new, supplementary, data set consists of 557 pairs of films. Due to the extraordinarily

16. The average budget of an action film in the sample is \$35.1 million as compared to \$23.6 million for nonaction films.

17. I thank the referee for suggesting this general approach.

TABLE 3 Determination of Proxies for Art-Driven versus Marketing-Driven Films

Observations	Adjusted <i>R</i> ²	Constant	Independent Finance	Genre		Sequel	Budget
				Comedy	Action		
Panel A—without budget control variable:							
187	.21	15.69 (1.51)	41.96 (3.04)***	-66.58 (-4.07)***	-82.31 (-5.01)***	-35.86 (-1.47)	
187	.21	14.20 (1.37)	43.05 (3.11)**	-71.70 (-4.47)***	-84.65 (-5.16)***		
Panel B—with budget control variable:							
68	.25	24.09 (.93)	49.53 (2.05)**	-65.68 (-2.34)**	-22.94 (-.84)	15.98 (.47)	-1.60 (-2.45)**
68	.26	24.20 (.94)	45.84 (1.95)*	-59.90 (-2.21)**			-1.71 (-2.93)***

SOURCES.—Articles in weekly *Variety* magazine, in particular those from January 1991 to December 1993, served as the chief sources for the financing and budget variables. The films in the data set are taken from the set of U.S.-produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. Genre comes from *Microsoft Cinemania '97*.

NOTE.—This table regresses a proxy for the actual relative level of artistic effort vs. marketing effort expanded in film production vs. several potential proxies for the ex ante relative importance of artistic vs. marketing effort. Only studio-distributed films are included in these regressions. The left-hand-side variable is equal to the rank of the film in terms of critical reception minus the rank of the film in terms of number of opening screens. Figures reported are estimated betas and *t*-statistics (in parentheses).

- * Significant at the 10% confidence level.
- ** Significant at the 5% confidence level.
- *** Significant at the 1% confidence level.

high costs of data collection, financing methods and budgets are not coded for the supplementary data. The sources used in creating the supplemental data set are the *Compact Variety* CD-ROM, *Microsoft Cinemania '97*, the Internet Movie Database (www.imdb.com) and the Motion Picture Association of America (MPAA) Web site (www.mpa.org). Using this sample, I regress performance against lagged performance, where performance is defined as domestic box office receipts in millions of (inflation-adjusted) 1986 dollars. I interpret the coefficient on the lag term as a measure of the persistence in film performance attributable to filmmaker-specific factors. To compare the differences in performance persistence across film type, I include in the regression variables interacting lagged performance with film type. I use the same type indicator variables used in table 3—action, comedy, and sequel. The sign of the interaction terms is expected to be negative for film types for which filmmaker-specific factors are least important.

I include in the regression the type variables themselves to allow for differences in intercepts as well as slopes for films of different types. I also include indicator variables for film rating (G, PG, and PG-13) in the regression as previous studies (e.g., Ravid 1999) have found a significant relationship between ratings and performance. Finally, I include a variable equal to the performance of a sequel's antecedent (e.g., the performance of *Kickboxer* for *Kickboxer 2*) to allow for the fact that sequels tend to draw a similar audience as their antecedents. This variable is set equal to zero for nonsequels.

Column 1 of table 4 presents the results of the regression including all the above variables. The coefficient on lagged performance is positive and highly significant. Consistent with the conjecture that comedies are less artistically driven, the coefficient on the comedy interaction term is negative and significant at the 5% confidence level. Gauging by the relative levels of the coefficients (0.29 for the lagged performance variable and -0.19 for the comedy interaction term), it appears that the performance persistence for comedy directors is only about one-third that of directors of the typical drama/other film. Both the action and the sequel interaction terms are small in magnitude and insignificant. In column 2, I run the same regression without the action and sequel interaction terms, finding qualitatively identical results for the performance persistence and comedy interaction terms. The results of table 4, combined with those of table 3 and the a priori arguments, provide substantial evidence that filmmaker effort is relatively less important for comedies.

V. Multivariate Analysis of Film Financing Decisions

A. Methodology

In this section I present the results of predictive regressions designed to identify the factors influencing motion picture financing choices. For reasons outlined previously, I exclude independently distributed films from the regressions. The left-hand-side variable is an indicator variable equal to one when the film

TABLE 4 Persistence of Performance by Genre

	(1)	(2)
Lagged performance	.29 (6.64)***	.30 (7.89)***
Lagged performance × comedy	-.19 (-2.04)**	-.19 (-2.13)**
Lagged performance × action	.02 (.22)	
Lagged performance × sequel	.09 (.69)	
Action	1.77 (.56)	2.18 (.85)
Comedy	5.71 (1.48)	5.75 (1.50)
Sequel	-7.32 (-1.53)	-7.05 (-1.50)
Performance of antecedent	.32 (4.49)***	.36 (6.47)***
Rated G	19.43 (2.56)**	19.32 (2.55)**
Rated PG	6.09 (2.14)**	5.89 (2.08)**
Rated PG-13	-.02 (-.01)	-.15 (-.06)
Constant	8.24 (4.92)***	8.81 (4.89)***
Observations	557	557

SOURCES.—Information on genres is drawn from *Microsoft Cinemania '97*, and ratings are from the Motion Picture Association of America Web site, www.mpa.org.

NOTE.—This table regresses film performance (domestic box office receipts as reported in the *Compact Variety* CD-ROM) vs. the performance of the director's most recent previous film by genre. The sample consists of all films released in the years 1986–95 for which the director's prior film was of the same genre. Performance figures are in millions of 1986 (inflation-adjusted) dollars.

* Significant at the 10% confidence level.

** Significant at the 5% confidence level.

*** Significant at the 1% confidence level.

is independently financed and zero otherwise. The right-hand-side variables are the proxies discussed in Section IV. Table 5 reports the results of four separate specifications of these regressions. The specifications in panel A do not include a budget control, and those in panel B do include the budget control. As a result, the sample sizes in the panel B regressions are significantly smaller than those in panel A. The results of both a logit and a probit specification are reported in each panel. The relative effort proxies in each panel are the ones chosen from the corresponding first-stage regressions discussed in Section IV.F.

B. Results

The results of the predictive regression are consistent with the incomplete financial contracting hypothesis. The first implication of the hypothesis is that the likelihood of independent finance should be higher when the value of nonpecuniary private benefits of control are higher. The coefficient on the artistic stake dummy variable, the proxy for high private benefits, is positive

TABLE 5 Predicting Financing Method (Studio Finance = 0, Independent Finance = 1)

Specification	Observations	Constant	High Artistic Stake Dummy	Genre		Filmmaker Experience	Budget
				Action	Comedy		
Panel A—without budget control variable:							
Logit	272	-.52 (-2.38)**	.91 (2.70)**	.05 (.16)	-.58 (-1.76)*	-.01 (.51)	
Probit	272	-.32 (-2.39)**	.57 (2.72)**	.03 (.15)	-.36 (-1.80)*	-.00 (-.67)	
Panel B—with budget control variable:							
Logit	90	.02 (.04)	1.93 (2.20)**		-1.42 (-2.23)**	.03 (1.50)	-.03 (-1.77)*
Probit	90	.02 (.06)	1.17 (2.30)**		-.86 (-2.34)**	.02 (1.47)	-.02 (-1.80)*

SOURCES.—The films in the data set are U.S.-produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International (FII)*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits and distribution. The chief sources for financing and budget data are articles in weekly *Variety* magazine from January 1991 to December 1993. Genre comes from *Microsoft Cinemania '97*.

NOTE.—Figures reported are estimated betas and *t*-statistics (in parentheses). This table presents the results of a regressions-predicting film finance method. The dependent variable is a dummy equal to one for studio-financed films and zero for independently financed films. The regressions are limited to studio-distributed films. A studio is defined as a domestic motion picture distributor involved in film finance. Films with high artistic stake are defined as those films for which one individual serves as the writer, director, and producer or in which a producer and director collaborate on a script. The filmmaker experience variable is the total number of films with which *FII* says the producer has been associated.

* Significant at the 10% confidence level.

** Significant at the 5% confidence level.

and significant at the 5% confidence level in all four specifications. The coefficient is economically as well as statistically significant. Consider, for example, the first row in panel A. The predicted probability of independent finance for a noncomedy with an average budget and average producer experience climbs from 39% for films with artistic stake equal to zero to 82% for films with artistic stake equal to one. Since the artistic stake variable is significant even when controlling for budget, it appears the variable is truly proxying for the level of private benefits and not for budgetary necessity.

The second implication of the incomplete financial contracting hypothesis is that the probability of independent finance should be positively correlated with the importance of filmmaker effort relative to studio effort. The proxies derived from the preliminary regressions are the action and comedy dummies in panel A and the comedy dummy in panel B. In all rows, the comedy dummy coefficient has the expected negative sign and is statistically significant (at the 10% level in panel A and the 5% level in panel B). Interestingly, the action dummy is insignificant in panel A. This is perhaps not surprising given the earlier findings that the comedy dummy is the most robust proxy for the relative unimportance of filmmaker effort.

The size-segmentation hypothesis asserts that budget is the only factor in how films are financed. Given that the incomplete financial contracting variables remain significant even after controlling for budget, it appears that the size-segmentation hypothesis is not a good explanation of observed financing patterns. However, the budget variable is positive and significant at the 10% level in both specifications in panel B. Thus it does appear that there is some relationship between budget and film financing but that budget is only one factor.

Table 5 offers support for neither the minor leagues hypothesis nor the studio nurturing hypothesis. In no specification is the coefficient on the filmmaker experience variable significant. Since the hypotheses have opposite implications, it may be possible, however unlikely, that the two effects roughly cancel each other out. It may also be possible that reputation affects other facets of the financing relationship. For example, it may be that budget grants are larger for more experienced filmmakers than less experienced ones. However, such speculations are outside the main focus of this article and are left to future research.

C. Sensitivity Analysis

In addition to the specifications reported in table 5, I run several other specifications as sensitivity analyses by modifying the baseline specification of panel B, row 1. For reasons of brevity, these are not reported in the tables. First, I substitute the box office performance of the filmmaker's most recent previous film for the filmmaker experience variable as an alternative proxy for filmmaker reputation. As with the experience variable, the coefficient on this proxy is insignificant. Second, I investigate the effects of the producer

also serving as the leading actor or actress. One could argue that actor/producers have high artistic stakes in the film and thus should have the same effect on financing as writer/director/producers. Alternatively, it might be that actors are given production credits just as deal sweeteners and are really producers in name only. In order to distinguish between these hypotheses, I rerun the reported specifications using a star/producer dummy. The variable is insignificant, adding support to the notion that actors are given producer credits more as deal sweeteners.

Finally, I run a multinomial logit regression including the independently distributed films as a separate category. The inferences regarding the determinants of finance for studio-distributed films are unchanged in this specification. The results for the independently distributed/independently financed films support the decision to keep them a separate category. The primary defining feature of these films, as one would guess from the univariate statistics, is their low budget; budget is the only variable with a significant coefficient for independently distributed films.

D. Alternative Explanations

The evidence in table 3 is consistent with the incomplete financial contracting hypothesis. Specifically, the use of independent financing is related to the private benefits and effort variables in a way predicted by theory. However, it may be the case that other, non-mutually exclusive factors not discussed as formal hypotheses may play a role in motion picture financial decisions.

One possibility is that independent investors are simply unsophisticated outsiders to whom the worst producers go for funds. The results of table 3 suggest that, if sophistication is an issue, it is likely important only for independently financed/independently distributed films. The insignificance of the filmmaker experience coefficient indicates that producers of independently financed/studio-distributed films are of roughly the same quality as those of studio-financed/studio-distributed films. Producers of independently distributed films, however, are less experienced and successful than those in either of the other groups. It may be the case that the low-budget nature of these films makes unsophisticated investor financing more feasible. Indeed it is only for these films that I find evidence of financiers like "Mattress Mac, the discount furniture king," who invested in the Chuck Norris film *Sidekicks* (Fleming 1992).

The framework of the theoretical discussion in Section III assumes that producers develop projects and choose financing methods themselves. A small subset of films is, however, developed within a studio by in-house producers. For these films, it may be more appropriate to think of the financing method as being determined by the studio rather than the producer. Despite this difference, however, the same theoretical trade-offs still hold. The contracting costs of studio control can be thought of as transaction costs in the producer/financier/distributor relationship. As long as alternative financing sources are

TABLE 6 Commercial Outcome and Financing against Type

Variable	(1)	(2)
Against type—predicted independent	-1.41 (-2.01)**	-1.42 (-2.03)**
Against type—predicted studio	-.36 (-.70)	-.34 (-.66)
Rated G	4.02 (2.94)***	3.95 (2.86)***
Rated PG	.41 (.82)	.39 (.78)
Rated PG-13	-1.00 (-2.16)**	-.94 (-1.97)*
Sequel	-.08 (-.12)	.02 (.03)
Budget		-.01 (-.52)
Constant	2.20 (6.51)***	2.35 (5.26)***
Observations	89	89

SOURCES.—The set from which the films are drawn is all U.S.-produced films distributed in 1992 and 1993, as identified in the 1994 edition of *Film Index International*, the 1996 edition of the *International Motion Picture Almanac*, and the *Compact Variety* CD-ROM. These sources provide basic data on motion picture credits, distribution, and box office performance. Budget figures are drawn from reports in *Variety*. Ratings come from the Motion Picture Association of America Web site, www.mpa.org.

NOTE.—Figures reported are estimated betas and *t*-statistics (in parentheses). The table presents results of regressions predicting financial success as defined by (domestic box office performance divided by budget). A film is classified as having surprise studio (independent) finance if it is studio (independently) financed and its predicted probability of independent finance from the logit specification in table 5, panel B, is greater than (less than) one-half. The regression is limited to studio-distributed films.

* Significant at the 10% confidence level.

** Significant at the 5% confidence level.

*** Significant at the 1% confidence level.

available, one would expect studios to specialize in the types of films for which these costs are not severe. Independent financiers, able to delegate control, would specialize in productions, which require higher levels of creative effort. So in this respect, rather than an alternative explanation, this argument is more of a reinterpretation of the arguments discussed in Section III.

VI. Evidence from Outcomes

To investigate further the incomplete financial contracting hypothesis, I examine film outcomes. One potential implication of this hypothesis is that the relative level of effort expended by the filmmaker and studio should differ by how the film is financed. A second potential implication is that if films are financed suboptimally, their measured performance should be reduced. The first of these implications is supported by table 3. Recall that independently financed films were characterized by significantly higher levels of artistic effort relative to marketing effort than were studio-financed films. Table 6 presents the results of regressions examining the second implication.

In table 6, I regress a proxy for the financial success of the film versus

whether the film was financed against type. By financing against type, I mean choosing one form of finance when a film's characteristics would suggest that the other form is more appropriate. This procedure implicitly assumes that films financed against type are in some sense financed suboptimally. At first glance, this would appear to require irrational agents. In the standard binary choice model, decisions are always made optimally, and any surprise choices are due to factors, modeled as random error, unobservable to the experimenter but known to the party making the decision. I appeal to potential imperfections in the market for film capital as an alternative to the assumption of irrational agents. For example, unobserved factors, such as personal contacts, may give a filmmaker greater access to independent or to studio capital. In a theoretical sense, the agent can be viewed as maximizing her utility subject to certain constraints or having unobserved costs associated with one choice. The decision will then be suboptimal, not in terms of the agent's rationality, but relative to the decision made in the presence of fewer capital market frictions.

If there are significant frictions in raising capital and if the incomplete financial contracting hypothesis is true, then films financed against type would be expected to perform worse than other films. However, absent these frictions, there should be no measurable difference in film performance even if the incomplete financial contracting hypothesis is true. Consequently, the procedure of this section is somewhat "one-sided" in the sense that a finding of no difference does not necessarily imply that the incomplete contracting hypothesis is false.

My measure of financing against type is based on the results of the predictive regressions in row 3 in table 5. Studio-financed films with predicted probability greater than half of independent finance are those that are called "Against Type–Predicted Independent." Independent films with predicted probabilities less than half are classified "Against Type–Predicted Studio."

The proxy for financial success is the ratio of domestic box office receipts to film budget. This proxy will clearly be an imperfect measure of financial success since only a portion of box office receipts accrues to a film and domestic box office receipts are but one source of film revenue. Nevertheless, the total revenues that accrue to a film are strongly correlated with the initial domestic box office figures—films that do well in the box office tend to do better on video, for example. Thus this measure should be a reasonable indication of how well the film performed commercially relative to what it cost. Recall that the cost (budget) figures are available for only a subset of the sample and that sample sizes in these regressions are relatively small.

As part of his study investigating motion picture returns on investment, Ravid (1999) examines the factors determining movie rates of return on non-low-budget films.¹⁸ The only factors he finds significant are a film's rating

18. His budget cutoff is \$1 million. No films in the following regressions were below that cutoff.

(with G- and PG-rated films being more successful than others) and whether or not the film is a sequel. I therefore include indicator variables for these factors as control variables in the regression.

The first specification includes as dependent variables the financing surprise variables and the rating and sequel controls. Like Ravid (1999), I find that G-rated films appear to perform the best, all else equal. Unlike Ravid, I find no relationship between a film being a sequel and performance.¹⁹ The coefficients on both the financing against type variables have the expected negative sign. Of the two, only the variable for the predicted independent group is statistically significant. Thus it appears that financing against type is more costly for films optimally independently financed than for films optimally studio financed.

Because of media suggestions that rising film budgets are hurting film profitability, I include a budget control in the second specification. As in Ravid's (1999) analysis of large films, the coefficient on budget is insignificant. Although this seems contrary to industry contentions, it may well be that using more recent data or a more precise measure of profitability would lead to different results as regards budget.

VII. Conclusion

The results of this article support the proposition that outside investor control comes with costs as well as benefits and that financing arrangements are structured correspondingly. Monitoring may simultaneously increase the monetary value of a project while reducing private benefits. Additionally, the threat of investor opportunism may reduce an entrepreneur's incentives to invest effort into a firm. This argument implies that the likelihood of investor control will be inversely related to (a) the expected direct costs of interference in terms of lost private benefits and (b) the relative importance of effort. The predictive regressions of Section V are consistent with both of these propositions. I find that independent financing is more probable when a filmmaker's artistic stake in a film is high and when the film's genre requires a higher personal commitment to its success. The results of Section VI suggest that film outcomes also vary in ways consistent with the incomplete financial contracting hypothesis.

The literature on outside equity control predicts a theoretical trade-off between monitoring and incentives. Identifying whether these trade-offs are empirically relevant is difficult in practice since it is hard to find good proxies for the theoretical constructs. Motion picture financing provides an exception. In the motion picture industry, not only do we observe heterogeneity in financing, but we also can find reasonable variables related to theory. The

19. This may not be too surprising since the sequel variable was only weakly significant in Ravid's (1999) specification.

results of this article suggest that there are indeed both costs and benefits associated with outside equity control and that incomplete contracting-based theories may be useful in describing financing in other contexts.

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