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# PART VI: COMPETITIVE STRATEGY

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3 THE COMPETITIVE DYNAMICS OF  
5 VERTICAL INTEGRATION:  
7 EVIDENCE FROM U.S. MOTION  
9 PICTURE PRODUCERS, 1912–1970  
11

13 Giacomo Negro and Olav Sorenson  
15

17 **ABSTRACT**

19 *We investigate the competitive consequence of vertical integration on or-*  
21 *ganizational performance using a comprehensive dataset of U.S. motion*  
23 *picture production companies, which includes information on their vertical*  
25 *scope and competitive overlaps. Vertical integration appears to change*  
27 *the dynamics of competition in two ways: (i) it buffers the vertically*  
*integrated firms from environmental dependence and (ii) it intensifies*  
*competition among non-integrated organizations. In contrast to the ex-*  
*isting literature, our results suggest that vertical integration has impli-*  
*cations well beyond both the level of the individual transaction and even*  
*the internal efficiency of the integrated firm.*

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## INTRODUCTION

Organizational ecology's contributions to strategy have been at least three-fold. First and foremost, organizational ecologists, sometimes also known as corporate demographers, have drawn attention to the positive and negative interactions among populations of firms drawing on the same resources (e.g., raw materials, types of employees and customers), investigating not just how these forces influence organizations but also how they change over an industry's life cycle. Second, this perspective has emphasized the importance of demographic rates, primarily the births and deaths of firms, as measures of industry vitality. And finally, organizational ecologists have brought a truly enormous amount of data into the picture to answer these questions, avoiding many of the methodological problems inherent in cross-sectional studies or in small samples of unrepresentative firms (e.g., the Fortune 500).

Although a large number of questions have fallen under the purview of ecologists (as one can see in this volume), much open territory remains. Consider the issue of vertical integration – that is, the degree to which a firm encompasses two or more activities where output from one serves as input for another. By and large, the analysis of vertical integration in the strategy literature has relied on the (efficiency) logic of transaction cost economics (TCE) (Williamson, 1975; for exceptions, see Pfeffer & Salancik, 1978; Sorenson, 2003). This perspective argues that firms should (and do) integrate vertically when the need for specialized investments coupled with the tendency for independent actors to behave opportunistically renders prohibitively expensive the writing of a contract. Though this logic yields many useful insights, it also leaves us with a relatively limited understanding of the consequences of vertical integration because it focuses almost exclusively on factors internal to the firm, or, even more narrowly, the transaction.

Here, we apply an ecologist's lens to the question. This perspective leads us to ask not how vertical integration influences the efficiency of the transaction itself, but rather, how does it alter the interactions between organizations in an industry? Our primary claim is that vertical integration offers organizations privileged access to resources, buffering them from the negative effects of competition while simultaneously intensifying competition among non-integrated rivals. We argue that integration guarantees organizations access to a larger share of the resources required for operation. In essence, when facing constraints in the scale of a production activity, integrated firms first supply the internal demand for these goods and services

1 before they offer it to other potential buyers. As a result, integrated firms  
face a lower risk either of an interruption in production or of slowed growth  
3 as a result of an inability to obtain internally produced resources. The in-  
tensity of competition among non-integrated firms simultaneously rises be-  
5 cause these firms must compete over the portion of resources not locked up  
in the integrated producers. These processes may also influence the relative  
7 positioning of integrated and non-integrated firms. In particular, we suspect  
that the protection from competition afforded by vertical integration might  
9 allow and encourage integrated firms to exploit broader niches.

To corroborate these speculations, we analyzed an original dataset of  
11 motion picture production companies in the United States from 1912 to  
1970. Our analysis of the exit rates of these firms revealed several interesting  
13 results: (i) integrated production companies exit the population at a lower  
rate than non-integrated firms, even after accounting for differences in scale;  
15 (ii) integrated production companies exhibit less susceptibility to diffuse  
competition both from other integrated firms and from non-integrated  
17 firms; (iii) integrated production companies also appear unaffected by lo-  
calized competition with non-integrated firms; and (iv) non-integrated pro-  
19 duction companies exhibit greater susceptibility to competition from  
integrated producers than from other non-integrated firms. Integration also  
21 appears to limit the negative consequences of broad scope, thereby allowing  
integrated firms to maintain more variety in their product lines. In contrast  
23 to the dominant antitrust logic, then, our results suggest that vertical in-  
tegration has a positive effect – the provision of greater product variety –  
25 that may offset its negative effect on pricing (through the exercise of market  
power).

27

## 29 **THE CONSEQUENCES OF VERTICAL INTEGRATION**

31 One of the most important questions in both the management and study of  
organizations has been: What is the appropriate scope of the firm (i.e.,  
33 Where should the firm draw its boundaries)? The critical factor in answering  
this question is an understanding of how changes in firm boundaries (scope)  
35 alter the behavior and performance of organizations.

Scope varies along multiple dimensions – geographic, horizontal and  
37 vertical – all of which have important consequences for firm performance  
and industry dynamics. We nonetheless focus here on a single dimension:  
39 vertical scope. Researchers typically label expansions in vertical scope as  
vertical integration. In particular, vertical integration refers to situations

1 where an organization encompasses two or more stages of a production  
3 process. In other words, cases in which a firm produces an output that  
5 becomes an input to another segment of the firm's operations. Examples of  
7 vertical integration would include automobile manufacturers that either  
9 produce the engines used in their cars or sell cars to consumers through their  
11 own dealerships, and soda manufacturers that also bottle and distribute  
13 their soft drinks. In our context, vertical integration refers to those motion  
15 picture production companies that also distribute their own films.

17 Researchers have devoted substantial attention to understanding numerous  
19 features of the processes related to vertical scope extension. One might  
21 cluster this research into two streams: (i) the reasons why firms decide to  
23 integrate vertically and (ii) the consequences of being integrated (for recent  
25 reviews of theory and empirical studies, see Joskow, 2005; Klein, 2005).  
27 When separated along these dimensions, the former question has received a  
29 great deal more attention than the latter. Such a characterization, however,  
31 strikes us as misleading. To the extent that efficiency logic has dominated  
33 the analysis of the antecedents of vertical integration, the two issues have  
35 been conflated: These perspectives contend that firms integrate vertically  
37 when doing so would improve their economic performance. Hence, the two  
39 issues become one and the same.

### *Efficiency Logics*

25 Perhaps the most prominent approach to understanding the function of  
27 vertical integration is TCE. TCE maintains that engaging in transactions  
29 exposes actors to a series of potential costs, contractual and organizational  
31 hazards, that depend on the nature of the transactions themselves (Williamson,  
33 1971, 1975). Examples include the cost of writing complete contracts covering  
35 all contingencies, monitoring performance following the contract, and bargaining  
37 over unexpected events. These ex ante and ex post costs vary as a function of  
39 several factors including the uncertainty, frequency and complexity of the transactions,  
but asset specificity plays the central role. Asset specificity refers to the degree to which sunk investments  
have alternative uses outside of the existing buyer–seller relationship. Specific investments have few alternative uses. This inflexibility provides an  
incentive for the party not making these investments to behave opportunistically, attempting to renegotiate terms to their advantage once the investments  
have been made. As a result, parties facing such risks tend to underinvest in specific investments in the first place. In these circumstances,

1 vertical integration therefore often represents a superior solution for or-  
2 ganizing transactions.

3 Whereas TCE underscores the relevance of **ex post** costs and their con-  
4 nection to **ex ante** investment incentives in contractual arrangements, prop-  
5 erty rights theory highlights the inefficiencies that can arise when split  
6 ownership produces a misalignment of incentives (Grossman & Hart, 1986;  
7 Hart & Moore, 1990). Again, the argument turns on the value of specific  
8 assets; non-integrated firms tend to underinvest in specific assets when the  
9 costs of developing them would fall unduly on one party. Joint ownership  
10 avoids underinvestment in these specific assets by aligning the incentives of  
11 the two parties. Though pointing to a different mechanism, like TCE,  
12 property rights theory focuses on the efficiency of the transaction as the  
13 consequence (and also the antecedent) of vertical integration.

14 The empirical support for these efficiency logics remains somewhat thin.  
15 The bulk of research to date corroborating the TCE perspective has in-  
16 volved cross-sectional correlations between asset specificity and vertical in-  
17 tegration. Although these studies overwhelmingly find positive correlations,  
18 their cross-sectional nature does not allow one to discern whether firms  
19 integrated because of the perceived value of developing specific assets or  
20 because integration in an earlier period shifted the incentives for future  
21 specific investments. Moreover, these studies do not really consider whether  
22 integration improved performance. Rumelt (1974), in fact, finds that ver-  
23 tically integrated firms underperform non-integrated firms, a result that  
24 seems difficult to reconcile with the notion that these decisions have been  
25 made to promote economic efficiency. The most convincing evidence for an  
26 efficiency logic comes from a study of the for-hire trucking industry (Sil-  
27 verman, Nickerson, & Freeman, 1997; Nickerson & Silverman, 2003). It  
28 found that companies employing an “inappropriate” governance of certain  
29 labor and capital market transactions experienced higher failure rates,  
30 though these effects appeared weak relative to the importance of age, size  
31 and density dependence on failure rates.

32

### *Adaptation*

33

34 Although the idea that governance arrangements influence the efficiency of  
35 transactions has received substantial attention the effects of vertical inte-  
36 gration on other organizational features and outcomes has been less exten-  
37 sively explored. For instance, the focus on specific investments does not  
38 account for the fact that while vertically integrated structures may reduce  
39

1 opportunism, they also impose structural costs and constraints. Williamson  
(1975), for example, asserted that vertical integration represents an inferior  
3 strategy for obtaining, processing and employing various types of information,  
such as price/cost structures and technical evaluations. These disadvantages,  
5 however, would accrue to the firm as a whole rather than to the focal transaction.

7 A more dynamic perspective on the effects of vertical integration has been  
developed by Sorenson (1997, 2003). He argued that vertical integration  
9 engenders interdependence among a firm's activities and that this interdependence  
has countervailing short- and long-term effects. In the short term,  
11 integrated firms can often benefit from interdependence through synergy by  
producing goods of higher quality or with novel features. They can also  
13 eliminate the search costs associated with locating external exchange partners  
because they rely on internal resources to manage their transactions.  
15 Indeed, Sorenson's empirical analysis of the exit rates of computer workstation  
manufacturers from 1980 to 1996 found that firms integrated into  
17 the production of components enjoyed an approximately 33 percent lower  
hazard of exit than non-integrated producers.

19 In the longer term though, vertical integration can become a disadvantage  
because interdependence limits the rate of organizational learning. Organizational  
21 knowledge resides in routines, and increasing levels of interdependence,  
such as those found in integrated firms, tend to obscure specific  
23 cause-effect relationships. Integration therefore stymies the identification of  
effective routines. Moreover, even when firms do discover more effective  
25 procedures, interdependence also increases the costs and difficulties associated  
with implementing them because the interactions between operations  
27 typically produce a cascading series of unintended consequences within the  
firm in response to any change. As a result, integrated firms benefit less from  
29 learning through cumulative experience. Consistent with this logic, Sorenson  
(1997, 2003) found that a history of vertical integration increases the exit  
31 rates of workstation producers.

Unlike efficiency perspectives, this approach does not assume that firms  
33 integrate to maximize performance. Indeed, defining optimal performance  
in any dynamic setting is difficult because it depends crucially on the discount  
35 rate. Firms (or managers) that discount the future heavily prefer to integrate  
for short-term gains, but those with more distant horizons remain  
37 unintegrated to maximize the future benefits of learning. On the other hand,  
this perspective, like the efficiency-based accounts, focuses on the effects of  
39 vertical integration on the *internal* operations of the firm.

1 *Competitive Interaction*

3 Although a great deal of research has considered the effect of integration on  
4 internal processes, relatively less attention has been given to how vertical  
5 integration might influence processes external to the organization. A clear  
6 exception (discussed below), however, appears in the theories expounded  
7 both in antitrust case law and in an accompanying (largely game theoretic)  
8 literature in economics. To address the question of how integration affects  
9 processes external to the organization, we adopt an ecological perspective.  
10 Organizational ecologists have highlighted the importance of two processes  
11 – legitimation and competition – in industry evolution. Our principle insight  
12 with respect to this perspective is that integrated firms differ from non-  
13 integrated firms because integration alters the nature of competition for  
14 scarce resources.

15 The density dependence model relates the processes of legitimation and  
16 competition to changes in population vital rates. By definition, all firms  
17 within a population could draw on the same set of resources to sustain their  
18 survival. Legitimation increases the viability of firms by easing access to  
19 these resources, while competition for limited resources reduces firm vi-  
20 ability. By assuming that these processes both relate to the number of or-  
21 ganizations in a population (i.e., its density) – legitimation increasing  
22 linearly (or less than linearly) with density while competition increases as a  
23 function of its square – organizational ecologists produce an expectation of  
24 a non-monotonic relationship between population density and vital rates.  
25 Specifically, entry into the population should follow an inverse U-shaped  
26 curve, first increasing and then decreasing with greater population density,  
27 and exit from the population should follow a U-shaped function. Dozens of  
28 studies have found empirical support for these expectations (Carroll & Han-  
29 nnan, 2000).

30 How then does vertical integration modify competition and competitive  
31 interaction? Increased vertical scope reduces an organization's dependence  
32 on the external environment (Thompson, 1967; Pfeffer & Salancik, 1978).  
33 Consider a case of forward integration, where a firm engaged in manufact-  
34 uring activities extends its scope into distribution. As a producer, the firm  
35 in question can better control schedules and smooth deliveries by integrating  
36 into distribution. As a distributor, the firm foregoes the costs of coordinat-  
37 ing operations, monitoring the market and responding to unstable supply.  
38 This forward integration has two effects. On the one hand, internally, it  
39 stabilizes inputs for the distribution side of the business and secures demand  
40 for the manufacturing side, thereby mitigating some of the uncertainty typ-

1 ically associated with these activities. On the other, externally, it reduces the  
supply of goods available to non-integrated distributors and the availability  
3 of distribution outlets to non-integrated manufacturers.

Even when integrated firms do seek to access resources from outside the  
5 firm, they likely enjoy an advantage relative to non-integrated rivals. To the  
extent that vertical integration reduces the uncertainty inherent in the co-  
7 ordination of production processes across firms, external parties perceive  
less risk in dealing with integrated firms and hence prefer them in nego-  
9 tiations. For example, an actor knows that an integrated production com-  
pany will almost certainly distribute any film it produces ~~to theaters~~, while  
11 an independent producer on the other hand may fail to negotiate a distri-  
bution agreement. To the extent that the actor's compensation depends on  
13 the revenue it produces, he would then have a higher expected value for the  
film being produced by the integrated company. And even if his compen-  
15 sation did not depend on box office performance, he would likely prefer the  
film with guaranteed distribution as its greater likely visibility increases his  
17 odds of being considered for roles in future projects. Owing to this privi-  
leged access to external resources, vertical integration might reduce the  
19 volume of resources available to non-integrated firms by an even greater  
amount than the sum of resources internalized by integrated firms.

21 We see these processes potentially influencing density dependence in a  
variety of ways. At the most basic level, integrated firms should exhibit less  
23 sensitivity to diffuse competition. Because integrated firms have internalized  
a portion of the resources they require, they should compete less intensely  
25 both against non-integrated firms and vis-à-vis other integrated firms. This  
process should enhance the survival chances of integrated firms, particularly  
27 as the competition for resources associated with increasing density becomes  
more intense.

29 **Hypothesis 1.** Vertical integration reduces the positive effect of density on  
exit rates.  
31

A more nuanced picture, however, arises from considering the potential  
33 differential effects of density both within and across sub-populations. Here,  
we expect that vertical integration would engender asymmetric competition.  
35 First consider the effects of the density of integrated firms. Integrated firms  
should exert more competitive pressure on non-integrated firms than on  
37 other integrated firms. This effect reflects the advantageous position of in-  
tegrated firms relative to non-integrated firms with respect to accessing ex-  
39 ternal resources. On the other hand, non-integrated firms should compete  
less intensely with integrated firms than with their non-integrated peers.

1 Two factors underlie this effect. First, the internalization of inputs among  
2 integrated firms reduces the number of fronts on which they must compete  
3 with non-integrated firms for critical resources. Second, even when the two  
4 sub-populations do vie for resources, integrated firms enjoy an advanta-  
5 geous position compared to non-integrated firms.

6 Although vertical integration may introduce asymmetry into the strength  
7 of competitive pressures across sub-populations, it is less clear whether these  
8 groups should differ in terms of density dependence within their sub-pop-  
9 ulations. Legitimation likely operates within each sub-population to some  
10 degree. On the one hand, both integrated and non-integrated firms might  
11 benefit mutually from the joint legitimation of the enterprise. The prevalence  
12 of each particular sub-form may nonetheless help to establish the legitimacy  
13 of a particular vertical scope of operations. With respect to competition,  
14 however, one might suspect that vertically integrated firms would compete  
15 less intensely with other integrated firms than non-integrated firms do with  
16 others of similar vertical scope because non-integrated firms compete on a  
17 day-to-day basis over a much larger range of the resources they require to  
18 sustain their operations.

19 **Hypothesis 2a.** Integrated producer density increases the exit rates of  
20 non-integrated producers more than non-integrated producer density.

21 **Hypothesis 2b.** Non-integrated producer density increases the exit rates of  
22 integrated producers less than integrated producer density.

23 A more fine-grained consideration of competitive intensity yields addi-  
24 tional evidence for the effect of vertical integration on competitive dynam-  
25 ics. Although the density dependence model assumes that all firms interact  
26 with one another, in practice firms typically respond more directly to in-  
27 teractions occurring within specific subsets of the resource space (Hannan &  
28 Freeman, 1977; McPherson, 1983; Baum & Singh, 1994). One observes this  
29 general insight across a variety of dimensions: Organizations of similar size  
30 compete more intensely with each other than with firms of either larger or  
31 smaller scale (Baum & Mezias, 1992). Firms overlapping to a greater extent  
32 in the nature of the services they provide experience higher failure rates  
33 (Baum & Singh, 1994; Dobrev, Kim, & Hannan, 2001). Organizations that  
34 recruit from the same population of potential employees exhibit greater  
35 interdependence in their vital rates (Sørensen, 1999, 2004). And geographic  
36 proximity, which increases the degree of overlap both in terms of inputs and  
37 in terms of potential buyers, dramatically intensifies competition (Sorenson  
38 & Audia, 2000; Stuart & Sorenson, 2003).

1 Just as we expect vertical integration to modify the nature of density  
 3 dependence across and within integrated and non-integrated firms, we also  
 5 anticipate that it should alter the effects of direct overlap in organizational  
 7 niches. We argued above that integrated firms should exhibit less sensitivity  
 9 to diffuse competition over inputs and/or outputs compared to non-inte-  
 11 grated firms due to benefits from internalization and asymmetric positions.  
 13 Here we expect that increasing overlap hurts all firms, but that overlap  
 between integrated firms and non-integrated firms should primarily disad-  
 vantage the non-integrated firms. Two mechanisms produce this expecta-  
 tion. First, integrated firms depend less on the resources they share with  
 non-integrated firms even when their niches overlap substantially. Second,  
 they also have an advantage in accessing these resources when they compete  
 for them against non-integrated firms.

15 **Hypothesis 3a.** Competitive overlaps with integrated producers increase  
 17 the exit rates of non-integrated producers more than competitive overlaps  
 with non-integrated producers.

19 **Hypothesis 3b.** Competitive overlaps with non-integrated producers in-  
 21 crease the exit rates of integrated producers less than competitive overlaps  
 with integrated producers.

23 These insights parallel closely those garnered from game theoretic models  
 of vertical integration (cf. Krattenmaker & Salop, 1986; ~~Ordover & Salinger,~~  
 1988; Saloner & Salop, 1990). In general, this literature demonstrates that  
 25 firms can often increase their profitability by integrating vertically. These  
 benefits in turn typically come at the expense of rivals that did not integrate.  
 27 Non-integrated firms find themselves paying more for critical inputs,  
 thereby reducing their profitability. To the extent that exit rates mirror  
 29 profits then this stream of research would appear to suggest that vertical  
 integration would reduce the exit rate of firms that integrate and raise the  
 31 exit rate of non-integrated firms.

We nonetheless have built our theory independent of this literature be-  
 33 cause several factors raise questions regarding the applicability of these  
 analytical models to our setting. First, these models have been limited to  
 35 markets with very small (and fixed) numbers of firms (often only two in any  
 one stage). By contrast the motion picture industry has hundreds of active  
 37 firms through most of our window of study. Though the intuitions of these  
 game theoretic models may extend to populations with large numbers of  
 39 firms, this robustness has not yet been demonstrated. Moreover, since these  
 models always assume a fixed population of producers, it has been silent

1 with regard to the competitive effects of population density. Second, inte-  
2 grated firms benefit in these models through their ability to manipulate  
3 prices. But in the film industry, production and distribution companies al-  
4 most always simply split the revenue from a particular firm, to share the  
5 risks associated with it. As a result, the transfer price is determined **ex post**.  
6 Similarly, theaters charge consumers uniform prices across films. Price  
7 therefore does not appear to offer a meaningful mechanism for gaining a  
8 competitive advantage in this context.  
9

11 **THE MOTION PICTURE INDUSTRY IN THE UNITED**  
12 **STATES**  
13

15 We analyze whether vertical integration influences the relationship between  
16 competitive interaction and organizational performance by studying the  
17 population of feature film production companies in the United States from  
18 1912 to 1970. The film industry offers a particularly appropriate context for  
19 studying the effects of vertical integration on competitive interaction for  
20 four main reasons. First, a clear sequential interdependence of activities  
21 links the production and distribution of films: production companies as-  
22 semble creative and technical inputs to make a film and then license the  
23 negative print to a distributor, which proceeds to market the right to use  
24 positive prints of a film to exhibitors. Second, this sequential interdepend-  
25 ence nevertheless does not require either party to sink a specific investment  
26 into the transaction. On the contrary, production companies can consider  
27 distributors fungible because they do not offer differentiated services (Con-  
28 ant, 1960). As a result, we can separate the competitive effects of integration  
29 from the competitive consequences of differentiation that might arise from  
30 specific investments. A third feature making the motion picture industry  
31 amenable to the study of vertical integration is that we can trace every  
32 exchange between production and distribution companies, thereby allowing  
33 us to develop a far more nuanced picture than the typical study of vertical  
34 integration. Fourth, the geographic concentration of the film industry in  
35 Hollywood allows us to isolate vertical integration from other relevant  
36 scope dimensions such as localization.

37 The feature film industry in the United States began in 1912, following the  
38 appearance on screen of longer films imported from Europe. Feature-length  
39 films (usually defined as longer than four reels, where each reel runs 1,000  
feet or about 10 min) altered the nature of production because they involved

1 multiple reels, thereby requiring more articulate production processes and  
higher levels of capital investment than the “shorts” that preceded them  
3 (Bordwell, Staiger, & Thompson, 1985). Distribution and exhibition also  
became more complex businesses as the industry transformed into one of  
5 differentiated products. Production companies had sold shorts by the foot,  
implicitly considering a minute of film a commodity, but bids across films  
7 began to diverge with the advent of these longer motion pictures. In fact,  
historians have even interpreted the emergence of the star system as a means  
9 of signaling audiences to alert them to the qualitative differences across  
offerings (Kerr, 1990).

11 Feature films enjoyed quick success. In 1914, roughly 14,000 exhibition  
outlets in the United States played feature films more or less exclusively  
13 (Lewis, 1933). Our data indicate that in the same year, 121 production  
companies released 327 films. Consumption continued to grow in the fol-  
15 lowing years: in 1921, theaters sold roughly 40 million tickets each week,  
and the number continued to grow throughout the decade (Lewis, 1933).  
17 The fact that feature films could build on the established demand for short  
film entertainment almost certainly contributed to its rapid adoption. De-  
19 spite this moderate substitutability on the demand side, the dramatic differ-  
ences in the organization and process of production meant that new  
21 populations of firms arose to meet this demand; very few producers of shorts  
successfully transitioned to producing feature length films (Mezias & Boyle,  
23 2005).

During this same period, the number of production companies and films,  
25 on the other hand, declined: 244 production companies released close to 650  
films in 1921 down from a peak of 926 in 1917. Fig. 1 shows the historical  
27 density of production companies over our observation period (1912–1970).  
In the drive to differentiate their films, production companies created longer  
29 and more expensive films that spent increasingly long periods in the theaters.  
These rising costs erected barriers to entry for those interested in producing  
31 movies, which may account in part for the diverging patterns of demand and  
density.

33 Throughout the industry’s history, production companies have varied in  
their choice of whether or not to integrate into distribution (see Fig. 2).  
35 When theaters first began exhibiting shorts to audiences, they would con-  
tract directly with production companies to purchase the films that they  
37 played. Hence, in this early stage, all companies essentially engaged in both  
production and distribution. Independent distribution companies emerged  
39 out of a recognition of inefficiencies in this system. Films typically had a  
limited life in any given theater; audiences demanded novelty. As a result,



Fig. 1. Density of Feature Film Production Companies.

rental companies, the precursors of distributors, arose to rent shorts to theaters so that they could share content acquisition costs. As the feature film industry evolved toward more differentiated products, these companies expanded the scope of their activities to include not just the purchase and rental of film reels, but also the marketing of motion pictures and eventually the copying of the negative.

In some cases, integration also extended into exhibition. During the second half of the 1920s, a group of integrated firms, called the “Majors” and composed of Paramount, Loew’s-MGM, Fox, Warner Bros and RKO emerged and became dominant players in the industry (Balio, 1993). When the Great Depression struck, theater attendance declined by more than 30 percent, forcing more than 4,000 theaters to close in the space of three years, dramatically increasing the concentration of ownership. The production and distribution of films also became increasingly concentrated. During the 1930s, the Majors produced and distributed more than half of all domestic features. A niche nonetheless remained for independent production companies because none of the Majors had sufficient production capacity to meet the demand of its own theater circuit. Integrated firms therefore de-

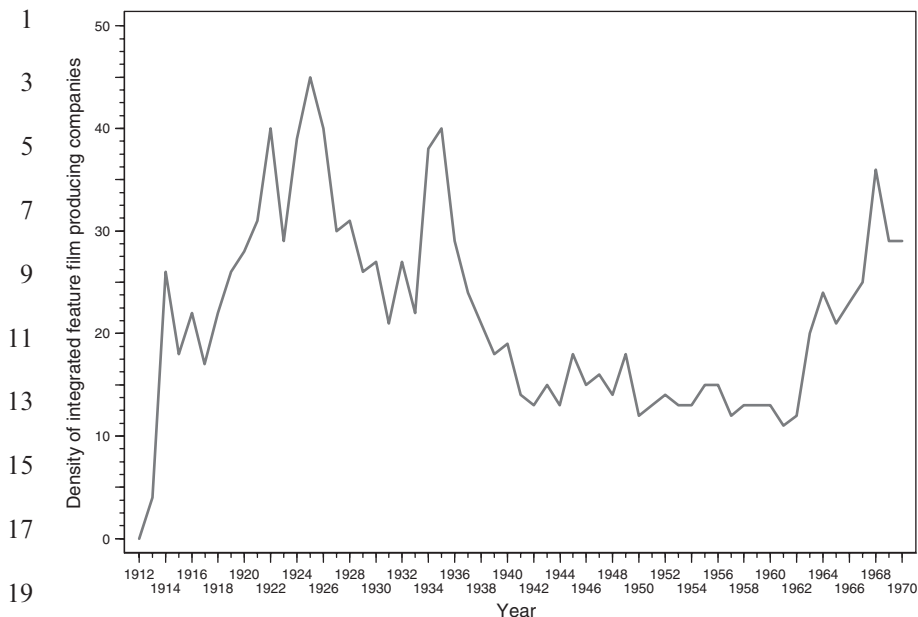


Fig. 2. Density of Vertically Integrated Feature Film Production Companies.

pendent on a residual external supply of feature films from other Majors and independent producers. This organization remained in place well into the 1940s.

In 1948, a decision by the Supreme Court in the *United States v. Paramount Pictures* antitrust case found the eight largest organizations guilty of restricting competition in the market for exhibition, and forced them to discontinue several practices that the Court considered illegal. In addition, the decision forced the separation of the five Majors into production/distribution businesses on the one side, and exhibition on the other side. Following this decision, the Majors reduced their production of films by more than 50 percent and concentrated increasingly on distribution and film financing (Christopherson & Storper, 1989). In their wake, the industry experienced a proliferation of independent production and distribution companies.

From 1946 to 1970, the demand for motion pictures declined. Attendance fell rapidly from 98 million tickets per week to 65 million in 1950 and to 44 million in 1955. Radio and more significantly television began to compete with motion pictures for consumers' leisure time, gradually eroding film

1 attendance. After 1955, the number of tickets sold continued to decline  
gradually until the early 1970s.

## ANALYSIS OF PRODUCER EXIT RATES

### Data

9 We analyzed an original database that includes all motion picture produc-  
11 tion companies in the United States. We began the observation period in  
1912, the year of release of the first American-produced feature film, and  
13 ended it in 1970, the last year covered by the primary data source. We  
reconstructed the life histories of production companies through the release  
15 dates of the films they made. Production companies enter the population  
with the release of their first film, and exit it the first day following the  
17 release date of their last film (Mezias & Mezias, 2000, adopt a similar strat-  
egy). As with other corporate demography studies that use product-level  
19 information to time entry, these data do not account for the duration of pre-  
production processes. The short period of time necessary to produce a film,  
21 however, should limit the importance of these pre-production periods in  
industry dynamics. On average, production companies can complete a film  
23 in 6–18 months.

The *American Film Institute Catalog of Motion Pictures* (AFI) serves as  
25 the primary data source. This directory comprises reviews of all motion  
pictures distributed in the U.S. between 1893 and 1970 and provides detailed  
27 information on each film – including the production company, distributor,  
release date, length and genre. In addition to this primary source, we also  
29 collected industry-level statistics and supplemental information from *The  
Motion Picture Year Book*, the *Motion Picture Almanac* and *Moving Picture  
31 World*, a trade journal. Although experts generally consider the AFI catalog  
the most complete and comprehensive source on the film industry (Mezias &  
33 Mezias, 2000), it has one shortcoming: It lists feature films released in the  
periods 1911–1950 and 1960–1970, but has not yet documented the period  
35 from 1951 to 1960. To fill this missing window, we consulted several ad-  
ditional sources: (i) A.G. Fetrow’s filmography covering film production in  
37 the U.S. in the 1950s, which reviews 3,069 movies; (ii) the *Motion Picture  
Catalog of the Library of Congress*, which provides a list of all films that  
39 received copyright protection from 1950 to 1959 along with their respective  
production and distribution companies; and (iii) *The Motion Picture Guide*

1 1927–1982, a 12-volume reference set edited by J.R. Nash and S.R. Ross, that provides comparable information (~~Nash & Ross, 1983~~). QA :2

3 We restricted the population of production companies in several ways. Films produced and released for non-commercial purposes, such as those  
5 commissioned by government agencies do not enter the data. We also excluded imported films as these come from non-U.S. based production  
7 companies. In cases of international coproduction, we included only those films in which an American producer was the majority stakeholder. Finally, we  
9 excluded films from the late 1960s that provided no information on genre. An examination of the titles and casts suggests that the majority of these  
11 films contained pornographic content or represented unauthorized re-releases of earlier material. The final dataset consists of life histories for 4,089  
13 production companies.

15

### *Measures*

17

Our dependent variable is exit from the motion picture industry. Exit offers  
19 an attractive means of estimating performance for at least two reasons. First, it is less susceptible to manipulation than accounting-based measures  
21 and therefore provides a more reliable measure of performance. Second, production companies in most cases are not required to, and do not, report  
23 financial information. When available, moreover, firms typically aggregate the financial information of production activities together with non-pro-  
25 duction activities, making it impossible to isolate the profitability of the business of interest.

27 Firms can exit industries in many different ways, including disbanding, bankruptcy, merger, acquisition, etc. For this study we could trace many  
29 instances of mergers, but only in cases where the merged entity produced a film following the merger. Moreover, we could not distinguish between  
31 other modes of exit so we do not attempt to analyze transition rates for these different types of events separately. Of the 4,089 producing organizations  
33 identified in the period, we observed 4,022 exits.

Our key explanatory variables are density, overlap density and vertical  
35 integration. We update all of our covariates annually using 12-month moving averages. Knowledge that production in the motion picture industry  
37 requires an average of 12 months of pre-entry activity governed our choice of lag (Squire, 1992). Following other recent studies (Ruef, 2004; Lomi,  
39 Larsen, & Freeman, 2005), we use moving averages as a means of adjusting for inertia in the rate at which firms respond to changes in population

1 density and environmental characteristics. The use of moving averages ac-  
 3 counts for the fact that organizational vital rates do not reflect exclusively  
 events that occurred precisely 12 months earlier and also reduces the effect  
 of measurement error in our recording of the timing of events.

5 We measured population *density* by counting the number of production  
 companies operating each year. In addition to total density, we calculated  
 7 counts of *integrated producer density* and *non-integrated producer density* to  
 investigate asymmetry in the density-dependent effects produced by these  
 9 two sub-populations.

We measured *vertical integration* using a dichotomous variable set to one,  
 11 if the producing organization also self-distributed at least one of its films in  
 a given year, or set to zero otherwise. In separate (unreported) analyses, we  
 13 calculated a continuous ratio measure of integration by dividing the number  
 of self-distributed films by the total number of films produced in a year.  
 15 Analyses using that continuous measure produced qualitatively equivalent  
 results to those we report here. We nonetheless prefer the dichotomous  
 17 measure because it more clearly distinguishes scope from size, and also eases  
 the interpretation of the interaction terms.

19 We measured localized competition through niche *overlap density*, the  
 sum of niche overlaps (in terms of genre space) between the focal organ-  
 21 ization and all other firms releasing films in a particular year (Baum &  
 Singh, 1994). The overlap density for an organization in niche  $i$  at time  $t$  is  
 23 given by

$$N_{it} + \sum_{j \neq i} w_{ij} N_{jt} \quad (1)$$

27 where  $N_{it}$  is the number of production companies in niche  $i$  at time  $t$ ,  $N_{jt}$  the  
 number of production companies in niche  $j$  at time  $t$  and  $w_{ij}$  the niche  
 29 overlap weight for production companies in niche  $i$  with those in niche  $j$ .  
 Our operationalization of organizational niche comes from the classification  
 31 of films into genres. AFI classifies films into 72 different genres, but the  
 classification we used includes only 53 categories because we grouped to-  
 33 gether genres, which appear nearly synonymous (e.g., baseball, boxing and  
 football group into a single “sports” genre). Genres represent socially con-  
 35 structed categorizations of conventions regarding content and form (DiM-  
 aggio, 1987). As social constructions, the rules for inclusion and exclusion  
 37 remain somewhat fluid over time and a continuous logic of membership  
 probably better represents the truth than a discrete one. These categories  
 39 nonetheless provide meaningful if rough information on niche positions for  
 two reasons: First, audiences respond to genre characteristics when they

1 select films to view (Austin, 1989). Second, barriers do appear to constrain  
 2 the easy movement from one genre to another to some extent. For instance,  
 3 producing a Western requires different resources and strategies from a musical  
 4 (lighting, sound equipment, props, choreography, etc.). As a result,  
 5 production companies likely compete more intensely with other organiza-  
 6 tions operating in the same genres. Since we do not have a clear means of  
 7 assigning distances between genres, our formulation of niche overlap<sub>p</sub> as-  
 8 sumes that  $w_{ij} = 0$  and that overlap density is equal to

$$\sum_i N_{i_k} \quad (2)$$

11 in other words, to the sum of production companies operating in all niches  
 12 where producer  $i$  competes (less one).

13 In addition to these variables of interest, our analyses include several  
 14 controls. To account for age dependence, we estimate a piecewise exponen-  
 15 tial specification of time dependence that we describe in greater detail below.  
 16 By including time-varying information on *size*, we can isolate the effects of  
 17 age from scale. Research on time-varying size and life chances has concep-  
 18 tualized organizational size in two ways: capacity and scale of operations.  
 19 Our measure here, the (log of) annual volume of film production (i.e., a  
 20 count of films released in the previous 12 months) focuses on the absolute  
 21 scale of operations. Companies engaged in more projects may survive longer  
 22 thanks to their ability to diversify away some of the project-specific uncer-  
 23 tainty plaguing each individual film (De Vany, 2004). In addition to ab-  
 24 solute size, we also control for *relative size* effects, calculated as the ratio of  
 25 an organization's absolute size to the largest size observed in the population  
 26 for a given year. Scale-based processes can affect survival in complex ways,  
 27 and the largest organizations may enjoy positional gains by way of scale  
 28 advantages in politics, production costs, etc. (Dobrev & Carroll, 2003).

29 We also included several industry-level variables to control for changes in  
 30 carrying capacity and industry structure. First, we included *weekly attend-*  
 31 *ance* in terms of millions of admissions per year. Over the observed period,  
 32 motion pictures went from being the primary form of visual entertainment  
 33 (1912–1946) to being an alternative to television (1947–1970). Second, we  
 34 introduced a measure of market *concentration* to control for potential bar-  
 35 riers to entry and the alternative explanation of resource partitioning (Car-  
 36 roll, 1985; Mezas & Mezas, 2000). We calculated a Hirschman–Herfindahl  
 37 index, obtained by squaring and then summing the market share of each  
 38 producer based on the number of films produced (multiplied by 100).<sup>1</sup>  
 39 Third, we included two dichotomous variables to capture period effects.

**Table 1.** Descriptive Statistics.

Variable	Mean	Std dev	Min	Max
Tenure	3.94	7.15	1	56
Weekly attendance (/1,000,000)	45.23	22.6	17.9	87.25
Studio system period	0.25	0.43	0	1
Post-paramount period	0.48	0.5	0	1
Market concentration (/1,000)	3.76	2.75	0.51	58.5
Absolute size	0.5	1.92	0	4.44
Relative size	0.08	0.15	0	1
Density	177.75	64.06	2	310
Density <sup>2</sup> (/100)	357	243.05	0	961
Vertical integration	0.13	0.34	0	1
Density integrated	22	8.54	0	42
Density <sup>2</sup> integrated (/100)	5.73	4.17	0	18
Density non-integrated	155.42	61.11	2	269
Density <sup>2</sup> non-integrated (/100)	278.89	203.87	1	723
Overlap density	34.97	46.21	0	326
Overlap density integrated producers	11.39	19.25	0	174
Overlap density non-integrated producers	23.58	32.33	0	152
Niche width	2	2.63	0	24

One variable controls for the potential effects associated with the establishment of the Hollywood *studio system* (RKO, the youngest of the Majors, began producing films in 1928); our measure takes a value of one between 1928 and 1947, and zero otherwise. Historical analyses of the industry suggest that total integration might have reduced the viability of specialized producers because the Majors controlled access to a significant proportion of first-run theaters (Conant, 1960; Balio, 1985). A second variable, *post-Paramount*, captures the potential impact of antitrust actions on the structure of the industry. In 1948, a government suit against the eight largest firms (*United States v. Paramount Pictures*, 334 U.S. 131) culminated in a Supreme Court decision that imposed divestiture of the exhibition chains owned by the Majors. The variable takes the value of one from 1948 to 1970 and zero otherwise.<sup>2</sup> Table 1 reports descriptive statistics for the variables used in the regressions.

*Estimation*

We estimate the effects of vertical integration and competitive interaction on organizational performance using survival (event history) analysis. More

1 specifically, we estimate the hazard of exit from the market, defined as

$$3 \quad \mu(t) = \lim_{\Delta t \rightarrow 0} \frac{\text{pr}(t \leq T \leq t + \Delta t | T > t)}{\Delta t} \quad (3)$$

5 where  $T$  is a random variable representing the time of exit,  $t$  denotes the  
 7 amount of time that producer  $i$  has been in operation and  $\text{Pr}(\cdot)$  represents  
 the probability of exit over the interval  $(t, t + \Delta t)$  given that the production  
 9 company still had ongoing operations at the beginning of the interval. Age  
 dependence is a crucial feature of these models. We adopt the piecewise  
 11 exponential specification, which allows the base rate of exit to vary flexibly  
 with organizational age. In particular, this approach splits time into pieces  
 13 according to the tenure of the organization. The base failure rate remains  
 constant within each timepiece, but these base rates can vary across pieces.  
 15 As a result, the piecewise model does not require any strong assumption  
 about the exact form of duration dependence (for more information on this  
 17 approach, see Barron, West, & Hannan, 1994).

We define the  $P$  pieces according to break points

$$19 \quad 0 \leq \tau_1 \leq \tau_2 \leq \dots \leq \tau_p \quad (4)$$

21 and with  $\tau_{p+1} = \infty$ . Our exploratory research on the population found the  
 23 best fit using five break points at 1, 2, 4, 10 and 20 years (intervals open on  
 the right). The first segment then includes events occurring within the first  
 25 year of tenure in the industry and cases that enter and exit within the same  
 year. The second segment includes events that occur within the first and  
 27 second years of tenure, and so forth.

We specify producer exit rates  $r(u, t)$  as a function of firm tenure in the  
 29 industry,  $u$ , a set of time-varying covariates,  $X$ , and a set of time-invariant  
 covariates,  $Z$

$$31 \quad \ln r_i(u) = m_p + \sum \alpha_x x_{it} + \sum \beta_z z_i \quad (5)$$

33 where  $m_p$  denotes tenure-specific effects, and  $\alpha$  and  $\beta$  respectively scale the  
 35 effects of time-varying and time-invariant effects. To estimate rate models  
 with time-varying covariates, we constructed split-spell data breaking ob-  
 37 servation periods with durations of more than one year to allow for the  
 updating of annual covariates.

39

*Results*

1  
3 Tables 2 and 3 report the results of our analysis. Model 1 provides a baseline  
5 density-dependence model. The baseline shows that film production follows  
7 the expected form of density-dependent evolution, with exit rates having the  
9 predicted U-shaped relationship to density. The results also suggest that film  
11 production companies suffer from a liability of newness and experience  
13 decreasing exit rates over time. The extremely high exit rate associated with  
15 the first year of tenure may actually stem from a specific feature of the movie  
17 industry, where individuals frequently organize to produce a single motion  
19 picture and then intentionally disband. Or, this liability may reflect the risky  
21 nature of movie-making, where 8 out of 10 products fail at the box office  
23 (De Vany, 2004). The benefits associated with very long tenures may stem  
25 either from the development or selection of effective production routines  
and/or from having established relations with distributors or other critical  
resource holders (Sorenson & Waguespack, 2004).

17 With respect to scale, increasing size appears to provide an effective  
19 means of reducing market risks. All models reveal negative size dependence.  
21 Since analyses of the industry typically do not find substantial cost savings  
23 associated with the simultaneous production of multiple films, these effects  
25 likely stem more from risk diversification than from economies of scale. The  
non-significant effect of relative size also supports such an interpretation.  
Consistent with this idea, market concentration does not significantly in-  
fluence exit rates in any of the models (hence cost advantages do not appear  
to push smaller production companies out of the market).

27 Among the period effects, only the post-Paramount indicator variable  
29 ever shows a significant coefficient. Production companies experienced an  
31 increased hazard of exit following the divestiture of the Majors out of ex-  
33 hibition. Given that the justification for this decision revolved to some de-  
35 gree around the idea that the studio system had locked independent  
37 production companies and distributors out of the market, this result seems  
39 somewhat surprising. It might nonetheless stem from two factors. On the  
one hand, by reducing the barriers to entry, the Paramount agreement may  
have increased the number of firms with limited resources entering the in-  
dustry, thereby increasing the exit rate. Or, it may reflect a riskier environ-  
ment. Around the same time as the Paramount decision, production  
companies faced the arrival of television, which both increased the com-  
petition for leisure time and for many of the types of personnel required for  
motion picture production.

**Table 2.** Piecewise Exponential Regressions: Competitive Effects of Vertical Integration and Density Dependence on Producer Exit Rates.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Tenure $0 < u \leq 1$	2.644*** (0.181)	2.858*** (0.186)	2.820*** (0.187)	2.489*** (0.201)	3.932*** (0.924)
Tenure $1 < u \leq 2$	1.062*** (0.191)	1.297*** (0.197)	1.260*** (0.197)	0.830*** (0.212)	3.412*** (0.942)
Tenure $2 < u \leq 4$	-0.989*** (0.192)	1.227*** (0.197)	1.189*** (0.198)	0.729*** (0.212)	3.449*** (0.947)
Tenure $4 < u \leq 10$	0.777*** (0.193)	0.951*** (0.199)	0.971*** (0.199)	0.487** (0.234)	3.417*** (0.952)
Tenure $10 < u \leq 20$	0.716*** (0.213)	0.910*** (0.218)	0.910*** (0.218)	0.362* (0.215)	3.106*** (1.001)
Tenure $u \geq 20$	-0.054 (0.295)	0.495* (0.299)	0.482 (0.299)	0.306 (0.335)	1.661 (1.040)
Weekly attendance	0.002 (0.002)	0.001 (0.002)	0.002 (0.002)	0.003 (0.003)	-0.011 (0.011)
Studio system period	-0.093 (0.086)	-0.030 (0.087)	-0.035 (0.087)	-0.312*** (0.109)	0.995* (0.517)
Post-paramount period	0.101** (0.047)	0.030 (0.048)	0.035 (0.048)	0.053 (0.067)	1.155** (0.491)
Market concentration	-0.019 (0.014)	-0.016 (0.015)	-0.015 (0.015)	-0.022 (0.022)	-0.144 (0.101)
Absolute size	-1.465*** (0.053)	-1.429*** (0.053)	-1.430*** (0.053)	-1.717*** (0.062)	-1.052*** (0.121)
Relative size	-0.188 (0.442)	-0.159 (0.452)	-0.156 (0.451)	0.875 (0.613)	-2.282 (1.255)
Density	-0.016*** (0.002)	-0.016*** (0.002)	-0.016*** (0.001)		
Density <sup>2</sup>	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)		
Vertical integration		-0.842*** (0.063)	-0.652*** (0.111)		
Density <sup>2</sup> × integration			-0.001** (0.000)		
Density integrated				0.057*** (0.014)	-0.127** (0.594)
Density <sup>2</sup> integrated				-0.102*** (0.027)	0.216** (0.106)
Density non-integrated				-0.021*** (0.002)	-0.024*** (0.007)
Density <sup>2</sup> non-integrated				0.006*** (0.001)	0.010*** (0.002)
Log-likelihood	-16712.2	-16685.9	-16595.8	-13779.5	-681.208
Number of producers	4,089	4,089	4,089	3,913	363
Number of producer-year spells	9,316	9,316	9,316	8,044	1,272
Chi-square vs. null rate		228.75***	232.79***	173.14***	28.94***

Standard errors in parentheses.

\*  $p < 0.10$ .

\*\*  $p < 0.05$ .

\*\*\*  $p < 0.01$ .

**Table 3.** Piecewise Exponential Regressions: Competitive Effects of Vertical Integration and Niche Overlap on Producer Exit Rates.

Variable	Model 6	Model 7	Model 8
Tenure $0 < u \leq 1$	2.815*** (0.187)	2.477*** (0.194)	2.876*** (0.193)
Tenure $1 < u \leq 2$	1.250*** (0.197)	0.922*** (0.204)	1.313*** (0.203)
Tenure $2 < u \leq 4$	1.182*** (0.197)	0.853*** (0.204)	1.244*** (0.203)
Tenure $4 < u \leq 10$	0.915*** (0.218)	0.559*** (0.225)	0.964*** (0.223)
Tenure $10 < u \leq 20$	0.865*** (0.199)	0.536** (0.207)	0.929*** (0.205)
Tenure $u \geq 20$	0.457 (0.300)	0.504 (0.307)	0.507 (0.305)
Weekly attendance	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
Studio system period	0.014 (0.088)	0.017 (0.086)	0.025 (0.089)
Post-Paramount period	0.078 (0.050)	0.072 (0.057)	0.074 (0.050)
Market concentration	-0.019 (0.015)	-0.019 (0.014)	-0.026 (0.015)
Absolute size	-1.516*** (0.593)	-1.414*** (0.053)	-1.507*** (0.063)
Relative size	0.034 (0.452)	0.204 (0.447)	-0.505 (0.459)
Density	-0.016*** (0.002)	-0.016*** (0.002)	-0.016*** (0.002)
Density <sup>2</sup>	0.005*** (0.000)	0.004*** (0.000)	0.005*** (0.000)
Vertical integration	-0.840*** (0.063)	-0.850*** (0.063)	-1.102*** (0.287)
Overlap density	0.002*** (0.000)	0.002*** (0.001)	
Overlap density $\times$ integration		-0.004*** (0.001)	
Overlap of integrated producers			0.005*** (0.002)
Overlap of non-integrated producers			0.004*** (0.001)
Overlap of integrated $\times$ integration			0.001 (0.001)
Overlap of non-integrated $\times$ integration			-0.003*** (0.001)

*Table 3. (Continued)*

Variable	Model 6	Model 7	Model 8
Log-likelihood	-16592.1	-16580.4	-16650.9
Number of producers	4,089	4,089	4,089
Number of producer-year spells	9,316	9,316	9,316
Chi-square vs. null rate	240.19***	249.43***	290.52***

Standard errors in parentheses.

$p < 0.10$ .

\*\*  $p < 0.05$ .

\*\*\*  $p < 0.01$ .

QA :6

Model 2 introduces the main effect of vertical integration. Being integrated reduces the instantaneous hazard of exit from the population. The magnitude of the effect, moreover, is large: integrated producers have a 57 percent lower rate of exit than specialized producers ( $\exp^{-0.842} \cong 0.43$ ). This result is consistent with Sorenson's (2003) analysis of vertical integration in the computer workstation industry; he found that integrated manufacturers enjoyed a survival advantage of roughly 33 percent compared to non-integrated organizations. Model 3 then tests to what extent this effect stems from integration's ability to buffer firms from the competitive effects of density dependence. We find some support for this hypothesis.

Models 4 and 5 decompose density into two sub-counts, one for integrated production companies and another for non-integrated firms, and analyze the impact of these measures on the exit rates of the two sub-populations. For non-integrated producers, non-integrated density continues to exhibit a U-shaped relationship with exit rates, first falling and then rising with increasing density. The density of integrated firms, however, operates quite differently. Though the effect of integrated firm density on non-integrated producer exit appears first to rise and then to fall, exit rates peak at a point close to the maximum of the observed integrated density range ( $n = 29$ , where the multiplier of the rate is equal to 2.22). It therefore appears that integrated firms have a purely competitive effect on non-integrated producers. Though it seems that integrated firms do not help to legitimate the non-integrated form, it is also possible that the form had already been legitimated before production companies began integrating into distribution. As expected, integrated producer density increases the exit rates of non-integrated producers more than non-integrated producer density. For example, at their mean values, the density of integrated producers increases the hazard rate of exit by 100 percent (multiplier = 2.001 for

1  $n = 22$ ), while the density of non-integrated producers *decreases* the chance  
of exit by 83 percent (multiplier = 0.165 for  $n = 155$ ).

3 The densities of both integrated producers and non-integrated producers  
exhibit U-shaped relations to the exit rates of integrated producers. As one  
5 can see from the coefficient estimates, each integrated firm contributes much  
more to both the legitimating (first-order term) and competitive (quadratic  
7 term) effects of density. Consistent with our expectations, then, non-inte-  
grated producer density increases the exit rates of integrated producers less  
9 than integrated producer density. At the mean of their observed ranges, for  
example, integrated producer density decreases the rate of exit by 80 percent  
11 (multiplier = 0.203 for  $n = 22$ ), while non-integrated producer density de-  
creases the hazard rate by only 74 percent (multiplier = 0.258 for  $n = 155$ ).

13 Table 3 reports our analysis of the effects of niche overlap. Models 6–8  
address the effects of overlap. Models 6 and 7 test the main effect of overlap  
15 density and its interaction with vertical integration. As expected, increasing  
overlap with production companies operating in the same film genres re-  
duces organizational survival. Integrated production companies, on the  
17 other hand, do not appear to suffer from this overlap. Model 8 decomposes  
niche overlap according to vertical scope, showing that genre overlaps with  
19 integrated and non-integrated production companies show roughly equiv-  
alent effects, and includes the interactions between these overlap densities  
and vertical integration. The interaction between integration and integrated  
21 firm overlap is not significant, suggesting that integrated firms impose  
roughly equivalent competitive pressure on both integrated and non-inte-  
23 grated firms (hence failing to support Hypothesis 3a). The interaction be-  
tween integration and non-integrated firm overlap, on the other hand, is  
25 negative, significant and roughly equal in magnitude to the main effect of  
the overlap. Integrated firms therefore do not appear to suffer from com-  
27 petition with non-integrated firms (consistent with Hypothesis 3b). In sum,  
29 we find support for Hypotheses 1, 2 and 3b<sup>4</sup>, but not Hypothesis 3a.

31

## 33 INTEGRATION AND NICHE WIDTH

35 The results of the preceding section imply that vertical integration buffers  
integrated firms from competitive pressures, particularly from those gener-  
37 ated by non-integrated firms. Clearly, this buffering influences survival  
rates, but it might also affect other aspects of organizational behavior? Here,  
39 we investigate how vertical integration may interact with niche width in  
determining firm viability.

1 Film historians have analyzed production trends among the Hollywood  
2 Majors and their accounts suggest that each integrated producer developed  
3 similarly wide, but unique product strategies: MGM became prominent in  
4 the production of sophisticated dramas called “prestige films,” Paramount  
5 invested in comedies starring actors recruited from vaudeville, radio and  
6 stage, RKO introduced musicals, and distributed successful animated films  
7 created by Walt Disney (Bordwell et al., 1985; Balio, 1993).

8 The main reason that we suspect a link between these two dimensions is  
9 that buffering from competition may provide an incentive for vertically  
10 integrated firms to expand their horizontal scope. Broader scope offers the  
11 organization a greater ability to weather shifts in the environment, for ex-  
12 ample, as a result of changing consumer preferences. Previous studies have  
13 shown that firms with broad niches benefit from risk spreading and econom-  
14 ies of scale (Baum & Singh, 1994; Dobrev et al., 2001). This reduction in  
15 risk nevertheless comes at a price because as organizations expand their  
16 scope they come into competitive contact with a larger number of rivals. To  
17 the extent that vertically integrated firms can avoid this competition, scope  
18 offers a relatively greater advantage to these firms.

19 On the other hand, one might anticipate a positive relation between ver-  
20 tical and horizontal scope even in the absence of these incentives. Expansion  
21 in both directions might simply reflect the routines that reside at the core of  
22 the organization (Sorenson, McEvily, ~~Roy, & Ren, 2005~~). Firms that ex-  
23 pand their boundaries in one direction reveal operating procedures for and  
24 values favoring the expansion of firm scope. The very act of engaging these  
25 routines moreover may strengthen them as they become embedded within  
26 the firm's operations and routinized among employees.

27 The key difference between these two accounts concerns the benefits of  
28 expanded scope for integrated firms relative to non-integrated firms. The  
29 first argument implies that vertically integrated firms benefit more from  
30 broad scope than non-integrated firms, while the second argument does not.  
31 We therefore began our investigation by estimating the effects of niche  
32 width on organizational exit. We measured horizontal scope with *niche*  
33 *width*, calculated as the number of film genres in which the producing or-  
34 ganization engages. Table 4 presents the regression results of a model es-  
35 timating the effect of niche width, measured as the number of genres in  
36 which a producer operates, and integration on exit rates. As we expected,  
37 exit rates rise with niche width, but only for non-integrated organizations.  
38 Integrated firms should therefore prefer wider niches.

39 Consistent with this finding and with the historical accounts, vertically  
40 integrated firms appear to maintain a broader scope than non-integrated

**Table 4.** Piecewise Exponential Regressions: Competitive Effects of Vertical Integration and Niche Width on Producer Exit Rates.

Variable	Model 9
Tenure $0 < u \leq 1$	3.142*** (-0.196)
Tenure $1 < u \leq 2$	1.578*** (0.206)
Tenure $2 < u \leq 4$	1.510*** (0.206)
Tenure $4 < u \leq 10$	1.224*** (0.227)
Tenure $10 < u \leq 20$	1.191*** (0.208)
Tenure $u \geq 20$	0.681** (0.309)
Weekly attendance	0.001 (0.002)
Studio system period	-0.002 (0.087)
Post-Paramount period	0.046 (0.048)
Market concentration	-0.023 (0.015)
Absolute size	-1.233*** (0.074)
Relative size	-0.513 (0.457)
Density	-0.016*** (0.002)
Density <sup>2</sup>	0.005*** (0.000)
Vertical integration	-1.324*** (0.099)
Niche width	0.371*** (0.057)
Niche width × integration	-0.244*** (0.058)
Log-likelihood	-16561.3
Number of producers	4,089
No. of producer-year spells	9,316
Chi-square vs. null rate	266.94***

Standard errors in parentheses.

\*\*\*  $p < 0.01$ .

\*\*  $p < 0.05$ .

\*  $p < 0.10$ .

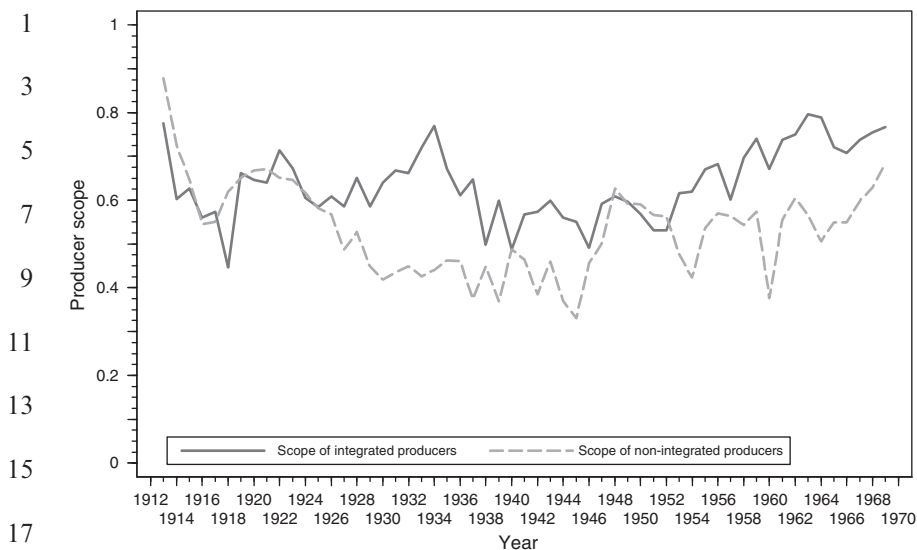


Fig. 3. Integrated, Non-Integrated Producers and their Scope.

firms for most of the industry's history. Fig. 3 illustrates scope relative to size – the ratio of the number of genres represented to the number of films made – for both sub-populations (we exclude companies with only a single film in a year from these calculations because they trivially have a ratio of one).

## DISCUSSION AND CONCLUSION

Our results strongly suggest that vertical integration influences not just the internal operations of organizations, but also the competitive interactions between firms. We see both specific and broader implications of our study. At a more specific level, whereas previous research primarily emphasized the role of integration as an organizational arrangement to gain efficiency in transactions, we offer and support an ecological perspective on the vertical integration question. Vertical integration buffers firms from environmental uncertainty and competitive pressures through the internalization of input and output activities. Hence we find that integrated firms exhibit less sensitivity to diffuse competition, particularly that produced by non-integrated

1 firms. This buffering also appears to allow integrated firms to pursue  
broader product niches, which connotes its own advantages to these firms.

3 In addition to buffering integrated firms from the environment, vertical  
integration may also increase the intensity of competition experienced by  
5 non-integrated firms. Integrated firms enjoy privileged access to the re-  
sources they control directly. And owing to the greater stability they offer to  
7 resource providers, integrated firms may also receive preferential access to  
external resources. Because these ecological benefits result from the relative  
9 competitive strength of integrated firms vis-à-vis non-integrated firms, they  
likely offer the greatest benefits when the number of integrated firms is few  
11 relative to the number of non-integrated firms; when competing against  
other integrated rivals, integrated firms find themselves on level ground.

13 The combined analysis of integration and niche width moreover offers a  
more nuanced view of competitive processes, and the resulting evidence  
15 allows us to address other possible explanations for the observed patterns.  
First, one might argue that, contrary to our prediction, vertically integrated  
17 firms would compete more intensely with each other because their structural  
overlap increases. Not only do the general findings of less-intense density-  
19 and overlap-based competition run counter to this account, but also the fact  
that integrated producers enjoy lower exit rates when they expand their  
21 niche seems inconsistent with the expectations of this thesis. Second, we also  
believe that we can rule out the advantages of head-to-head competition as  
23 an alternative explanation for our findings (Klemperer, 1992). In cases with  
high search costs for alternative suppliers, competing head-to-head benefits  
25 firms and we would consequently expect higher exit rates for integrated  
producers. Again, however, we find the opposite effect. Finally, one might  
27 attribute our cross-competition effects to differences in the relative efficiency  
of integrated and non-integrated firms (and hence a consequence of differing  
29 internal processes rather than external ones). Though we cannot bring direct  
evidence to bear on this possibility, Corts' (2001) recent analysis of the  
31 release decisions of integrated and non-integrated firms finds evidence in-  
consistent with this hypothesis. Despite the advantage of coordinating re-  
33 lease dates to avoid product cannibalization, non-integrated producers and  
distributors actually exhibited less-clustered releases than integrated pro-  
35 ducers. From where such internal efficiency would arise therefore remains  
unclear in this setting.

37 Despite the support for the hypotheses we have developed, this study  
suffers from four main limitations. First, we have modeled and analyzed the  
39 impact of integration on film producers alone. To improve the validity of  
our results, we should observe similar patterns in the performance of film

1 distributors. Second and partly related to this, film producers do not develop  
2 specific investments with distributors but distributors may develop  
3 specific commitments with exhibitors, making the final outcome of integration  
4 more complex. Moreover, other types of sunk costs play a role here,  
5 raising the exit barriers that integrated firms face. For instance, advertising  
6 expenses crucially influence distributor performance and excluding them  
7 from the picture might lead to inappropriate inferences regarding the effects  
8 of integration. Third, we lack information on various forms of quasi-integration  
9 (e.g., strategic alliances) and hence cannot speak to whether or not these  
10 structures create dynamics similar to those of vertical integration.  
11 Finally, the focus on film genres as a measure for organizational niche  
12 means that we have analyzed realized rather than fundamental niches. The  
13 problem with the use of realized niche measures is that we cannot separate  
14 organizations' abilities to procure and exploit resources from the outcomes  
15 of their competitive interactions. Alternative niche measures therefore might  
16 provide a better basis for future empirical research on vertical integration  
17 and niche-width dynamics.

18 Though this study helps to clarify how horizontal competition affects and  
19 is affected by the vertical organization of industries, our results seem relevant  
20 to several other issues and literatures as well. For example, the analysis  
21 of horizontal and vertical scope can connect to niche width theory  
22 (Freeman & Hannan, 1983). In its original formulation, this theory considered  
23 the relationship between the width of an organization's fundamental niche  
24 and its capacity for resource utilization, holding that specialist strategies  
25 prevail over generalist strategies in fine-grained environments (i.e.,  
26 environments where resource distributions shift rapidly in time and/or  
27 space). If we believe the film industry occupies a fine-grained environment,  
28 with frequent fluctuations in demand, we expect to find a relative advantage  
29 to specialism. One might then expect that advantage to lead to the extinction  
30 of the other sub-form (Gause, 1934). Our results indicate, however, that  
31 integration can help to reduce the inferiority in the fitness of generalists,  
32 and concomitantly to explain the coexistence of generalists and specialists in  
33 industries.

34 Our results may also inform strategy research, particularly studies of  
35 multimarket competition (MMC). MMC occurs when firms encounter the  
36 same rivals in multiple markets. In these circumstances, competitive behavior  
37 may differ from that of single-point rivals because a firm that meets a  
38 rival in multiple markets can respond to an attack not only in the besieged  
39 market, but also in other markets in which both firms compete. MMC can  
therefore foster tacit cooperation, and reduce the intensity of competition

1 among rivals (Baum & Korn, 1996; Gimeno & Woo, 1999). Our analysis of  
2 the film industry suggests that, if producers “meet” rivals in the same genres,  
3 integration allows distinct strategies to reduce the effects of niche overlap.  
4 This effect could interfere with the incentive structure that allows tacit col-  
5 lusion to emerge in MMC, and therefore could mediate its effect on com-  
6 petitive intensity. We therefore see reason to incorporate information and  
7 theory on vertical integration in future studies of MMC.

8 Finally, our study provides evidence consistent with game theoretic and  
9 industry structure perspectives on integration. The basic argument in this  
10 literature is that vertical integration can increase profitability by internal-  
11 izing the downstream or upstream profit margin and augmenting the inte-  
12 grated firm’s market power through market foreclosure. Our study  
13 corroborates the intuition that vertical integration benefits the integrated  
14 firms and hurts the non-integrated ones. Most models that address the ver-  
15 tical foreclosure effect of integration nonetheless focus on the competitive  
16 exclusion of downstream firms rather than upstream competitors (Rey &  
17 Tirole, 2003). This becomes particularly important when economic theory  
18 maintains that vertical integration reduces consumer surplus and total wel-  
19 fare. By focusing on downstream market outcomes, these studies overlook  
20 the potential positive effects – that we find here – related to increased  
21 differentiation in the upstream market (see also Chipty, 2001).

22 What our study leaves answered is why firms choose different levels of  
23 vertical integration in the first place. Here, however, we believe that the  
24 companion paper by Gimeno, Chen, and Bae (this volume) offers a nice  
25 complement. They demonstrate that firms actively manage their output  
26 markets, resource endowments and strategic postures as a means of adjust-  
27 ing to (and thereby generally reducing) pair-wise competition. Though not  
28 considered in their analysis, our results suggest that we might usefully con-  
29 sider vertical integration another dimension of strategic action (and another  
30 means of reducing ecological interdependence) that managers vary in their  
31 responses to rivals. As our results imply that these moves have asymmetric  
32 consequences, however, the manner in which managers use integration as a  
33 response to pair-wise competition might well vary from that the actions  
34 considered by Gimeno, Chen, and Bae.

35 We also see potential policy implications in our study. The antitrust de-  
36 cision that forced the Majors to divest of their theaters turned on the notion  
37 that vertical integration allowed these firms to gain undue access to the  
38 market, to the detriment of both rival production and distribution compa-  
39 nies and consumers. Some scholars have nonetheless maintained that the  
40 hierarchical structure of the Major studios and the long-term contracts they

1 used to book films into theaters actually represented a more efficient so-  
2 lution to the problems associated with identifying demand, controlling  
3 principal-agent problems, and maintaining the flexibility necessary to adapt  
4 to new technologies (De Vany, 2004). Our results seem more consistent with  
5 the first view, but we see a novel twist. In particular, we find substantial  
6 evidence that forced divestiture might not have served public interest. First,  
7 in all of our models, the external reorganization required by the antitrust  
8 decision *increased* the exit rates of film production companies. One possible  
9 reason for this effect is that vertical integration may have helped to stabilize  
10 the industry as a whole, even if the majority of the advantages accrued to the  
11 integrated firms. Another possibility, of course, is that the combination of  
12 competition with, and the potential for ancillary markets in, television dis-  
13 rupted established routines around the time of the Paramount agreement.  
14 More research is required, but our findings nonetheless raise questions re-  
15 garding the standard antitrust wisdom.

16 Second, our investigation of product scope suggests that variety increases  
17 with vertical integration. At least two factors might account for this fact. On  
18 the one hand, vertical integration buffers firms from competition, thereby  
19 reducing the costs associated with broader scope. On the other hand, guar-  
20 anteed outlets also decrease the risks associated with producing novel gen-  
21 res. Before these new types of films gain legitimacy, distributors and  
22 exhibitors likely have a reluctance to commit to these untested products.  
23 Fig. 4 depicts the evolution of the maximum number of film genres in which  
24 producers operated. Consistent with our speculation, maximum diversity  
25 coincided with the period with the highest density of integrated production  
26 companies; following the Paramount case, it declined. One proposition de-  
27 riving from this argument is that reduced competition among vertically  
28 integrated firms has greater positive welfare consequences relative to com-  
29 petition among specialized producers because of the additional product va-  
30 riety supported by integration.

31 Finally, at a more general level, we view these results as a call for greater  
32 ecological research. In the late 1970s, with the emergence of organizational  
33 ecology, institutional theory and resource dependence, organizational schol-  
34 ars witnessed an explosion of interest in incorporating the environment  
35 more seriously into our understanding of the operations of organizations.  
36 Despite substantial progress in these research programs, the dominant mode  
37 of analysis with respect to many organizational questions remains a focus on  
38 the internal efficiency of the firm. Vertical integration is but one example.  
39 Extant empirical research has focused primarily on whether ownership  
offers a more efficient solution to contracting in a market (Williamson,



Fig. 4. The Maximum Number of Film Genres in which Producing Organizations Operated.

1975). Even “dynamic” analyses of this phenomenon have been framed in terms of whether firms appear to move toward this “equilibrium.” We claim that in addition to these internal effects, the consequences of many structural features of the organization, such as vertical integration, reverberate throughout the dynamics of a population. The effects ripple through the population because these structural features of the organization influence firms’ resource requirements and concomitantly their interactions with other firms either in the same or in overlapping niches.

### UNCITED REFERENCES

American Film Institute (AFI) (1989–1999); Copyright (1951–1971); Fetrow (1999); Gimeno, Chen, and Bae (2006); Izod (1988); Koszarski (1990); Or-dover, Saloner, and Salop (1990); Salinger (1988).

## NOTES

1. In unreported analyses, we also estimated models including interaction terms between size and concentration to capture the potential effects of consolidation on industry dynamics (Dobrev, Kim, & Carroll, 2002). This interaction term, however, had no significant effect on producer exit rates.

2. Several studies have argued that the nature of competition varies over an industry's lifecycle (Baum, 1995; Hannan, 1997; Sorenson, 2000). Though we tested these alternative specifications, none of them substantively modified the reported results.

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## REFERENCES

- American Film Institute (AFI). (1989–1999). *The American Film Institute Catalog of motion pictures produced in the United States: Feature films, 1911–1920, 1921–1930, 1931–1940, 1941–1950, 1961–1970*. Berkeley, CA: University of California Press.
- Austin, B. A. (1989). *Immediate seating: A look at movie audiences*. Belmont, CA: Wadsworth.
- Balio, T. (1985). *The American film industry*. Madison, WI: University of Wisconsin Press.
- Balio, T. (1993). *Grand design: Hollywood as a modern business enterprise 1930–1939*. Berkeley, CA: University of California Press.
- Barron, D. N., West, E., & Hannan, M. T. (1994). A time to grow and a time to die: Growth and mortality of credit unions in New York, 1914–1990. *American Journal of Sociology*, *100*, 381–421.
- Baum, J. A. C. (1995). The changing basis of competition in organizational populations: The Manhattan hotel industry, 1887–1990. *Social Forces*, *74*, 177–205.
- Baum, J. A. C., & Korn, H. J. (1996). Competitive dynamics of interfirm rivalry. *Academy of Management Journal*, *39*, 255–291.
- Baum, J. A. C., & Mezias, S. J. (1992). Localized competition and organizational mortality in the Manhattan hotel industry, 1898–1990. *Administrative Science Quarterly*, *37*, 580–604.
- Baum, J. A. C., & Singh, J. V. (1994). Organizational niches and the dynamics of organizational mortality. *American Journal of Sociology*, *100*, 346–380.
- Bordwell, D., Staiger, J., & Thompson, K. (1985). *The classical Hollywood cinema. Film style and mode of production to 1960*. London: Routledge.

- 1 Carroll, G. R. (1985). Concentration and specialization: Dynamics of niche width in popu-  
lations of organizations. *American Journal of Sociology*, 90, 1262–1283.
- 3 Carroll, G. R., & Hannan, M. T. (2000). *The demography of corporations and industries*. Princet-  
on: Princeton University Press.
- 5 Chipty, T. (2001). Vertical integration, market foreclosure, and consumer welfare in the cable  
television industry. *American Economic Review*, 91, 428–453.
- 7 Christopherson, S., & Storper, M. (1989). The effects of flexible specialization on industrial  
politics and the labor market: The motion picture industry. *Industrial and Labor Rel-  
ations Review*, 42, 333–347.
- 9 Conant, M. (1960). *Antitrust in the motion picture industry. Economic and legal analysis*. Be-  
rkeley, CA: University of California Press.
- 11 Copyright Office. (1951–1971). *Catalog of copyright entries: Motion pictures 1912–1939, 1940–  
1949, 1950–1959, 1960–1969*. Washington: Library of Congress.
- 13 Corts, K. S. (2001). The strategic effects of vertical market structure: Common agency and  
divisionalization in the U.S. motion picture industry. *Journal of Economics and Man-  
agement Strategy*, 10, 509–552.
- 15 De Vany, A. (2004). *Hollywood economics*. New York: Routledge.
- DiMaggio, P. J. (1987). Classification in art. *American Sociological Review*, 52, 440–455.
- 17 Dobrev, S. D., & Carroll, G. R. (2003). Size (and competition) among organizations: Modeling  
scale-based selection among automobile producers in four major countries, 1885–1981.  
*Strategic Management Journal*, 24, 541–558.
- 19 Dobrev, S. D., Kim, T.-Y., & Carroll, G. R. (2002). The evolution of organizational niches:  
U.S. automobile manufacturers, 1885–1981. *Administrative Science Quarterly*, 47, 233–  
264.
- 21 Dobrev, S. D., Kim, T.-Y., & Hannan, M. T. (2001). Dynamics of niche width and resource  
partitioning. *American Journal of Sociology*, 106, 1299–1337.
- 23 Fetrow, A. G. (1999). *Feature films 1950–1959: A United States filmography*. Jefferson, NC:  
McFarland and Company, Inc.
- 25 Freeman, J. H., & Hannan, M. T. (1983). Niche width and the dynamics of organizational  
populations. *American Journal of Sociology*, 88, 1116–1145.
- 27 Gause, G. F. (1934). *The struggle for existence*. Baltimore, MD: Williams and Wilkins.
- QA:4  
Gimeno, J., Chen, M. -J., & Bae, J. (2006). Dynamics of competitive niche positioning. In: J.  
A. C. Baum, S. D. Dobrev, & A. van Witteloostuijn (Eds), *Strategy and ecology: Ad-  
vances in strategic management* (Vol. 23). Oxford UK: JAI.
- 29 Gimeno, J., & Woo, C. Y. (1999). Multimarket contact, economies of scope, and firm per-  
formance. *Academy of Management Journal*, 43, 239–259.
- 31 Grossman, S., & Hart, O. (1986). The costs and benefits of ownership: A theory of vertical and  
lateral integration. *Journal of Political Economy*, 94, 691–719.
- 33 Hannan, M. T. (1997). Inertia, density and the structure of organizational populations: Entries  
in European automobile industries. *Organization Studies*, 18, 193–228.
- 35 Hannan, M. T., & Freeman, J. H. (1977). The population ecology of organizations. *American  
Journal of Sociology*, 82, 929–964.
- 37 Hart, O., & Moore, J. (1990). Property rights and the nature of the firm. *Journal of Political  
Economy*, 98, 1119–1158.
- ~~Izod, J. (1988). *Hollywood and the box office, 1895–1986*. New York: Columbia University  
Press.~~
- 39

- 1 Joskow, P. (2005). Vertical integration. In: P. Menard, & M. M. Shirley (Eds), *Handbook of new institutional economics*. New York: Springer.
- 3 Kerr, C. (1990). Incorporating the star: The intersection of business and aesthetic strategies in early American film. *Business History Review*, 64, 383–410.
- 5 Klein, P. (2005). The make or buy decisions: Lessons from empirical studies. In: P. Menard, & M. M. Shirley (Eds), *Handbook of new institutional economics*. New York: Springer.
- 7 ~~Kozarski, R. (1990). *An evening's entertainment. The age of the silent feature picture, 1915–1928*. Berkeley, CA: University of California Press.~~
- 9 Krattenmaker, T. G., & Salop, S. C. (1986). Anticompetitive exclusion: Raising rivals' costs to achieve power over price. *Yale Law Journal*, 96, 209–293.
- 11 Lewis, H. T. (1933). *The motion picture industry*. New York: D. Van Nostrand Company.
- 13 Lomi, A., Larsen, E. R., & Freeman, J. H. (2005). Things change: Dynamic resource constraints and system-dependent selection in the evolution of populations of organizations. *Management Science*, 51, 882–903.
- 15 McPherson, J. M. (1983). An ecology of affiliation. *American Sociological Review*, 48, 519–535.
- 17 Mezias, S. J., & Boyle, E. (2005). Blind trust: Market control, legal environments, and the dynamics of competitive intensity in the early American film industry, 1893–1920. *Administrative Science Quarterly* (forthcoming).
- 19 Mezias, J. M., & Mezias, S. J. (2000). Resource partitioning, the founding of specialist firms, and innovation: The American film industry, 1912–1929. *Organization Science*, 11, 306–322.
- 21 Nash, J. R., & Ross, S. R. (1983). *The motion picture guide 1927–1982*. New York: Cinebooks.
- 23 Nickerson, J. A., & Silverman, B. S. (2003). Why firms want to organize efficiently and what keeps them from doing so: Inappropriate governance, performance, and adaptation in a deregulated industry. *Administrative Science Quarterly*, 48, 433–465.
- 25 Ordover, J. A., Saloner, G., & Salop, S. C. (1990). Equilibrium vertical foreclosure. *American Economic Review*, 80, 127–142.
- 27 Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations*. New York: Harper and Row.
- 29 Rey, P., & Tirole, J. (2003). A primer on foreclosure. In: M. Armstrong, & R. Porter (Eds), *Handbook of industrial organization* (Vol. 3). New York: North-Holland.
- 31 Ruef, M. (2004). For whom the bell tolls: Ecological perspectives on industrial decline and resurgence. *Industrial and Corporate Change*, 13, 61–89.
- 33 Rumelt, R. P. (1974). *Strategy, structure and economic performance*. Boston: Division of Research, Graduate School of Business Administration, Harvard University.
- 35 Salinger, M. A. (1988). Vertical mergers and market foreclosure. *Quarterly Journal of Economics*, 77, 345–356.
- 37 Silverman, B. S., Nickerson, J. A., & Freeman, J. H. (1997). Profitability, transactional alignment, and organizational mortality in the U.S. trucking industry. *Strategic Management Journal*, 18(Special Issue), 31–52.
- 39 Sørensen, J. B. (1999). Executive migration and interorganizational competition. *Social Science Research*, 28, 289–315.
- Sørensen, J. B. (2004). Recruitment-based competition between industries: A community ecology. *Industrial and Corporate Change*, 13, 149–170.
- Sorenson, O. (1997). *The complexity catastrophe in the computer industry: Interdependence and adaptability in organizational evolution*. Unpublished Ph.D. dissertation, Stanford University.

1 Sorenson, O. (2000). The effect of population-level learning on market entry: The American  
automobile industry. *Social Science Research*, 29, 307–326.

3 Sorenson, O. (2003). Interdependence and adaptability: Organizational learning and the long-  
term effect of integration. *Management Science*, 49, 446–463.

5 Sorenson, O., & Audia, P. G. (2000). The social structure of entrepreneurial activity: Geo-  
graphic concentration of footwear production in the U.S., 1940–1989. *American Journal  
of Sociology*, 106, 424–462.

7 Sorenson, O., McEvily, S., Roy, R., & Ren, C. (2005). ~~Niche width revisited: Organizational  
scope, behavior and performance.~~ Working paper. UCLA Anderson Graduate School of  
Management.

9 Sorenson, O., & Waguespack, D. (2004). *Social networks and exchange: Self-confirming dy-  
namics in Hollywood.* Working paper. UCLA Anderson Graduate School of Manage-  
ment.

11 Squire, J. E. (1992). *The Movie Business Book.* New York: Fireside.

13 Stuart, T. E., & Sorenson, O. (2003). The geography of opportunity: Spatial heterogeneity in  
founding rates and the performance of biotechnology firms. *Research Policy*, 32, 229–  
252.

15 Thompson, J. D. (1967). *Organizations in action. Social science bases of administrative theory.*  
New York: McGraw-Hill.

17 Williamson, O. E. (1971). The vertical integration of production: Market failure considerations.  
*American Economic Review*, 61, 112–123.

19 Williamson, O. E. (1975). *Markets and hierarchies: Analysis and antitrust implications. A study in  
the economics of internal organization.* New York: Free Press.

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