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Author: Sharon Oster, William N. Goetzmann

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Does Governance Matter?
The Case of Art Museums

Sharon Oster and William N. Goetzmann

2.1 Introduction

Art museums provide a classic example of organizations operating with multiple objectives. On the one hand, many American museums take as their central function the education of the populace. At the same time, there is a long tradition in museum management of conservation and appeal to the narrower elite. In the past decade, the balance between these objectives seems to have tilted in favor of the broader populace. In writing of this change, one museum activist, Kenneth Hudson, has argued: "The most fundamental change that has affected museums is the now almost universal conviction that they exist in order to serve the public" (Kotler and Kotler 2001, 171). Sociologists have explored this tension at some length. D'Harnoncourt et al. (1991), for example, describe the movement of art museums from secluded temples of culture to the present-day more public institutions. Grana (1971) similarly contrasts patron-oriented museums, focused on "men of leisure from the upper classes," with public-oriented ones.

This paper uses cross-sectional and time-series data on U.S. museum finances and operating characteristics to explore the effect of governance structure on performance. We are particularly interested in whether the ownership structure of a museum influences the balance it strikes among competing constituents. Increasingly, economists have come to appreciate

Sharon Oster is the Frederic D. Wolfe Professor of Management and Entrepreneurship and faculty director of the Partnership on Nonprofit Ventures at the Yale School of Management. William N. Goetzmann is the Edwin J. Beinecke Professor of Finance and Management Studies and director of the International Center for Finance at the Yale School of Management.

We thank Cathy Shu for collecting the data. We thank the numerous museums who shared their data with us. We thank workshop participants for their suggestions.

the role played by governance structures on decision making in organizations, and the differentiated structure of the industry makes museums an excellent case study.

2.2 The Role of Museums

We begin our discussion by considering the objective function of the typical museum. In the literature, there are three oft-cited museum goals: art preservation, education of the populace, and the providing of a social signal for the elite of a community. The first two of these goals appear frequently in the mission statements of museums. The mission statement of the Portland Art Museum in Oregon is typical: "The mission of the Portland Art Museum is to serve the public by providing access to art of enduring quality, by educating a diverse audience about art and by collecting and presenting a wide range of art for the enrichment of present and future generations." The opening lines of the mission statement of the Boston Museum of Fine Arts strike a similar theme: "The Museum of Fine Arts houses and preserves preeminent collections and aspires to serve a wide variety of people through direct encounters with works of art."[1] The interest in both art preservation and education for the public are clear.

The role of museums in reinforcing a social elite within a city is less often articulated in mission statements. Yet, until well into the twentieth century, most American museums depended on private philanthropic dollars for their support (Anheier and Toepler 1998, 235). Indeed, wealthy industrialists, to whom Dimaggio refers as "cultural capitalists," founded many of our most well-known museums (1986). Dimaggio describes in some detail the way that these industrialists, in cities like Boston, used art institutions to build cultural boundaries separating themselves from the rest of society. As Temin suggests, displaying one's art validates both a patron's possessions and his or her position in society (1991). Consequently, one might expect that the more affluent the society, the greater the need to signal taste through support and display of the arts.

The growth of art museums was thus based not only on an aesthetic tradition in American society, but upon a philanthropic one. John Ingham (1997) and Ruth Krueger Meyer and Madeleine Fidell Beaufort (1997), in an exhibition catalogue to a major exhibition, *Collection in the Gilded Age: Art and Patronage in Pittsburgh: 1890–1910,* describe the art-collecting and philanthropic activities of Gilded-Age Pittsburgh through the lenses of class and society. Wealthy Pittsburgh families vied with each other to create spectacular collections of European art and also, in many cases, made gifts of these collections to the public. Andrew Carnegie, the city's (and perhaps the nation's) wealthiest citizen at the time, led by example in do-

1. See the Web mission statement at http://207.127.106.123/mission.

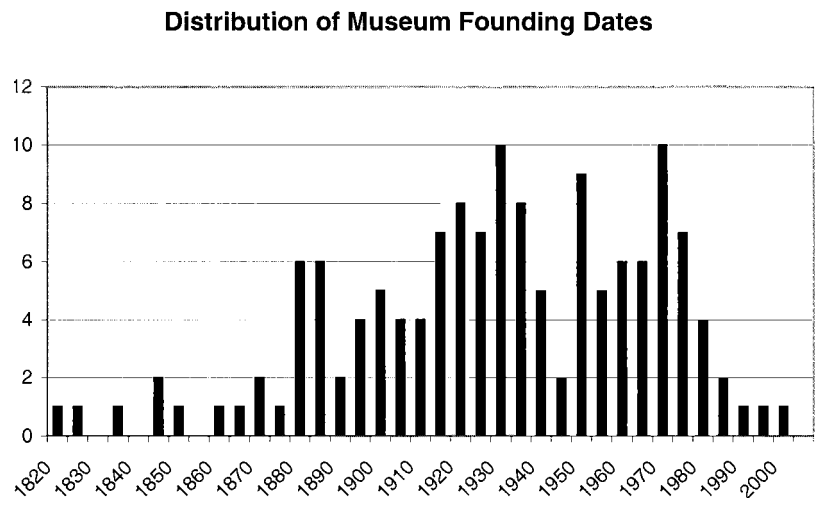

Fig. 2.1 The distribution of founding dates for museums in the 1989 and 1999 AAMD sample

Sample: 1989 and 1999 AAMD with reported founding information

Note: Founding dates were collected from annual AAMD directories, as available.

nating much of his wealth in order to improve the access of Pittsburgh's citizens to higher arts and education (Ingham; Meyer and Beaufort). Subsequent gifts by leading Pittsburgh citizens enriched the artistic horizon of the nation as a whole. For example, Andrew Mellon's collection became the core of the National Gallery of Art, and Henry Clay Frick founded the Frick Collection of New York.

While the Gilded Age was an important period for museum founding and support, patronage of the arts through museum foundation has continued vigorously since. Figure 2.1 is a chart of museum-founding dates from the sample we study in this paper. It suggests that the most active periods for museum founding appear to have been the two decades preceding and the two decades following the Second World War. In fact, this probably understates the contributions of the most recent era. The figure shows a tailing-off at the end of the sample period that is most likely due to younger museums' not reporting statistical information to the Association of Art Museum Directors (AAMD) as commonly as more established institutions. Not only was the "birth process" of museums sustained through the last century, but the social context of arts patronage has also continued to be an important factor in museum management. Museums today, as in the past, rely upon gifts for collection development and operations support, and wealthy donors and founders remain key constituents of American art museums. The continuation of the philanthropic tradition—founded on the Gilded-Age sense of civic duty and, to some extent, main-

tenance of social position through public giving—is an important economic foundation for art museums. Indeed, in this paper, we test the extent to which urban concentrations of wealth are related to institutional reliance upon gifts and donations.

Consider now the role of governance structure in determining how museums pursue their varied objectives and balance the interests of their constituents. Approximately one-third of the art museums in the United States are public institutions. These public museums were most typically founded with service to the public in mind and are likely to emphasize public attendance as an objective. The remaining two-thirds of American museums are overwhelmingly nonprofit, but within this pool there are institutional differences, such as between university-based museums and free-standing nonprofits. University art museums, which emerged largely in the nineteenth century, were principally intended to serve the students and academic staffs of their own institutions (Boylan 1999). While many university museums have clearly broadened their reach to serve the general public, one might well expect some residual focus on the less popular end of the art spectrum and on curatorial and educational functions as opposed to mass appeal. Thus, we hypothesize that public museums will service the general public the most and university museums the least as they go about their respective businesses.

In pursuing these three objectives, museums have a number of instruments available. To the extent that public museums emphasize public access, one would expect them to maintain low prices, focus collection efforts on broadly accessible art and programs, and emphasize more popular exhibitions. University-based museums would be expected to focus on more sophisticated art and programs and be less concerned with keeping admission prices low for the general public, although free student access might well be important. Free-standing nonprofits, operating without other support, might be expected to charge higher prices and pay more attention to the interests of elite donors.

Unfortunately, it is difficult to gather data directly on many of these strategic variables. Locating pricing data is, for example, quite problematic. Many museums characterize admissions fees as "suggestions," where the suggestion carries varying levels of force at different museums. Hence, while the broad-brush data do support our hypotheses in that low or zero price levels are correlated with public ownership, it is hard to go much further simply looking at this variable. Assessing the collection efforts of museums on the spectrum of popular versus more esoteric is also difficult, although we have some relevant evidence in section 2.2.3, where we examine the special exhibits of the various museums.

Two elements of museums operations, space utilization and financing, afford some perspective on the objective functions of museums. Some measure of the emphasis that a museum places on the various elements of its

mission may be revealed by the proportion of space it gives to education versus exhibitions, for example. The structure of a museum's financing may also affect the way it pursues various objectives. Finally, we use the attendance levels at museums with different ownership structures as an index of how vigorously these museums are pursuing public education and entertainment over their alternative goals.

2.2.1 Space and Money

The empirical work described in this section of the paper is based on 1999 data collected by the AAMD, the principal art museum membership organization, consisting of just over 200 museums located in the United States and Canada. The AAMD conducts annual surveys of its members, covering a wide range of information about finances, operations, and museum collections. While the survey data generally are not publicly available, we were given access to the data for 1989 and 1999. For the analysis of space utilization and financing in this section of the paper we have used the 1999 data. In a later analysis of attendance, we use both survey years.

In the full sample, there are 148 U.S. museums in 1989 and 140 in 1999 with substantial institutional overlap between the two years, although many of the museums have at least some missing data. The museums surveyed are quite diverse, ranging in size, for example, from the Metropolitan Museum of Art in New York, with 1,835 full-time employees in 1999, to the California State University Art Museum, with only 4 full-time employees. There is a similarly large range in the attendance figures. The National Gallery of Art in Washington, D.C. and the Metropolitan Museum of Art in New York both attract more than 5 million annual visitors, while the Yale University Art Gallery has a more modest 50,000. The summary statistics on the sample used in this paper are given in table 2.1.

Table 2.1 **Summary of Variables**

	Full Sample		Endowment Sample	
	Mean	Range	Mean	Range
Collection expenditures	$1,487,422	$2,055–30,800,000	$1,681,048	$2,055–30,800,000
Attendance	379,003	25,000–6,500,000	507,7228	25,000–6,500,000
Type of collection				
Survey	72%		76%	
Modern	8%		6%	
American	10%		8%	
Governance				
College	19%		16%	
Public	26%		24%	
Other nonprofit	55%		60%	
Endowment			$46,400,000	$114,885–1,020,000,000
Observations	190		166	

Table 2.2 **Museum Space Utilization, 1999 Association of Art Museum Directors Survey**

		Statistically Different?			
	Mean	From Combined	From Public	From Nonprofit Not University	From University Nonprofit
Exhibition space/all space					
Public museums	.331	No		No	No
Nonprofits, not university	.342	No	No		No
University nonprofit	.345	No	No	No	
Educational space/all space					
Public museums	.043	Yes		Yes	No
Nonprofit, not university	.074	No	Yes		No
University nonprofit	.065	No	No	No	
Museum store space/all space					
Public	.018	No		No	No
Nonprofit/not university	.020	No	No		No
University/nonprofit	.016	No	No	No	

The first question we explore using the AAMD data is the way in which different museums use their space. The survey itself distinguishes a number of space categories. For this analysis, we have focused on three: space for exhibitions, space designated for educational use, and museum storage space. Our particular question is whether university-based museums have more educational space and less storage space than their public or general nonprofit peers.

As we see from table 2.2, just over one-third of the space for the museums in our sample is used in permanent exhibition space, while a more modest area is used for either education or the museum store. There is no difference by governance type either in exhibition space or in storage space. Simple regressions holding overall museum size and age constant confirm the results of table 2.2, revealing no influence from governance. The data do suggest that nonprofit museums are devoting significantly more space to educational uses than are the public museums.

In table 2.3 we compare revenue sources for the three museum types. The four major revenue streams of museums are considered: gross earned revenues, which include admission fees (suggested and otherwise), exhibition fees, museum store sales, and rentals; private philanthropic support, including corporate, individual, and foundation; government support; and finally, endowment support.

Considerable differences in the funding patterns of museums by governance types are clearly revealed in table 2.3. Nonprofit, nonuniversity museums are most dependent on earned income and private support. Public museums, not surprisingly, depend principally on public support. University museums, with access to university support, are less dependent on any

Table 2.3 **Revenue Shares by Governance Structure, 1999 Association of Art Museum Directors Survey**

		Statistically Different?			
	Mean	From Both Combined	From Public	From Nonprofit Not University	From University Nonprofit
Gross earned revenues/all revenues					
Public	.20	No		Yes	Yes
Nonprofit, not university	.25	Yes	Yes		Yes
University	.11	Yes	Yes	Yes	
Private support/all revenues					
Public	.21	Yes		Yes	No
Nonprofit, not university	.33	Yes	Yes		Yes
University	.21	Yes	No	Yes	
Government support/all revenues					
Public	.41	Yes		Yes	Yes
Nonprofit, not university	.12	Yes	Yes		No
University	.08	Yes	Yes	No	
Endowment support/all revenues					
Public	.08	Yes		Yes	No
Nonprofit, not university	.19	Yes	Yes		Yes
University	.12	No	No	Yes	

of the three constituent-based revenue sources than are public or general nonprofit museums.

We explore some of the consequences of these different financing patterns in the next two sections of the paper as we look at museum attendance and special exhibitions.

2.2.2 Attendance

Attendance levels are one of the traditional output measures used by many museums. We now consider how attendance may be influenced by governance. While governance is expected to influence the aggressiveness with which museums pursue audiences, characteristics of the collection itself likely affect its inherent attractiveness to the public. Finally, since museums deliver their output on site, we expect the city characteristics to help determine demand. Here we ask: Are museums like Wal-Mart, where all that really matters for attracting customers is the organization's location? Or will a museum attract its own audience despite location-specific features?

Before we turn to the econometrics, the raw data suggest something of the governance-attendance relationship. Consider the ratio of attendance to museum exhibition space as one (admittedly crude) measure of the "productivity" of a museum. By this measure, university-based museums are heavily overrepresented in the list of the twenty least productive museums.

Thirty-five percent of the museums on this list are university affiliates, as compared to a population of 23 percent. Among the twenty most space-productive museums, there is only one university affiliate. Similarly, public museums are overrepresented in the productive class and underrepresented in the underperformers.

In order to explore these differences across museums more thoroughly, we estimate a simple model of museum attendance. The attendance levels at museums are modeled as a production function, where the inputs include museum and city characteristics. In particular, we estimate a production function for museum attendance as follows:

$$A_{it} = \alpha + \beta \boldsymbol{X}_{it} + \delta \boldsymbol{Z}_{it} + \phi G \tag{1}$$

where A_{it} is the attendance at museum i at time t, $\boldsymbol{X}_{it}$ is a vector of characteristics associated with the collection of museum i at time t, $\boldsymbol{Z}_{it}$ is a vector of characteristics at time t of the city in which museum i is located, and G is an indicator for governance structure.

Data on attendance levels and collection characteristics come from the 1989 and 1999 AAMD surveys. The survey data are not without problems, some of which are described by Rosett (1991) for the earlier 1989 data. From our point of view, the collection data are most problematic. Ideally, we would like a measure of the value of the museum collection to use as one element of the $\boldsymbol{X}$ vector. In the more usual industrial-production-function context, this would be equivalent to a capital stock figure. As is well known, however, museum collections are not valued in the financial statements of museums; indeed, the standard procedure is to list the value of art assets at $1. In the AAMD survey, there are some data provided on the total value of a museum's collection based on insurance coverage.[2] These data are problematic both because insurance readjustments are likely to be sticky and because many of the museums self-insure and thus drop out of the sample when we measure collection value this way. Moreover, the censored museums are not representative since it is many of the large public museums that self-insure.

An alternative measure of collection value is the current expenditures on the collection. While we may presume that acquisitions are a major component of this category, expenditures on the collection may also include restoration, framing, and other expenses. Nevertheless, this measure has the advantage of being "real" data, and is also available for a broader set of museums. Clearly what we are measuring here is a flow (analogous to investment) rather than the preferable asset value, although the flow and stock values do appear to be highly correlated. Using current expenditures

2. Museum directors were asked to provide information on both the payoff of the insurance and the fraction of the collection covered. These two figures were then used to generate a total value figure.

on the collection may also create an endogeneity problem. Increased attendance at a museum typically contributes to the earned income of a museum, through either admissions fees or concession revenue, and thus may increase funds available for collections. To deal with this issue, we provide an alternative estimate of the attendance regression, instrumenting for collection expenditures using the market value of the endowment at the end of the prior period. Endowment value should be both independent of attendance and correlated with collection expenditures. Since a number of the museums in the sample do not report endowment values, instrumenting in this way reduces the sample size somewhat.

In addition to the variable measuring collection value, we also identify each collection by type. Narrative summaries of each museum provided by the AAMD were used to categorize each museum as either survey, modern, American, or other. We are interested here in whether there is any evidence of a type bias in American museum goers.

The $\boldsymbol{Z}$ vector contains a set of variables describing the characteristics of the site of the museum. The typical museum attracts both residents and tourists. To capture local demand, we used the size of the local population and the percentage of the population with a college degree. Prior work (Dimaggio 1987) suggests that educational level is a better predictor of local demand than income. We used two measures of tourist demand: hotel expenditures per capita and mean January temperature. High January temperatures are intended to capture substitution possibilities for tourists and local residents alike. We expect that, holding tourism levels constant, museums do better in climates with cold winters.

Finally, we use dummies to capture governance type, distinguishing public, university-based, and other nonprofit museums. The public museums include those run by city, state, and federal governments. The set of independent variables used and the means of the data are given in table 2.1. We note that the problem of missing observations reduces the overall sample considerably, essentially halving the population of 300 museums we started with.

Table 2.4 reports the results of the estimation. In the estimation, all variables were transformed to logs, given the expected nonlinear relationship between attendance and museum and city characteristics. Thus, in this specification, we can think of the coefficient estimates as elasticities. The results in table 2.4 suggest that both museum and city characteristics matter for a museum's ability to draw an audience. Collection expenditures exert a large, positive, and highly significant effect on attendance. A 10 percent increase in the expenditures on collections increases current attendance by 2.5 percent to 4.0 percent, which seems to be a relatively large effect given the durable nature of collection expenditures. There is some evidence that survey collections have more drawing power than other collection types.

In fundamental terms, these results suggest that art matters. Our results

Table 2.4 Attendance Regressions

Independent Variable	OLS	IV
Log collection expenditures	.258	.414
	(8.92)**	(6.68)**
Type		
Survey	.501	.454
	(2.78)**	(2.00)*
American	.145	.080
	(.226)	(.27)
Modern	.296	.408
	(1.4)	(1.65)
MSA population (log)	.205	.124
	(4.53)**	(2.00)*
Percent of population with bachelor's degree (log)	.183	.179
	(1.22)	(1.04)
Hotel expenditures per capita (log)	.240	.156
	(3.46)**	(1.88)
January mean temperature (log)	–.442	–.32
	(–2.47)**	(1.53)
Governance		
College	Omitted	Omitted
Public	.804	.863
	(4.61)**	(4.05)**
Other nonprofit	.539	.552
	(5.52)*	(3.03)**
Constant	6.34	4.98
	(5.56)**	(3.59)**
Observations	190	166
R^2	.60	.56

Note: MSA = metropolitan statistical area. OLS = ordinary least squares. IV = instrumental variables.

**Significant at the .01 level.

*Significant at the .05 level.

are consistent with the hypothesis that collections function as economic assets, with larger collections drawing more customers. In fact, we can go further and use the coefficient estimates to answer the question of what the economic impact of an increase in collection expenditures would have on the museum. The data in table 2.1 suggest that in our sample the mean annual collection expenditure is about $1.5 million, while average attendance in the sample is about 379,000. If we apply the lower elasticity figure of 0.25 generated in table 2.4, we see that an increased expenditure on the collection of $150,000 (10 percent) would yield approximately 9,500 more museum attendees each year. For this to pay off in strictly a one-year economic impact, each new attendee would have to spend $16 in a visit, which is likely high. Of course, one would not expect art investment to pay off this quickly for a museum or else they would be doing more of it!

In terms of location, all of the variables are of the right signs in both regressions, although only the population variable passes the usual significance tests in both specifications. We note again the truncated sample in the instrumental variable (IV) regressions. The tourist-related variables suggest that the ideal museum location from an attendance perspective is a tourist location in a cold area. For Tom Krens' new Guggenheim museum branch in Las Vegas, the regression gives a mixed prediction: Based on tourist beds, Las Vegas looks like a good site; based on January temperature, Krens may have a failure on his hands.

The results further suggest that governance type matters a good deal in terms of audience attraction. Public museums strongly outdraw nonprofit museums of either type, and university-based museums clearly deliver the smallest audiences. These results are consistent with the view that public museums stress public education, while college museums in particular may focus more on higher education, connoisseurship, and other aspects of the museum mission. These results further support Hansmann's (1981) observations on the differences in the focus on attendance by performance arts organizations. We turn now to look directly at the role of special exhibits in museums of varying ownership types.

2.2.3 The Role of Traveling Exhibitions

Special exhibitions play two important roles for museums. In some cases, these exhibitions are mounted by a museum's own curators and represent the historical vision of that curator, expressing a particular point of view about a body of work. Thus, at one level, special exhibitions represent a curatorial research product. On the other hand, some special exhibitions—the blockbusters—serve in large measure as a way to attract large, new audiences to a museum. Attracting large audiences has financial benefits as well. Even those museums that charge no admission fees benefit through their concession and museum shops from increases in visitorship. Indeed, for the average museum, revenues from audience-related concessions exceed admissions fees (AAMD Survey 1999).

The traveling special exhibition is particularly interesting in terms of function. In many cases, exhibitions travel from one museum to another and provide a way to expose a local audience to new work. For moderate-sized art museums, some reliance on traveling exhibitions is common. The St. Louis Art Museum, for example, had thirty-five special exhibits in the 1990s, 35 percent of which were organized outside of the museum itself, including most of the very high-attendance shows. As such, traveling exhibitions are a way of temporarily augmenting a museum collection through, in effect, leasing more-valuable works from major museums. Much of the discussion by critics on the changed role of the museum has focused particularly on the use of the special exhibition as a crowd pleaser. By mounting a recent exhibit of guitars, the Museum of Fine Arts in Boston was described

as "turning itself into a gigantic Hard Rock Café" (Leo 2001). Of New York's Guggenheim, which is well known for its unusual exhibits, Heather Macdonald opined that "the Giorgio Armani show at the Guggenheim reminds us that 'art' in an art museum these days is optional" (Leo).

There is a tension, then, between the smaller-scale special exhibit, which principally serves a research or educational function, and the audience-generating, revenue-producing blockbuster. In line with our earlier discussion, we expect to see different museum types specializing in each of these forms. In particular, university-based museums are likely to be overrepresented among museums mounting specialized exhibits, while public and nonprofit museums, lured by both revenues and audience, will focus on the blockbuster segment.

Before we can consider the different production of special exhibits by different museums, it is useful to touch briefly on the economics of exhibition production more generally. From the point of view of an industrial-organization economist and a finance professor, it is a curious process indeed.

Producing special exhibits requires essentially two inputs: curatorial time and art objects. While museums can and do use visiting curators, the ability to regularly mount a diverse group of special exhibits requires a substantial curatorial staff. In the modern blockbuster age, a staff of exhibit designers has become increasingly important (Silver 1982), further increasing the fixed costs burden for the smaller museum.

A more important barrier to mounting major exhibits by the small museums is created by the economics of art-object lending. The typical special exhibit relies on both a museum's own objects and borrowed objects. It is the custom in the museum business that these loans are made without a fee, although it is usual for the borrowing museum to pay for travel and insurance costs. Even objects from private collections are borrowed rather than rented, although there is, at times, some restoration work serving as a quid pro quo. Initially, one might think that the borrowing tradition would make it easier for smaller museums to mount exhibits, by lowering costs. We would argue, however, that this system may discriminate against the smaller museums. In the barter system used, the smaller museum may find itself with few objects of any appreciable "trade" value and thus more often find its requests for loans refused. Similarly, private exhibitors likely prefer lending to big-name museums. As with many barter systems, this one may create an inefficiency by reducing the ability of the creative curator in the smaller museum to exploit his or her skill. As we will shortly argue, however, the university museum—even the relatively small one—is in a somewhat advantaged position in the borrowing business.

The evidence suggests that production of traveling exhibitions among art museums is indeed a highly concentrated business. One way to measure concentration is to look at participation fees earned by museums. In 1999,

Table 2.5 Exhibit Census

Exhibit	Originating Museum
Blockbusters in 1998, 1999 (attendance >400,000 at one museum)	
Monet in the Twentieth Century	Boston MFA
The Private Collection of Degas	Metropolitan Museum
Van Gogh's Van Gogh	National Gallery
Mary Cassatt: Modern Woman	Art Institute, Chicago
Pierre Bonnard	MOMA
Cézanne to Van Gogh: Dr. Gachet	Metropolitan Museum
John Singer Sargent	National Gallery
Renoir's Portraits	Art Institute, Chicago
Mini-blockbuster (attendance >200,000 and <400,000)	
Monet: Portrait of Giverny	Walters Art Gallery
Alexander Calder	National Gallery
A Collector's Cabinet	National Gallery
Manet, Monet, and Gare St. Lazere	National Gallery
Degas at the Races	National Gallery
Collecting Impressionism	High and Seattle
Picasso and the War Years	Guggenheim
From Van Eyck to Brueghel	Metropolitan Museum
Picasso: Painter and Sculptor in Clay	Metropolitan Museum
Hans Hoffman in the Metropolitan	Metropolitan Museum
Jackson Pollock	MOMA
Delacroix: The Late Work	Philadelphia Museum
Portraits by Ingres	National Gallery

Notes: MFA = Museum of Fine Arts. MOMA = Museum of Modern Art.

for example, the AAMD data indicate that the top four museums providing data on participation fees earned 55 percent of the total fees earned.[3] A decade earlier, in 1989, this figure was slightly lower. There are no university museums among this top list.

Another way to estimate concentration is to look at the originating museum for recent large exhibits. This allows us to look at some museums that do not provide AAMD survey data. This information is provided in table 2.5. Of the twenty-one exhibits we identified in the 1998–99 period with attendance levels over 200,000 in a single museum, the National Gallery had one-third and the Metropolitan one-fourth of the exhibits. Again, high concentration is clearly in evidence, public and nonprofit museums are represented in proportion to their place in the pool, and no university museums are present. One might also notice that almost all of the blockbuster shows are of Impressionist painters.

The 1999 AAMD list of museums with the highest earned income from

3. This figure is based on the approximately two-thirds of the museums responding to this question.

participation fees is principally dominated by the very largest museums. Interestingly, the smaller museums earning participation fees are disproportionately university-based museums. Here we see the importance of the more specialized traveling exhibition to the research life of the university museum. In 1999, the Harvard University Art Museums were among the top ten in participation fees among reporting institutions. These fees appear to be the result of a show mounted in 1998, *Inside Out: the New Chinese Art,* which traveled throughout the country in 1999 and 2000 and was mounted in cooperation with the San Francisco Museum of Modern Art. Williams College, Smith College, and Yale University all earn more from participation fees than you might expect from their operating budgets. The Harvard and Yale art galleries routinely mount special exhibitions that travel to other museums. The university museum may well have cost advantages in mounting these exhibits, as well as enhanced mission-driven reasons to support such activity. Here we see some of the advantages of the university museum in terms of ability to use curatorial talents outside the museum budget, in the quality of their history of art departments, and in terms of their ability to borrow, particularly from affiliated collectors. Colleges with well-endowed alumni may be able to call on these alumni to lend art to their museum exhibitions and in this way are less hampered by the borrowing culture of the art world than their similarly sized cohorts.

2.3 Museums as Social Institutions

We have thus far explored the way in which museum ownership and governance structure may influence the emphasis it places on audience attraction. We turn now to look more directly at the role of a museum vis-à-vis the social elite in a city.

Founding a museum, sitting on the board of a local arts institution, and contributing conspicuously to a public museum have long been an avenue into society. The role of the single philanthropist in founding museums like the Guggenheim and the Whitney in New York is well known, but the pattern is common in the rest of the country as well. In Minneapolis, T. B. Walker, who made his fortune in lumber, started the Walker Art Center in the mid-nineteenth century. The Center for British Art at Yale University is the gift of philanthropist and collector Paul Mellon. In Chicago, the Terra Museum of American Art was founded, funded, and named by its principal donor, Daniel Terra.

What has happened to the museum's role as a validator of social position? As we suggested earlier, the typical museum in the last several decades has attempted to broaden its public appeal in part to attract new audiences for revenue reasons. As museums have become democratized in their exhibitions, there is some question about whether they have lost their role as promoters of the social elite.

As part of their required Form 990 filings with the Internal Revenue Service, museums are asked a series of questions pertaining to their "public support" basis for tax exemption. As part of this set of questions, museums are required to indicate funds raised from individuals who have contributed over the past four years an amount in excess of 2 percent of the museum's total funds. We use this information as one measure of the "elite focus" of the museum's funds.

As table 2.6 suggests, there is considerable variation in the reliance of museums on very large contributions. Some museums report having no patron who, in the period 1994–97, contributed more than 2 percent of museum support, while several museums receive almost half of their private support from this source. Among the museums with substantial reliance on the large gift are included several very large, high-profile museums (e.g., the Whitney Museum and the San Francisco Museum of Modern Art [MOMA]), as well as a number of smaller, less well-known museums, including the Arkansas Art Center and the Akron Art Museum.

In table 2.7, we report the results of a simple regression intended to tease out some of the determinants of museum dependence on concentrated donors. The dependent variable is the ratio of donations raised from donors contributing each in excess of 2 percent of the pool to the total support pool. As independent variables, we consider two city characteristics: percentage of the city population in the top income group (>$150,000 in 1990), and population stability (percentage of the population living in the same county between 1985 and 1990). Our expectation is that a museum's reliance on high-end donors will be positively related to both measures, the intuition being that the social elites supporting museums have historically been high-income and stable in residence. In addition, we look at the museum's age, recognizing that in early stages museums are often the product of a few wealthy benefactors, and that through a museum's life cycle, the donor pool will tend to spread. While all variables are of the expected sign, only the income variable is statistically significant. The significance of the high-income variable is consistent with the conspicuous consumption function of museums. The greater the density of affluent citizens, the greater the need to signal social status through support of the arts.

It is also interesting to consider the way in which the importance of the big donor to museums may have changed over time. In panels A and B of table 2.8, we have briefly summarized the history of the museums listed in the AAMD survey founded in two historical periods: before 1920, a period in which many of the premier U.S. museums were founded, and since 1960. We note first that the ownership structure in these newer museums parallels those of the earlier museums: Two-thirds of the new museums are nonprofits, and one-third, public. There is no indication of an evolutionary trend toward one "ideal" museum form, the way we have seen in other areas of nonprofit management. A somewhat higher than expected fraction

Table 2.6 Museum Reliance on Large Donors

Museum	Proportion of Funds from Large Donors
1. Akron Art Museum	.1899962
2. Albright-Knox Art Gallery	0
3. Allentown Art Museum	.0012145
4. Arkansas Arts Center	.4329223
5. Asia Society and Museum	.1664267
6. Butler Institute of American Art	.056930
7. Boston Museum of Fine Art	0
8. Chrysler Museum	0
9. Columbus Museum of Art	.0743780
10. Columbus Museum	.1177242
11. Contemporary Arts Center	0
12. Cummer Museum of Art	.0296322
13. Currier Gallery of Art	.0756367
14. Dallas Museum of Art	.0680886
15. Dayton Art Institute	.0931211
16. Detroit Institute of Arts	.0431507
17. Dia Center for the Arts	.3419761
18. Flint Institute of Arts	.0997698
19. Honolulu Academy of Arts	.1077176
20. Huntington Library and Art Gallery	.1057051
21. Huntington Museum of Art	.0330222
22. Huntsville Museum of Art	0
23. Indianapolis Museum of Art	.1308966
24. International Center of Photography	.0312683
25. Isabella Stewart Gardner Museum	.0789347
26. JB Speed Art Museum	0
27. Jewish Museum	.0891177
28. Joslyn Art Museum	0
29. Long Beach Museum of Art	.0056818
30. Marion Koogler McNay Art Museum	.1067609
31. Metropolitan Museum of Art	.0564407
32. Milwaukee Art Museum	.0731025
33. Mint Museum of Art	.0057806
34. Museum of Contemporary Art	0
35. Neuberger Museum of Art	.2936345
36. New Museum of Contemporary Art	0
37. New Orleans Museum of Art	.0376919
38. Newark Museum	.0036008
39. North Carolina Museum of Art	.1515550
40. Palm Springs Desert Museum	.1635293
41. Parrish Art Museum	.0595174
42. Philadelphia Museum of Art	.0298572
43. Philbrook Museum of Art	.1342124
44. Phoenix Art Museum	.2005516
45. Pierpont Morgan Library	.2166278
46. Portland Art Museum	.1950636
47. San Antonio Museum of Art	.0700298
48. San Diego Museum of Art	.0187342

Table 2.6 (continued)

Museum	Proportion of Funds from Large Donors
49. San Francisco Museum of Modern Art	.3304738
50. San Jose Museum of Art	.0114623
51. Santa Barbara Museum of Art	.1068513
52. Seattle Art Museum	.0058311
53. Southeastern Center	.3356010
54. Studio Museum in Harlem	0
55. Tampa Museum of Art	0
56. Telfair Museum of Art	0
57. Textile Museum	.1806287
58. Toledo Museum of Art	.3462301
59. Wadsworth Atheneum	.0241641
60. Walker Art Center	.0260312
61. Whitney Museum of American Art	.2245290
62. Winterthur Museum	.0056559
63. Worchester Art Museum	.0281015

Table 2.7 **Determinants of High Donor Funding**

Independent Variable	Coefficient	*T*-statistic
Constant	–.045	(–.30)
High-income	.961	(2.31)*
Population stability	.002	(.82)
Museum age	–.0002	(–.41)
R^2	.11	
N	63	

*Significant at the .05 level.

of the new museums do, however, appear to be university based. Most significantly, nearly every one of the new museums—including those associated with universities—was founded by a large gift of money or a gift of art by a major donor. Indeed, the role of the single major donor appears, if anything, to have increased over time. Interestingly, many of the new donors come from the same industry bases as those in the earlier period—manufacturing, oil, and transportation. Our evidence suggests remarkable stability in the prevalence of founding donors and the profile of those donors in the museum world.

2.4 Museums as Aesthetic Institutions

In the analyses thus far, we have emphasized the ways in which serving popular audiences and serving a narrower elite group compete for museum attention. While recent scholarship has underscored the contrasts in these

Table 2.8 U.S. Museum, by Year Founded and Donor

Museum	Year	Donor (industry)
	A. Founded Since 1960	
Amon Carter Museum	1961	Amon Carter (publishing)
Asian Art Museum of San Francisco	1966	Avery Brundage (construction)
Brandywine River Museum	1971	DuPont (chemicals)
Contemporary Arts Center	1976	State
David and Alfred Smart Museum of Art (University of Chicago)	1974	Smarts (publishing)
Dia Center for the Arts	1974	DeMenil (oil and banking)
Elvehjem Museum of Art (University of Wisconsin)	1962	Faculty idea: no money
Georgia O'Keefe Museum	1997	Anne and John Marion (former Sotheby's head)
Hirshhorn Museum and Sculpture Garden	1966	Hirshhorn (finance, mining)
Huntsville Museum of Art	1970	City
Herbert F. Johnson Museum of Art (Cornell University)	1973	Johnson (manufacturing)
Jack S. Blanton Museum of Art (University of Texas)	1963	Blanton (oil)
Jane Voorhees Zimmerli Art Museum (Rutgers)	1966	Voorhees-Zimmerli (finance)
Krannert Art Museum (University of Illinois)	1961	Herman Krannert (box manufacturing)
Museum of Contemporary Art	1967	Daniel Brenner
National Museum of African Art	1964	Government
National Portrait Gallery	1962	Government
Neuberger Museum of Art (SUNY Purchase)	1974	Roy Neuberger (finance)
New Museum of Contemporary Art	1977	City
Salvador Dali Museum	1971	A. R. Morse (industry)
Samuel Harn Museum	1981	Samuel Harn (manufacturing)
San Antonio Museum of Art	1981	City
San Jose Museum of Art	1969	City
St. Petersburg Museum of Fine Arts	1961	M. Acheson Stuart (publishing)
Studio Museum in Harlem	1967	Volunteer founders
Tampa Museum of Art	1967	DeMenils (oil and banking)
UCLA Hammer Museum	1994	Hammer (chemicals)
University of California, Berkeley, Art Museum	1970	Hans Hoffmann (artist)
University of Iowa Museum of Art	1967	Owen and Leone Elliot
Wexner Center for the Arts	1989	Wexner (retail)
Yale Center for British Art	1977	Andrew Mellon (transport and aluminum)
	B. Founded before 1920	
Albright-Knox Art Gallery	1826	John Albright (steel)
Art Institute of Chicago	1879	Group of businessmen
Baltimore Museum of Art	1914	M. Carey Thomas (president of Bryn Mawr; railroad money inherited)
Brooklyn Museum of Art	1823	Community group
Butler Institute of American Art	1919	Joseph Butler (manufacturing)
Carnegie Museum of Art	1896	Andrew Carnegie (steel)
Cincinnati Art Museum	1896	Citizen group

Table 2.8 (continued)

Museum	Year	Donor (industry)
Cleveland Museum of Art	1913	Huntington (oil); Kelley (development); Hurlburt (banks)
Cooper-Hewitt National Design Museum	1887	Cooper grandchildren (railroads)
Corcoran Gallery of Art	1869	William Corcoran (banking)
Crocker Art Museum	1885	Edwin Crocker (railroads)
Currier Gallery of Art	1919	Moody Currier (banking)
Dallas Museum of Art	1903	Citizen group
Davis Museum	1889	Wellesley College
Dayton Art Institute	1919	Julia Paterson Carnell (National Cash Register)
Delaware Art Museum	1912	Citizen group
Denver Art Museum	1883	Municipal
Detroit Institute of Arts	1885	Brearly (journalism)
Fine Arts Museums of San Francisco	1894	DeYoung (publishing)
Freer Gallery of Art	1916	Charles Freer (railroads)
Frick Collection	1920	Henry Frick (steel)
Harvard University Art Museums (Fogg)	1895	William Hayes Fogg (China trade)
Henry Art Gallery	1917	Horace Henry (railroads)
Huntington Library and Art Gallery	1919	Henry Huntington (railroads)
Indianapolis Museum of Art	1883	John Herron
Isabella Stewart Gardner Museum	1903	Isabella Gardner (commerce)
Los Angeles County Museum of Art	1910	City
Memory Art Gallery of Rochester	1913	Mrs. J. S. Watson (telegraph)
Metropolitan Museum of Art	1870	Group of businessmen
Michael C. Carlos Museum	1876	Emory; Carlos (alcohol distributor)
Milwaukee Art Museum	1888	
Minneapolis Institute of Arts	1915	
Mississippi Museum of Art	1911	Citizen association
Munson-Williams-Proctor Arts Institute	1919	Munson (banking); Williams (politics); Proctor (manufacture)
Museum of Fine Arts, Boston	1870	Group of citizens (Henry Kidder, finance; W. Endicott, dry goods; Charles Eliot, Harvard president)
New Orleans Museum of Art	1911	Isaac Delgado (sugar)
Newark Museum	1909	Louis Bamberger (retail)
Parrish Art Museum	1898	Samuel Parrish
Philadelphia Museum of Art	1876	Group: Centennial related
Phillips Collection	1897	Duncan Phillips (steel)
Portland (Maine) Museum of Art	1883	Margaret deMedici Sweat (retail)
Portland (Oregon) Art Museum	1892	Henry Corbett (bands)
Saint Louis Art Museum	1892	Group: St. Louis Fair
Seattle Art Museum	1917	Russell Fuller (medicine)
Telfair Museum of Art	1875	Alexander Telfair (trade; agriculture)
Toledo Museum of Art	1901	Edward Libbey (glass)
Wadsworth Atheneum	1842	D. Wadsworth (insurance)
Walker Art Center	1879	T. Walker (lumber)
Walters Art Museum	1908	William Walters (railroads)
Worcester Art Museum	1896	Stephen Salisbury (trade)
Yale University Art Gallery	1832	John Trumbull (artist)

Note: Includes all museums listed in the AAMD directory.

two objectives, it is worth considering the commonalities as well. An art museum is, for the most part, a spatial technology for facilitating the personal experience of art. While connoisseurship might be the elite extreme of the aesthetic experience, and art education the populist extreme, they can be expected to share some common kernel or at least to be connected by a continuum of personal experience. Are there cultural commonalities in the "high" and "low" experience of art? Can a single institution serve both extremes? To explore the question of whether common and elite artistic tastes are connected, we used time-series analysis of art prices and attendance at museums.

Clearly, art serves in some measure as an investment good, and thus its price will reflect other forces in investment markets. This has been the direction of most of the prior literature. For example, Goetzmann and Spiegel (1995) take art as a fixed percentage of wealth and show how this may explain the covariation of art with equity markets. More recently, Ait-Sahalia, Parker, and Yogo (2001) show how this covariation between luxury goods like art might account for the magnitude of the equity premium. To date, however, there has been little theoretical work that links a social-pecking-order framework to the prices of the luxury goods and the aesthetic experience directly. On the other hand, such frameworks are common in other parts of the finance literature. For example, "keeping up with the Joneses" models in the asset pricing literature, such as Bakshi and Chen (1996) and Campbell and Cochrane (2001), show how competitive, socially determined preferences may affect security prices. A natural question to ask is whether local social competition determines the demand for conspicuous consumption as well and what role museums might play in this competition.

Economists have long debated the issue of whether art provides a fair rate of return to investors. The natural presumption is that some component of the return to art investment is the aesthetic dividend that accrues to the owner—the private benefits enjoyed by viewing the work. Neglecting expectations about future resale, the entire value of owning a painting would be the capitalized stream of the aesthetic dividends. Given the evidence on the social role of art institutions presented above, one could conceivably substitute "social" for "aesthetic," however. Museums deliver a flow of these nonmonetary dividends to participants: The aesthetic dividends are delivered through viewership, the social dividends are delivered through board association, membership, and attendance. To the extent that there are common tastes and desires for social signaling, we might expect that measures of the dividend flow and its capitalized value to covary. Indeed, our cross-sectional regressions found a relationship between attendance—i.e., the demand for the flow—and the value of the stock. We also might expect art prices to covary with attendance. By the same token, the existence of common aesthetic tastes and demand for social signaling

should be associated with correlations in museum attendance. In this section, we test these two propositions with time-series data on museum attendance and the returns to art investment.

2.4.1 Data

It is surprisingly difficult to obtain time-series data on museum attendance. The AAMD was unwilling to provide us access to their annual survey for multiple years. As an alternative, we contacted the top fifty art museums in the country and asked for their annual attendance numbers. Many had to reconstruct this information specifically for us. In total, we were able to obtain annual attendance figures for twenty-six museums for different intervals of time. Table 2.9 reports this time-series data. In order to test hypotheses about the covariation in art prices and museum attendance, we construct an equal-weighted index of annual percentage changes in museum attendance from this data. As table 2.9 suggests, the composition of this changes as museums enter and exit the sample, but it provides the best measure we can get of the annual fluctuations in national art museum attendance. Table 2.10 reports the statistical characteristics of the index for different subperiods of the data.

For our measure of returns to investment in art, we use the Mei and Moses (2002) art price indexes. These are estimated from repeated sales of art works auctioned at major houses from 1875 to the present. The technology is similar to Goetzmann (1993)—it calculates pretax and precommission investment returns based upon the auction-to-auction price relative, conditional upon resale. Hence, those works that did not sell after once appearing at auction have no influence on the estimation of the time series of returns. For our purposes, we are chiefly interested in the intertemporal variation in art prices. In small sample, repeat-sales estimators may induce negative serial correlation in the series estimates. However the Mei and Moses data set is large, and thus we may take their index estimation as a fairly accurate representation of the trends in art prices over the past forty years.

2.4.2 Do Art Returns Explain Museum Attendance?

If art prices and museum attendance both reflect fluctuations in the common component of demand for the aesthetic or social dividend, we should expect to find some correlation between attendance and the art index. Figure 2.2 plots the cumulated growth in art prices and in museum attendance for the equal-weighed index and for a few representative cities. From 1961 to 2000, art prices appreciated at a considerably higher rate than the growth rate in attendance at art museums. The plot suggests little relationship between attendance and art prices, however. Art prices spiked in the late 1980s and 1990, while the attendance graph shows no such trend.

To more formally examine the relationship between art prices and attendance trends, we regress the equal-weighted index of annual percentage

Table 2.9 Museum Attendance Data

Year	Asia	Baltimore	Dallas	DeCordova	Georgia	Johnson	Huntington	Illinois	Indianapolis	Getty	Kimbell	L.A. County	Memorial
1. 1960	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2. 1961	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3. 1962	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4. 1963	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5. 1964	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6. 1965	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7. 1966	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2,665,388	n.a.
8. 1967	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,887,135	n.a.
9. 1968	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,174,674	n.a.
10. 1969	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,133,870	n.a.
11. 1970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	610,102	n.a.	n.a.	n.a.	n.a.	1,384,448	n.a.
12. 1971	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	487,753	n.a.	n.a.	n.a.	n.a.	1,185,741	n.a.
13. 1972	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	450,817	n.a.	n.a.	n.a.	n.a.	1,203,999	n.a.
14. 1973	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	450,000	n.a.	n.a.	n.a.	n.a.	1,124,870	n.a.
15. 1974	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	486,847	n.a.	n.a.	n.a.	n.a.	1,204,857	n.a.
16. 1975	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	552,299	n.a.	n.a.	n.a.	n.a.	1,026,918	n.a.
17. 1976	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	596,419	n.a.	n.a.	n.a.	n.a.	1,425,704	n.a.
18. 1977	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	590,075	n.a.	n.a.	n.a.	n.a.	1,350,302	n.a.
19. 1978	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	541,557	n.a.	n.a.	n.a.	n.a.	2,750,039	n.a.
20. 1979	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	444,094	n.a.	n.a.	n.a.	n.a.	357,577	n.a.
21. 1980	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	379,096	n.a.	545,152	n.a.	n.a.	506,956	n.a.
22. 1981	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	396,695	n.a.	596,223	n.a.	n.a.	586,587	n.a.
23. 1982	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	489,917	n.a.	n.a.	n.a.	n.a.	372,182	n.a.
24. 1983	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	502,635	n.a.	n.a.	n.a.	n.a.	415,000	n.a.
25. 1984	n.a.	n.a.	n.a.	n.a.	n.a.	63,591	470,692	n.a.	n.a.	n.a.	n.a.	579,569	n.a.
26. 1985	n.a.	n.a.	n.a.	n.a.	n.a.	73,993	509,292	n.a.	n.a.	n.a.	n.a.	914,978	n.a.
27. 1986	n.a.	n.a.	n.a.	n.a.	n.a.	71,701	456,824	n.a.	n.a.	n.a.	n.a.	421,296	n.a.
28. 1987	n.a.	n.a.	n.a.	n.a.	n.a.	83,762	515,058	n.a.	n.a.	n.a.	n.a.	1,099,440	n.a.
29. 1988	n.a.	n.a.	n.a.	n.a.	n.a.	73,665	483,964	n.a.	n.a.	n.a.	n.a.	860,689	85,333
30. 1989	n.a.	n.a.	291,100	n.a.	n.a.	77,656	442,238	n.a.	n.a.	n.a.	n.a.	950,833	80,349
31. 1990	n.a.	315,047	442,200	n.a.	n.a.	67,097	497,482	n.a.	n.a.	n.a.	n.a.	663,869	73,978
32. 1991	n.a.	302,196	419,600	n.a.	n.a.	84,212	542,813	n.a.	422,464	n.a.	n.a.	1,003,059	98,458
33. 1992	n.a.	483,347	427,000	n.a.	n.a.	66,535	534,676	n.a.	n.a.	n.a.	n.a.	848,099	79,499
34. 1993	n.a.	328,714	410,700	n.a.	n.a.	72,423	492,624	29,610	n.a.	n.a.	n.a.	612,005	84,952
35. 1994	n.a.	322,073	422,300	n.a.	n.a.	67,656	553,503	28,943	n.a.	n.a.	n.a.	551,935	88,294
36. 1995	n.a.	311,577	380,000	n.a.	n.a.	74,698	484,849	25,469	n.a.	n.a.	n.a.	541,308	83,733
37. 1996	61,868	347,996	458,100	54,991	78,966	71,393	463,938	34,925	n.a.	n.a.	n.a.	663,429	87,273
38. 1997	62,666	317,090	415,200	84,724	65,003	71,875	487,861	45,526	n.a.	n.a.	n.a.	602,141	102,682
39. 1998	85,117	340,677	431,500	92,954	86,802	66,284	467,064	48,689	n.a.	1,750,000	n.a.	554,024	85,678
40. 1999	91,369	277,589	501,661	90,432	109,000	68,081	509,377	32,331	n.a.	1,500,000	481,049	1,328,765	75,398
41. 2000	73,880	290,299	n.a.	100,156	120,000	72,134	534,162	25,545	380,425	1,400,000	138,016	597,409	110,910

Note: n.a. = not available.

changes in attendance on annual percentage changes in the Mei and Moses (2002) art index. We also perform each regression separately by city, and finally we stack all cities together and estimate the coefficient on art under the assumption of equality of coefficients. Table 2.11 reports the regression results, showing no evidence of a relationship between attendance and art returns. Assuming our tests have power, we can interpret this negative evidence as favoring the hypothesis that the demand at the high end and the demand at the low end for the nonmonetary dividends supplied by art are essentially disjoint.

Figure 2.2 also suggests little relationship among the museums in the

Table 2.9 (continued)

Metropolitan	Museum of Fine Arts	National	Norton	Philadelphia	Princeton	St. Louis	Dali	Guggenheim	Walker	Walters	Whitney	Yale
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	99,196
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	92,989
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	94,372
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	83,440
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	79,302
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	92,019
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	101,424
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	114,211
n.a.	n.a.	n.a.	n.a.	n.a.	41,811	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	131,811
n.a.	n.a.	n.a.	n.a.	n.a.	43,641	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	126,253
n.a.	n.a.	n.a.	n.a.	n.a.	43,850	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	119,004
n.a.	n.a.	n.a.	n.a.	n.a.	47,575	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	101,482
2,225,530	n.a.	n.a.	n.a.	n.a.	59,770	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	120,946
2,272,212	n.a.	n.a.	n.a.	n.a.	99,706	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	118,366
2,590,851	n.a.	n.a.	n.a.	n.a.	123,722	n.a.	n.a.	n.a.	n.a.	n.a.	261,342	87,496
3,326,012	n.a.	n.a.	n.a.	n.a.	84,338	n.a.	n.a.	n.a.	n.a.	n.a.	231,829	96,293
2,871,417	n.a.	n.a.	n.a.	n.a.	89,519	n.a.	n.a.	n.a.	n.a.	n.a.	278,981	144,290
3,337,040	n.a.	n.a.	n.a.	n.a.	86,779	n.a.	n.a.	n.a.	417,380	n.a.	401,489	75,392
3,235,684	n.a.	n.a.	n.a.	n.a.	77,228	n.a.	n.a.	n.a.	436,040	n.a.	458,547	98,546
4,687,277	490,888	n.a.	n.a.	n.a.	76,031	n.a.	n.a.	n.a.	423,362	n.a.	369,791	96,423
3,369,934	390,604	n.a.	n.a.	n.a.	59,551	n.a.	n.a.	n.a.	645,799	n.a.	441,405	106,677
3,574,138	327,431	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	360,793	n.a.	637,578	110,223
3,232,876	341,901	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	415,340	n.a.	420,150	99,346
4,333,918	335,142	n.a.	n.a.	n.a.	61,817	n.a.	n.a.	n.a.	401,305	n.a.	426,547	110,914
3,945,708	437,685	n.a.	n.a.	n.a.	61,145	n.a.	n.a.	n.a.	396,554	n.a.	387,743	97,130
3,889,471	491,603	n.a.	n.a.	n.a.	68,281	n.a.	n.a.	n.a.	352,099	n.a.	310,595	117,746
3,290,133	507,507	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	473,259	n.a.	340,781	185,951
4,871,698	511,838	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	473,074	n.a.	457,471	118,467
3,767,018	665,887	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	334,033	n.a.	399,564	137,867
4,585,554	560,187	n.a.	n.a.	n.a.	48,118	n.a.	n.a.	n.a.	350,044	220,000	313,143	135,981
4,329,474	510,992	n.a.	n.a.	n.a.	75,713	n.a.	n.a.	n.a.	335,996	200,000	338,090	155,085
4,479,344	760,868	n.a.	n.a.	n.a.	81,345	n.a.	n.a.	n.a.	371,672	247,000	260,800	119,834
4,453,441	544,804	n.a.	52,494	n.a.	103,589	n.a.	n.a.	671,303	356,801	275,000	273,986	120,630
4,399,542	579,466	5,597,973	54,174	n.a.	119,211	542,656	n.a.	919,191	406,910	306,000	273,426	121,436
4,308,881	1,247,768	4,042,044	55,092	n.a.	78,836	447,436	n.a.	745,526	456,825	255,000	231,100	103,786
4,657,430	1,259,642	4,684,095	40,268	873,515	72,188	479,738	n.a.	788,717	499,693	267,000	293,040	96,873
4,566,579	n.a.	4,731,418	87,689	841,683	85,385	645,738	n.a.	789,182	509,123	200,000	421,867	100,968
5,309,076	1,801,924	5,637,841	98,309	1,148,816	84,797	553,853	209,312	875,118	516,568	275,000	291,800	98,848
4,950,136	1,323,380	6,198,523	123,212	734,149	68,144	653,016	225,685	1,048,302	518,398	344,000	385,836	111,547
4,850,913	1,251,094	5,969,528	150,436	748,966	76,722	494,848	216,340	1,029,638	430,252	143,676	464,244	n.a.
5,152,884	1,784,332	5,126,954	69,487	645,999	69,980	499,944	212,057	1,129,366	581,590	110,952	570,255	116,400

Note: n.a. = not available.

sample. This is even more surprising. While the low correlation between attendance and art prices may not be surprising given that auctions reflect demands by a relatively affluent clientele, (indeed, a group whose wealth may depend upon a different set of factors than does the wealth of those who regularly attend art galleries) it is surprising to us to see low intercity relationships in museum attendance trends. In fact, the average correlation among the cities, reported in table 2.12, is close to zero. One way to interpret this is that all art appreciation, like all politics, is local. In some ways, this result reinforces our earlier finding on the importance of both city- and museum-specific factors in determining attendance patterns. An alternative explana-

Table 2.10 **Summary Statistics, Annual Percentage Changes in Attendance Index of American Art Museums, 1961–2000**

	Geographical Growth	Average Growth	Standard Deviation
1961–1970	–0.0105	–0.0100	0.0930
1971–1980	0.0422	0.0461	0.1064
1981–1990	0.0307	0.0414	0.1046
1991–2000	0.0205	0.0414	0.0599

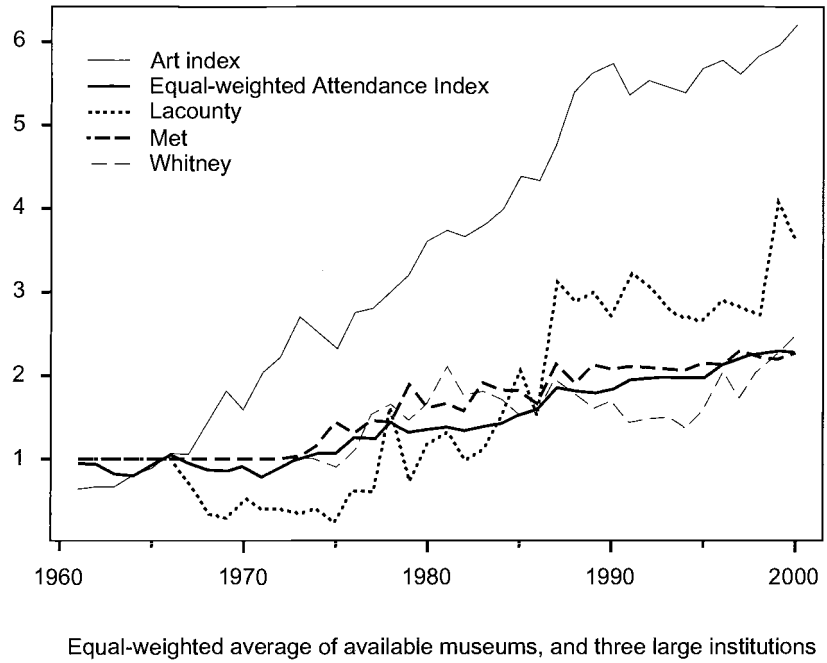

Fig. 2.2 Comparison of the performance of art at auction to measures of growth in attendance

Notes: For an equal-weighted index of museum attendance, and for three museums: Los Angeles County Museum, New York Metropolitan Museum of Art, and the Whitney Museum of American Art. Equal-weighted average of available museums, and three large institutions

tion is that traveling shows are important determinants of attendance with the biggest drawing shows are in different cities in different years.

2.5 Conclusions

Art museums in the United States come in a range of ownership forms. In this paper, we have found striking differences in the performance of

Table 2.11 **Regressions of Equal-Weighted Percent Changes in Attendance on Art Returns**

	Coefficient	*T*-statistic	*N*	R^2
Asia Society and Museum	–0.033	–0.037	4	0.001
Baltimore Museum of Art	0.381	1.006	10	0.112
Dallas Museum of Art	0.210	–0.651	10	0.050
DeCordova Museum and Sculpture Park	–1.179	–2.203	4	0.708
Georgia Museum of Art	0.962	1.629	4	0.570
Johnson	–0.064	–0.480	16	0.016
Huntington Library and Art Gallery	–0.175	–2.181	30	0.145
Illinois Art Gallery	–0.747	–1.298	7	0.252
Indianapolis Museum of Art	0.000	n.a.	1	n.a.
J. Paul Getty Museum	0.528	n.a.	2	1.000
Kimbell Art Museum	0.000	n.a.	1	n.a.
L.A. County Museum of Art	0.286	0.742	34	0.017
Memorial Art Gallery of Rochester	–0.394	–1.362	12	0.156
Metropolitan Museum of Art	–0.131	–0.851	28	0.027
Museum of Fine Arts	–0.451	–1.315	19	0.092
National Gallery of Art	0.123	0.302	7	0.018
Norton Museum of Art	–0.749	–0.665	8	0.069
Philadelphia Museum of Art	–1.502	–3.109	5	0.763
Princeton University Art Museum	0.178	0.863	25	0.031
Saint Louis Art Museum	0.506	1.035	7	0.177
Dali	0.127	0.145	3	0.021
Guggenheim Museum	0.001	0.002	8	0.000
Walker Art Center	–0.143	–0.709	23	0.023
Walters Art Museum	–0.490	–1.43	11	0.127
Whitney Museum of American Art	0.320	1.517	26	0.088
Yale University Art Gallery	0.152	1.087	38	0.032
Equal-weighted index	–0.008	–0.122	40	0.004
Stacked regression	–0.014	–0.215	343	0.001

Note: City-by-city regression, index regression, and stacked regression.

these museums that are consistent with our expectations about differences in institutional economic incentives. Based on our work comparing art prices and museum attendance, we further find that the levels of demand for art by the various sectors of the market are disjoint. In this light, it is interesting to consider the recent Italian proposal to begin moving some of the major museums into the nongovernmental sector. Our own work suggests that changing governance in this way may well change the operating behavior of those museums, perhaps in ways unanticipated by the government.

Our work also suggests that art collections housed in museums, although often treated as noncommercial assets, have considerable ability to generate revenues. Moreover, the productivity of a collection varies significantly by the characteristics of the city in which it is located. In our his-

Table 2.12 **Correlations in Attendance (museums with at least ten years of data)**

	V1	Baltimore	Dallas	Johnson	Huntington	L.A. County	Memorial	Metropolitan	Museum of Fine Arts	Princeton	Walker	Walters	Whitney	Yale
V1	1.00	0.05	0.06	0.06	–0.11	–0.10	–0.07	0.09	–0.11	0.12	–0.03	0.09	–0.03	0.01
BaltimoreMOA	0.05	1.00	0.09	–0.67	–0.06	–0.26	–0.32	–0.05	–0.43	0.20	–0.09	0.13	0.19	0.09
DallasMOA	0.06	0.09	1.00	–0.51	0.37	0.03	–0.28	–0.22	–0.31	0.73	–0.24	–0.52	0.35	0.38
Johnson	0.06	–0.67	–0.51	1.00	0.15	0.59	0.60	0.45	0.21	–0.23	0.19	0.11	–0.12	–0.48
Huntington	–0.11	–0.06	0.37	0.15	1.00	0.24	0.24	0.10	0.30	0.08	–0.20	–0.23	–0.18	–0.20
Lacounty	–0.10	–0.26	0.03	0.59	0.24	1.00	–0.22	0.06	–0.12	–0.04	–0.23	–0.47	0.31	–0.16
MemorialAG	–0.07	–0.32	–0.28	0.60	0.24	–0.22	1.00	0.14	0.81	–0.25	0.48	0.08	–0.25	–0.27
Met	0.09	–0.05	–0.22	0.45	0.10	0.06	0.14	1.00	–0.06	–0.07	–0.22	0.13	–0.04	–0.05
MFA	–0.11	–0.43	–0.31	0.21	0.30	–0.12	0.81	–0.06	1.00	–0.54	0.14	–0.25	–0.39	–0.31
Princeton	0.12	0.20	0.73	–0.23	0.08	–0.04	–0.25	–0.07	–0.54	1.00	–0.39	–0.11	0.04	0.03
Walker	–0.03	–0.09	–0.24	0.19	–0.20	–0.23	0.48	–0.22	0.14	–0.39	1.00	0.10	–0.05	0.11
Walters	0.09	0.13	–0.52	0.11	–0.23	–0.47	0.08	0.13	–0.25	–0.11	0.10	1.00	–0.47	–0.11
Whitney	–0.03	0.19	0.35	–0.12	–0.18	0.31	–0.25	–0.04	–0.39	0.04	–0.05	–0.47	1.00	–0.02
Yale	0.01	0.09	0.38	–0.48	–0.20	–0.16	–0.27	–0.55	–0.31	0.03	0.11	–0.11	–0.02	1.0

torical work on the relationship between social elite and museums, we find remarkable stability: big donors continue to found new museums and support those museums with largesse earned in traditional, old-economy ways.

In this paper, we have focused on the role of governance structure in museum decision making. An interesting example of the dynamics of museum governance can be witnessed in the extraordinary set of western American art collections accessible to the public in Denver, Colorado. In the 1980s and early 1990s, the Denver area had not one, but three, superb collections of art of the American West. The Museum of Western Art (MWA) was founded in the early 1980s as a private, not-for-profit institution by cattleman William Foxley to display his personal collection of paintings and sculpture, which were on loan to the organization for which he served as the chairman of the board. The MWA collection focused on nineteenth- and early-twentieth-century "masterpieces" of western art—from the action paintings of Remington and Russell to the later, much-admired modernist paintings by Taos and Santa Fe artists. The Philip Anschutz collection, similarly, is composed of major works of western American art, and it was somewhat more widely known than the MWA collection. Anschutz amassed a fortune on oil, railroads, and telecommunications, and, like William Foxley, began to collect prize western American paintings and sculpture as a private collector. Over the past two decades, he has exhibited it widely to the public by publishing a catalogue of the collection and underwriting traveling exhibitions of the works to major art museums around the country. The Denver Art Museum (DAM) recently organized a show of the Anschutz collection that traveled to the Jocelyn Museum in Omaha and the Corcoran Gallery in Washington, D.C. The third major collection in Denver was in the Denver Art Museum itself. Dorothy and William Harmsen, founders of the Jolly Rancher Candy Company, assembled a collection of noteworthy western paintings and American Indian art over several decades, which they donated in 2001 to the DAM. The artists whose works are represented in the Harmsen collection are essentially the same as those in the Foxley and Anschutz collections, but they are a part of a public museum, not a private collection or a private, not-for-profit museum.

The constellation of collections is instructive, first because of the apparent rivalry within Denver among some of the leading businessmen at the time to form top western art collections—perhaps as a way of "keeping score" and perhaps as a way of demonstrating refinement, taste, and "western" values. In this respect, it is tempting to draw a parallel to the rivalries among turn-of-the-century Pittsburgh's captains of industry as they vied to buy European masterpieces.

Perhaps more interesting for our purposes is that these founders chose different governance forms for the context of their philanthropy. The collection of the Museum of Western Art, until it was ultimately moved and

partly dispersed, was largely in the control of the founder, who was able to sell and to augment the exhibit. The museum relied, to a large extent, upon his financial support. Nevertheless, it was a not-for-profit organization with a mission to serve the public through its exhibitions. The Anschutz collection, on the other hand, was not necessarily formed with the public good in mind: The founder has complete control and no special mandate to use it for philanthropic goals, although lending to a traveling show is certainly a benefit to the public. Although Anschutz and Foxley undoubtedly had the option to give their collections to the Denver Art Museum, they both chose to maintain control of their collections to a greater or lesser degree. In contrast, the Harmsen collection is no longer under the control of the founder, nor does it receive top billing at the museum. The DAM prides itself on displaying an extensive survey collection of world art, as opposed to a regionally focused collection. While Harmsen can probably exert influence on the mission of the museum through his philanthropic activities, the director of the DAM has a larger range of choices about the strategic deployment of the institution's assets. In addition, the DAM serves a broader constituency—a community with an interest in world art, not solely focused on western Americana. Thus, institutional forms facilitate different donor and community goals, even when the art itself is similar.

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