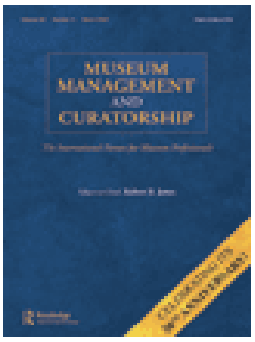

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Should public and nonprofit museums have free admission? A defense of the membership model

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Should public and nonprofit museums have free admission? A defense of the membership model

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ABSTRACT

A common pricing structure for American art museums is to offer a choice between an admission fee for a single visit, and the purchase of an annual membership that would allow the member an unlimited number of visits with no additional charge. This paper evaluates this particular method of museum pricing in terms of efficiency and equity. It concludes, drawing from the economic analysis of two-part pricing, that there is a strong rationale for the membership model, and that this is so even in cases where the museum experiences an increase in unrestricted endowment such that 'free' membership would be financially sustainable.

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Museums; arts pricing; membership; two-part pricing; arts participation

Museum pricing is a key strategic decision for management and trustees in terms of finances and alignment with institutional mission, and it is also a salient issue for the public: changes in admissions pricing are always sure to make local news, with pointed, though not necessarily justified, criticism when prices rise. While some museums offer free general admission, sometimes with a suggested donation, to all visitors (though perhaps with a charge for viewing special exhibitions; the Saint Louis Art Museum would be an example), most American museums charge for admission (American Alliance of Museums 2013). This paper provides an economic analysis of museum pricing for admission. The specific focus is on the method commonly used in American art museums: a price for a single visit, combined with an option to purchase a membership, which allows for unlimited visits over the course of a year, at no additional charge per visit. Is this pricing model efficient? How does it serve an institutional commitment to equity in access?

In a provocative recent essay, economist O'Hare (2015) argues that the paid membership model is neither efficient nor equitable, compared to a policy of free admission for all. O'Hare grounds his argument in economic analysis, and this paper is in some ways a response to that argument, coming to a different conclusion.

Before going deeply into the analysis of efficiency and equity in museum pricing, an immediate question arises: if museums were to eliminate all admission fees, how would they cover the lost revenue? O'Hare suggests deaccessioning a portion of their works. Referring to the Art Institute of Chicago (AIC), O'Hare writes: 'Selling just 1 percent of the collection by value – much more than 1 percent by object count – would enable the AIC to endow free admission *forever*' (2015, 72). Deaccessioning is a large topic on

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its own that goes well beyond the scope of this paper, which is focused specifically on the issue of pricing for admission. Briefly, although the practice of selling art to finance anything other than the acquisition of new works for their collections runs afoul of the American Alliance of Museums *Code of Ethics* (2000) and the Association of Art Museum Directors *Policy on Deaccessioning* (2013), O'Hare is not the first to question the prohibition. Frey (2003) also asks why museums should be restricted in the disposition of artistic assets if the proceeds from sale could have greater value in other museum activities, such as capital improvements or operating expenses, and Bueno de Mesquita (2016) asks whether art museums are trapped in a sub-optimal equilibrium, with individual museums unable to sell parts of their collection even when in dire financial straits due to fear of official sanctions, though all museums could benefit collectively from a change in policy. Nor is the case for relaxing the prohibition on deaccessioning for purposes other than financing acquisitions a new one:

> Over the years, the wealth of a museum tends to become concentrated in its collection. Unless some of that wealth is allowed to flow back into new programs, the museum may end with a first-class collection ill-cared for in a dilapidated (or even uninsurable) building by a second-class staff. The public interest might be better served by a more balanced approach. (Feldman and Weil, 1974, 1117)

Economists are not unanimous on the question of deaccessioning. Srakar (2015) proposes that the prohibition may serve as a way for museum trustees (or the state, in a publicly owned museum) to keep control of the museum's financial management; a museum director who knows that deaccessioning is an option should funds be needed can become less vigilant in maintaining control of operating budgets. Taking away the possibility of deaccessioning removes that 'safety net' beneath management, promoting more cautious financial decision-making.

Leaving aside the question of whether the codes against deaccessioning represent good policy, O'Hare's point is beyond contention: allowing for some selling of works from storage would, for large museums like the AIC at least, create a financial asset whose returns *could* cover the revenue losses of eliminating admission fees. But if a museum suddenly had a significant financial asset that it did not previously have, would moving to free admission be the best use of the returns from that asset? There are opportunity costs, in terms of other types of programming that could be financed from the asset sale, such as covering the costs of lending (or giving) works to smaller, poorer museums, programs for school children, creation of studio space and workshops, expanding paid internship programs, and so on. That some museums may be sitting on collections-in-storage that could be used as an asset to fund free admission does not in itself make free admission a sound use of funds.

There is an interesting parallel with the case of wealthy universities. In what has become a very publicly contested election to Harvard University's Board of Overseers, one slate of candidates has taken the position that Harvard's endowment of over $36 billion generates so much revenue that there is no reason to charge tuition to any undergraduates (*New York Times* 2016; *The Economist* 2016). The arithmetic of Harvard's being able to afford free tuition is beyond dispute. Harvard, like most large American universities, already engages in significant variation in net tuition (tuition minus gift aid) at the individual student level (Waldfogel 2015), and the option of free tuition for all is 'affordable'.

Without wanting to overegg the analogy, the use of the financial returns from Harvard's endowment, like the returns to the endowment of a museum, comes with opportunity costs. It is not enough to say free tuition (or admission) is feasible given the wealth of the institution; we also must ask whether it is a prudent use of funds given the alternative possible uses.

Conceding that free admissions are certainly an option for some museums, the next two sections of this article evaluate that option in terms of efficiency and equity.

Memberships, admission fees, and efficiency

In this section I will argue that the typical current pricing practices of art museums are already grounded in efficiency. Economists call an outcome efficient if there is no possible rearrangement that could improve the outcome for some people without at the same time making someone else worse off. An inefficient situation, in contrast, is one where there is such a possible improvement available.

When it comes to pricing, as a *general* rule efficiency is obtained through setting prices equal to marginal costs. *Marginal costs* are the *additional* costs that arise from serving one more customer, and are distinguished from *fixed costs*, which are the costs borne by the institution that do not change when the number of customers rises or falls by a small amount. When thinking about the marginal costs for a museum, a thought experiment would be to ask by how much costs would rise if daily attendance rose from 1000 to 1001.

In a crowded museum, there are marginal costs from an additional visitor, since the new visitor is adding to the crowd, making the museum experience for all the other visitors less enjoyable. As a rule these crowding costs are near zero up to a particular number of visitors, after which the sense of crowding becomes apparent (an analogy would be cars on a highway: on an uncrowded road, one additional vehicle does not cause other vehicles to have to slow down, while on a congested road each additional vehicle makes the journey for all other vehicles slower). It may also be the case that much of a museum is relatively uncrowded, except for in the room holding a particularly famous work. See Maddison and Foster (2003) for evidence on the magnitude of this effect at the British Museum, and also Frey and Steiner (2012), who suggest that charging visitors by the hour might be appropriate for the most crowded museums.

But if the museum is not subject to congestion, the marginal cost per visitor is going to be very close to zero; there would be neither an increase in the operating costs of the museum, nor a decrease in the enjoyment by the other visitors, as a result of one more visitor. The museum experience in this situation is a *nonrival good*: the additional visitor is not using up any scarce resources. For comparison, think of a restaurant. An additional customer for lunch *does* bring additional costs, in terms of the ingredients used in preparing her meal, as well as the labor costs of preparing her food, taking and serving her order to her table, and cleaning up afterwards. But the museum visitor does not 'use up' the artwork she views in the same way a restaurant customer 'uses up' a couple of eggs in making her omelet. The paintings remain as they were; the eggs are gone for good. And serving the customer in the restaurant uses much more labor-time dedicated to just her than the visitor to the museum receives in individualized attention. This analogy is not to compare the enjoyment of food with the enjoyment of art; it is simply to consider that the enjoyment of food does involve marginal costs (even in an uncrowded restaurant) but the enjoyment of art, in these circumstances, does not.

O'Hare writes: 'Free is the right price for a nonrival good (you're not displacing anyone else) like attending a museum that isn't congested' (2015, 72). The logic is as follows. Suppose an uncrowded museum is charging $5 for admission, but additional visitors entail zero marginal cost. Elizabeth is willing to pay, at most, $3 to visit. This situation is not efficient: Elizabeth values going to the museum at $3, it would not cost the museum anything to let her in, and yet she is deterred from going because of the $5 price. In fact, with a marginal cost per visitor of zero, *any* price above zero will be deterring at least some people from visiting even though it would have cost the museum nothing in terms of expenses to let them in. Thus the claim that 'free' is the right price for a nonrival good.

But in fact virtually all museums *do* have an arrangement for a zero price per additional visit: *memberships*.

Most analysis of museum prices focus on prices for a single-day admission; here I want to look at policies on membership pricing. The standard arrangement is that an annual membership allows unlimited visits to the collection during the year, that is, zero additional price for each visit. It is true that with a membership, the more visits the patron undertakes during the year, the lower was the effective amount paid per visit. But the key point with a membership is that with one in hand, the patron is not facing any additional charge when deciding to make a visit. There are typically other benefits that come with membership as well, such as discounts on purchases from the store or café, or admission for the member's children and perhaps a guest. There are museums that have general free admission to the main galleries but who still maintain membership programs. These vary in type. The Baltimore Museum of Art, for example, has free admission to the main galleries, but offers a non-free membership which brings other discounts on purchases, parking, and special exhibitions. The Minneapolis Institute of Art offers free admission *and* free membership, but in this case the membership is related to encouraging philanthropy. But in this paper, to maintain focus on pricing for admission, attention will be devoted to the unlimited number of times the member can visit the exhibitions.

Museum memberships are not new. The Metropolitan Museum of New York introduced memberships at $10 per year in 1873 (which is roughly $200 in current dollars) to generate operating funds, and the Boston Museum of Fine Arts followed suit (at the same price) in the 1880s, where a membership brought with it free admission to visits (Temin 1991).

Notice how common this sort of membership offer is. My subscriptions to the *New York Times* and the *London Review of Books*, my Netflix account, my cable television, my music streaming service, my membership at the university fitness club, and my pass to the state parks, all have the feature of a 'membership' price that brings unlimited access with no additional charge per 'visit'. Firms have an interest in seeking out efficient pricing schemes, as a way to gain customers and increase their own net revenues, and there is clearly strong appeal for the membership-plus-unlimited-access model.

The reasoning behind this model was first presented by Oi (1971), as the solution to what is known as the 'two-part pricing' problem. All of the examples in the previous paragraph, as well as museums, set two prices – 'membership' (which includes unlimited access), and a per-visit price – either of which could conceivably be set at zero. For any of these goods, if members are asked for a per-visit contribution alongside their membership fee, their willingness to pay for membership in the first place declines. The higher the per-visit price for members, the less they will be willing to pay for the membership; for example, what I am willing to pay for a museum membership falls if the museum's policy changes such that members no longer are entitled to unlimited free visits, but now must pay an additional $4 per visit.

So how would an organization efficiently set its two membership prices? Oi's solution was itself in two parts:

(1) Set the per-visit price equal to its marginal cost (which for a nonrival good is going to be zero);
(2) Set the membership price at the rate that maximizes net revenue, given the customer demand for memberships when visits are priced at marginal cost.

The first rule can best be understood through an example. Although in many cases marginal cost will be zero, for the sake of generality assume that for the local history museum marginal cost is $1 – that is the cost of attending to one additional visitor to the museum. Suppose, contrary to our rule, the museum has set a price per visit for those with a membership at $3, and the price of annual membership at $25. Sophia purchased a membership in January, and has made a number of visits during the year, paying $3 each time. But the law of diminishing returns sets in, and the amount she is willing to pay for one more visit is a little less as the number of visits accumulates. Eventually she reaches a point (say in October) where she would be willing to pay as much as $2 for one more visit, but no more than that. Since the per-visit price is $3, she stops coming. Yet had the museum charged her some amount between $1 and $2 for one more visit, (1) Sophia would have done so, and (2) the museum would have profited from the extra visit, since the marginal cost of her additional visit is only $1.

But would not the museum earn less money by setting a lower per-visit price? No, because it can make up the difference in the membership price. By setting per-visit price equal to marginal cost, the museum can attract the highest number of visits that is actually beneficial (i.e., any member willing to cover their marginal costs to the museum is welcomed), and can capture those benefits in the membership fee it charges.

The second part of Oi's rule is then straightforward; given the optimal per-visit price, set the membership price at the level that maximizes revenue. I am assuming here that the marginal costs to admitting a new member are close to zero; some amount of paperwork is involved, and there will be some costs for any printed materials or mailings to members, but these are slight (for the sake of brevity I am putting to the side the decision regarding whether to offer extra enticements to members, such as special openings and tours, as a means of attracting additional members and patron loyalty to the museum). The membership price that maximizes revenue turns out to be the level where a small change in price whether up or down would yield an equal percentage change in the number of memberships sold (fewer memberships if the price is raised, more memberships if the price is lowered; see Rushton [2015]).

It has been shown that if, as is the case in many museums, marginal cost per additional visitor is zero, then the optimal membership policy is to allow unlimited visits for members at no extra charge for the number of visits. And indeed this is a common policy.

With the rule on memberships in mind, now consider the price to charge a visitor who does not want a membership, but who only wants to visit for a single day. It always makes sense to offer a single-day admission as well as an offer of membership. As per our example above, while Sophia was happy to pay $25 for a membership (even with a $3 per visit additional charge), Paul might only want to visit once, and be willing to pay as much as $10 but not $28 for that one visit. With very low marginal cost per visitor, it is valuable for the museum, and valuable for Paul as well, to offer a single visit option. What presents a challenge to any manager in charge of setting prices is the great variation within the potential customer base; Sophia and Paul are two out of thousands of potential visitors, many of whom will only ever be interested in a single visit, and many who reside in the city and would like to visit often, and others who would typically like to visit two or three times per year, and among each type there are differences in the amount they are willing to pay for either a membership or a single visit, either out of income constraints or interest in the museum experience. In practice, price-setting involves applying economic models of pricing, and trial-and-error, to a population of potential visitors that can never be known with certainty, and that is constantly shifting.

Common practice in the U.S. is to set an annual membership fee around three to five times the price of a single visit. Table 1 shows the membership and single visit prices for a selection of art museums. Since museum membership is tax deductible, but tickets for single admissions are not, with a marginal income tax rate of around 30% (for higher income members) the after-tax ratio of membership fee to single visit price is more in the range of two or three. In other words, anyone thinking of visiting the museum three or more times in a year is wise to obtain a membership, and that is not even accounting for other benefits that a membership brings in terms of discounts in the museum shop, café, or special exhibitions.

Within the single visit option, we can also apply Oi's two-part pricing formula. Specifically, what is the marginal cost to the museum, once it has admitted Paul for the day, of allowing him to visit multiple rooms, and to stay for many hours, rather than to just visit one or two rooms, and stay only for one hour? In a non-crowded museum, that marginal cost is going to be to zero. And so, for the single-day visitor (as well as for the member), it makes no sense to charge additional fees per room visited, or per hour spent in the museum. A 'special' exhibition might carry an extra price to account for crowding in that one space, and to capture additional revenues from those patrons with a taste for wanting to see everything on display. But otherwise a single admission price with no charges per room or per hour is what the economics of two-part pricing would suggest.

A final question regarding the efficiency of pricing is: if the marginal cost of someone visiting the museum is zero, then does not the theory suggest memberships ought to be

Table 1. Membership and single-day admission at selected museums.

Museum	Annual membership	Single-day admission
Art Institute of Chicago	$95	$20[a]
Boston Museum of Fine Art	$75	$25
Detroit Institute of Arts	$65	$12.50[b]
Houston Museum of Fine Arts	$60	$15
Indianapolis Museum of Art	$55	$18
Museum of Modern Art (New York City)	$85	$25

Note: Prices are for a single adult, non-concession price, as of 27 April 2016.
[a]For Chicago residents. Single-day admission is $22 for in-state but not Chicago, and $25 for out-of-state.
[b]Per a tax initiative, free for residents of local counties.

free as well? Oi's (1971) solution to the two-part pricing problem, which led to the rule for marginal cost pricing per visit as an efficient solution, was first generated in the context of a profit-seeking firm (indeed, the model in his paper is Disneyland, solving the two-part pricing problem of what to charge people to enter the fairground and what to charge them per ride once they are inside (explaining why Disney chooses the 'free rides' policy)). Profit-seeking firms need the membership revenue to cover costs if they are choosing not to charge by amount of usage, and they have no other sources of revenue. Thus Netflix and Spotify each allow unlimited usage at no charge, but do charge for membership.

But what about art museums in the nonprofit or public sector? They could conceivably have other sources of funds to cover costs, whether directly from the government, or through (government-subsidized) grants from donors and foundations, or, as O'Hare (2015) suggests, by using the proceeds from deaccessioning a portion of their collections. The question of efficient pricing for memberships in nonprofit or public museums is not straightforward. On the one hand, pricing of memberships is inefficiently high if it is well above the actual marginal cost of allowing an additional member. On the other hand, *any* way of raising revenue to cover costs brings inefficiencies, particularly funds raised through taxes that are subsequently redistributed to museums to cover their expenses. Economists began trying to solve what became known as the 'marginal cost controversy' in the 1930s, in an effort to deal with what ought to be the prices for high-fixed-cost/low-marginal-cost public utilities and transit systems (seminal papers are Hotelling [1938], Coase [1946], Vickrey [1948], and Baumol and Bradford [1970]. An excellent history of the controversy is given by Frischmann and Hogendorn [2015]). What can this debate tell us about membership rates?

If marginal cost pricing ought to be applied to visits for those with a membership (on efficiency grounds), then *not*-free memberships are justified by the following:

(1) Public subsidy, including the public subsidy that arises from the income tax deduction for charitable contributions, entails an efficiency cost from the raising of tax revenue. It is unavoidable that the revenues needed to cover the costs of running a museum (across all its mission-related activities) have to come from *somewhere*, and each of those sources carries some efficiency loss.
(2) Relying entirely on public or donated funds, or from earnings from an endowment enhanced by the sale of art works, deprives museum management and trustees, and government arts-policy advisors, of the *information* conveyed by the public willingness to purchase memberships (the information conveyed by the public through their willingness to pay was a key aspect of the 'marginal cost controversy' described above). A museum with no membership or admission fees loses the market signal regarding how the visiting public values the museum, or how that might be changing over time. Any museum that relies on tracking a selection of *metrics* in its governance procedures loses a key metric when it forgoes the model of selling memberships.
(3) There is an issue of fairness in having those who directly benefit from visiting the museum bear a share of the cost of maintaining the museum, as opposed to relying entirely on donors and the state.

It is to this final point that we now turn.

Museum pricing and equitable access

Research on attendance at museums by socio-economic status has consistent evidence on two key questions.

First, museum attendance is strongly associated with social status, education, and income. For 2012, through its Survey of Public Participation in the Arts, the National Endowment for the Arts (NEA) found that 14% of households with family income between $20,000 and $50,000 per year had at least one adult visit an art gallery or museum during the previous year, but that rises to 26.5% for family income between $75,000 and $100,000, to 33.8% for family income between $100,000 and $150,000, and to 43.2% for family income above $150,000 (NEA 2015a, 21). That same survey also found museum and gallery attendance highly associated with education levels. See Ateca-Amestoy and Prieto-Rodriguez (2013) and O'Hagan (2014) for further (confirming) analysis of the NEA data. Chan and Goldthorpe (2007) obtain similar findings regarding museum and gallery attendance, and social status and education, for the UK, as do Brida, Dalle Nogare, and Scuderi (2016) for Italy.

The second question regards the impact of admission fees on equitable access. Evidence suggests that lower, or free, admission, does not have a marked impact on the socio-economic make-up of museum attendees. The introduction of free admission to British museums, while, as O'Hare (2015) notes, having a strong effect on the number of museum visits, 'the social profile of those visiting had remained pretty stable' (Cowell 2007, 217). O'Hagan (1995) found that the Irish national museums attracted those from higher socio-economic groups even with free admission, and that in smaller museums where admission fees were introduced there were no negative effects on attendance. In the U.S., although they do not have comparable data for museums, it was found that attendance is positively correlated with income for *free* music, theatre, and dance presentations (NEA 2015a).

In research on American museums, Dilenschneider (2015) found that adding 'free admission days' to museums that otherwise charge for admission generally attracts more *high income* households instead of the lower-income or otherwise marginalized audiences the free day is hoping to attract, and most of those visitors are returning, rather than visiting for the first time. She concludes 'Free days directly cannibalize membership opportunities and do not engender increased trial from underserved audiences'.

In their analysis of why people do not attend more arts events, the NEA (2015b) found through surveys that price is not the significant barrier: more important are having any interest in attending whatsoever, and the time involved in arts participation (on the other hand, in a German survey Kirchberg (1998) found that individuals cited prices as a barrier to attendance). Dilenschneider (2016) finds that whether an arts presenter (including museums) is seen as 'welcoming' is a key factor in attendance, and is itself strongly correlated with household income. She further finds that admission price is *not* a factor in whether potential visitors feel 'welcome'. Note each of these studies is based on surveys, which do not necessarily give a good account of how people *actually* respond to changes in prices, where the evidence suggests prices do not represent a significant barrier to low-income individuals.

This paper is not the place to review museum strategies in reaching out to underserved populations, which is clearly a fundamental part of the mission of nonprofit and public museums. But it is relevant to point out here that free admission has not been shown to be an effective strategy in this regard, and that while some museums, if they chose, could make an effort toward providing free admission for all, there may be other uses of the financial resources of the museum that would more effectively address the goal of more equitable attendance and participation.

Conclusion

The goal of this paper was to subject to scrutiny the policy of charging for admission to museums, especially through the model of offering potential visitors a choice between purchasing a single visit and acquiring an annual membership that would allow unlimited visits.

There is much to be said for the current, common model in U.S. art museums of an annual membership allowing for unlimited visits. It satisfies the efficiency criterion of allowing people to visit as often as they like while they impose no additional costs on the museum or on other visitors, it provides a clear signal to museum management on shifts in how the public values the museum experience, and it has those who benefit most from the museum – its visitors – pay some share of the costs of its operations. Efforts to increase access, especially in underserved populations, can be much better targeted directly to them in ways other than free admission. The membership model is an aspect of the museum status quo worth keeping.

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No potential conflict of interest was reported by the author.

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