CULTURAL ECONOMICS

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Culture and Economics

The two terms "culture" and "economics" can be related in two quite different ways: The *first* approach is to study the relationship between two different sectors or spheres of society; the *second* approach is to study the arts with the help of economic analysis. The concept of "culture" as an *institution or as an organization supplying artistic services* used in the Economics of Art differs fundamentally from the concept that understands "culture" as an *attitude* or as a *way of behaving* used in the other papers in this collection. In order to illuminate the way the Economics of Art approaches a subject, the case of art museums is sketched.

Institutions of culture and the economy

The effect of *culture in an institutional sense on the economy* is extremely difficult to capture. What is, for instance, the effect on economic activity of having a theatre or a museum in a city? There is a great number of *"impact studies"* seeking to measure the effect of such institutions on firms located in a particular area. These studies, however, are based on a questionable methodology. They use a simple (Keynesian) multiplier of the expenditures undertaken by the cultural institutions themselves as well as of their visitors. Such an approach is at best able to capture the additional revenue created but not value added which should be the object of interest from an economic point of view. Impact studies also disregard the substitution effects produced. If, for example, a city organises a musical festival, it may well be that there is no overall effect on the economy as visitors may stop going to other festivals they attended before. Finally, impact studies disregard the positive and negative external effects produced by cultural activities. This is of major consequence because many "culturalists" argue that the critical effect of the arts is on people's preferences.

Another method to capture the influence of cultural institutions is to measure the social value created. Theatres, museums, and other cultural institutions provide benefits to persons beyond only those visiting cultural institutions. The literature distinguishes several such values:

- *Option value:* people value the possibility of enjoying art sometime in the future;
- *Existence value:* people benefit from knowing that a cultural supply exists but do not necessarily visit any cultural institutions now or in the future;
- *Bequest value:* people derive satisfaction from knowing that their descendents and other members of the future community will be able to enjoy the art supply if they choose to do so;
- *Prestige value:* people derive utility from knowing that the cultural supply in their city or region is highly valued by persons living outside. They themselves need not actually like the cultural offerings, nor even visit them;
- *Education value:* people are aware that the cultural supply contributes to their own or to other persons' sense of culture and value it because of that.

Cultural supply may also produce negative external effects, the costs of which are borne by persons not visiting the cultural venues. An example is the congestion and the noise pollution produced by the visitors to a museum, which is inflicted on the local community.

Most recently, the "Life Satisfaction Approach" (Frey, Luechinger and Stutzer 2008) based on the economics of happiness has allowed us to address the public good element of cultural supply. The advantage is that the benefits of culture are reflected in the independently measured life satisfaction indices, which are then related to the extent of cultural supply by econometrically estimating a happiness equation. In contrast, the willingness-to-pay-approach directly

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links the benefits to a particular cultural supply. This procedure risks falling prey to the "prompting effect" identified in psychology: it may happen that as a result of questioning people in surveys a higher value is attributed to cultural supply than otherwise would be.

Analysing culture from the economic point of view

A *second approach* to relate the two terms "culture" and "economy" is to use the rational choice approach characterizing the economic approach. Cultural economics thus understood belongs to a more general field of the economic approach to human behaviour[1], comprising, for instance, the economics of education, health, the family, sports, or religion. The narrow formulation of the selfishly maximizing homo oeconomicus has often been extended in cultural economics by introducing psychological and sociological elements, including such features as decision anomalies, or new motivational elements such as the crowding out of intrinsic motivation by external interventions.[2]

Most adherents of "Cultural Economics" consider it a sub-discipline of economics[3] and combine the two approaches. In particular, they use the rational choice approach to analyze the effect of economic factors on the arts. Examples are the study of art markets, most prominently the rate of return on investment in art (paintings and other objects of art), the income of artists, or the impact of regulations on the arts.

The economics of art museums[4]

Demand for museums

There are two types of demand for museums. The first is the *private demand* exerted by the *visitors*. These may be persons interested in the exhibits as a leisure activity or as part of their profession as an art dealer or art historian. The visit may be undertaken by individual or family decisions, or may be part of an organised activity, e.g. schools or firms. The second type of demand comes from persons and organisations benefiting from a museum. This *social demand* is based on external effects and/or effects on economic activity.

Private demand

By far the largest number of museum visits can be attributed to leisure time activity. The number of visits can be analysed by a traditional *demand function*, capturing the major factors determining the rate of visits per time period. Its characteristics can be determined by maximising individual utility functions subject to budget and time constraints. Its features can be empirically measured by using the data on museum visits and the factors included in the demand function, normally by a multiple regression analysis. There are three major determinants relating to *prices* or *costs*:

(1) *Entrance fee.* Together with the number of visits, it determines the respective revenue gained. The price elasticity indicates by how many percent the number of visitors decreases when the entrance fee is raised by a given percentage. Econometric estimates for a large number of different museums in different countries suggest that the demand for museum services is price inelastic. The low price elasticity suggests that museums can generate significant increases in revenues through increasing admission fees.

(2) *Opportunity cost of time.* Visitors have to forgo alternatives when they visit a museum. In order to measure the monetary value, one must identify how much additional income could have been gained during that period. For persons with high income, potential and variable time use, mostly the self-employed, the opportunity costs of time are higher than for people of low income and fixed working hours. The latter are therefore expected to visit museums more often, all other things being equal. The opportunity cost of a museum visit not only depends on the time actually spent in a museum, but also on how much time is required to get to the museum, i.e. the location, the parking facilities, etc. For tourists, the opportunity costs of time tend to be lower than for local inhabitants, because they often visit a city with the purpose of visiting the respective museums.

(3) *Price of alternative activities.* These are, most importantly, substitute leisure activities, such as other cultural events (theatre, cinema), sports, dining out in restaurant, time spent with friends at home, etc. Even within the industry, museums may constitute a substitute for other museums. The higher the price of such alternatives is, the higher museum attendance is, cet. par. But complements also systematically influence the num-

[1] Pioneered by Becker (1976), see more recently Kirchgässner (2008), or Frey (1999).
[2] See Bénabou and Tirole (2006) and Frey (1997).
[3] See Baumol and Bowen (1966), Peacock (1993), Benhamou (2000), Throsby (2001), Frey and Pommerehne (1989), Frey (2004) and the collection of articles in Peacock (1998), Rizzo and Towse (2002), Towse (2003), Ginsburgh and Throsby (2006), Hutter and Throsby (2008).
[4] See more fully Frey and Meier (2006).

ber of museum visits. Important are the costs incurred through travel, accommodation and meals. The higher the costs are, the lower the rate of museum visits, cet. par.

Income is another "classical" determinant of the demand for museum visits. Econometric estimates reveal an income elastic demand, i.e., increasing real disposable income favours museums (see e.g., Withers 1980). There are many *other determinants* that may be included in a well-specified museum demand function, such as the attractiveness of the building, the level of amenities provided by a museum, i.e., the general atmosphere, the cafés and restaurants and the museum shop. Important are also the marketing efforts made by a museum, especially through regular and attention-catching advertising.

Social demand

Museums produce effects on people not actually visiting the museum. As already pointed out above, museums create *social values* (option, existence, bequest, prestige and educational values), for which they are not compensated in monetary terms. As a consequence, museums tend not to produce these values, or do so in too little quantity.

Museums may also produce negative external effects, whose costs are carried by other persons. An example would be the congestion and noise museum visitors inflict on a community.

Effects on markets

Museums produce *monetary values* for other economic actors. They create additional jobs and commercial revenue, particularly in the tourist and restaurant business. These expenditures create further expenditures (e.g., the restaurant owners spend more on food) and a multiplier effect results.

Supply of museums

The production of museum services shows some particularities.

Cost structure

Museums face a cost structure which differs from other firms in the service industry and can explain some of their particularities.

(i) Museums have high fixed costs and low variable costs. This leads to a diminishing average cost curve.

(ii) The marginal cost of a visitor is close to zero. Efficient pricing close to marginal cost therefore never covers the costs involved.

(iii) The costs of museums have a dynamic component, which is disadvantageous for the enterprises. Due to a productivity lag, museums, like most cultural organizations, face constantly increasing costs over time.

(iv) Opportunity costs constitute a substantial part of the costs of a museum. The exhibits of a museum generate high opportunity costs, but are seldom taken into account by the museum.

Museums own, through their collected art works, a huge endowment of high value. The works of art lead not only to storage and conservation costs, but also opportunity costs. The real costs of this capital stock would become apparent if museums borrowed money to buy the works of art. The annual interest, which the museum has to pay, constitutes the real costs of capital. The opportunity costs of a work of art, is its monetary value used in an alternative investment. The annual rate of return can be seen as the cost of the artwork. Other opportunity costs are, e.g., for the building and its alternative uses. For most museums, the value of their holdings is by far their greatest asset.

Most museums do not put a value on their collection in their accounts. Museums then understate their true capital costs (Grampp 1989, 171) by not taking opportunity costs into account. This practice leads to an understatement of the losses and an overstatement of potential revenues. It induces the museum to become too large.

Firm structure

Museums can take different organisational forms. Mainly, they can be private for-profit organisations, private non-profit organisations and public organisations run in a non-profit way. For Europe and for the United States, the non-profit organisational form is the predominant structure for museums.

Most museums face a demand curve lying below the average cost curve. This makes it impossible to set a price at which total admission receipts cover the total cost of the museum. If price discrimination is not applicable, or only of limited use, Hansmann (1981) argues that arts organisations can still ask individuals for voluntary price discrimination. Visitors volunteer to pay more than the official admission price and thus become donors. The non-profit form dominates the for-profit enterprise in getting donations, because consumers lack exact information about the quality of the good and service provided.

Museum behaviour

The behaviour of a museum or its managers respectively can be modelled in two different ways:

(1) the neoclassical approach, which assumes rational actors maximising utility of a museum in a benevolent way; and
(2) an institutional approach, which goes beyond the market and emphasises the importance of institutional settings (e.g. the dependence on public support) for the behaviour of the museum management. We will present the first approach briefly and apply the second approach in more depth.

Neoclassical approach

The management of a museum is assumed to maximise a utility function. Assuming that a museum's objective is non-profit, the budget constraint requires zero net revenue. The non-profit structure of the museum raises the question as to what the museum manager maximises. The museum's utility is related to the number of visitors to the museum *(y)* and the quality of the exhibitions *(q)*. This assumes that the quality of the museum service can be measured. Then the decision by the museum management is to maximise

$$U = U(y,q)$$

subject to

$$p(y)y + g(q) + h(y) - c(y,q) = 0$$

The museum receives revenues from the entrance fees *(p)*, which is a function of the number of visitors *(y)*; the level of donations and government grants *(g)*, which depend exclusively on the quality of the museum; and the revenue from ancillary goods from the shop and the restaurant or café *(h)*, which depends on the number of visitors. Costs depend on both output and quality.

The first-order conditions can be written as:

$$U_y/\lambda + p_y y + p(y) + h_y = c_y$$

$$U_q/\lambda + g_q = c_q$$

$$p(y)y + g(q) + h(y) = c(y,q)$$

The subscripts indicate partial derivatives and λ is the multiplier on the constraint.

Two insights can be gained by looking at the optimality condition: Firstly, directors of a non-profit museum get extra utility from an increased number of visitors. They therefore set the entrance fee such that marginal revenue from entrance fees and ancillary goods are less than marginal costs. This result could explain why museums set too low a price according to the revenue maximising condition. Secondly, museums engage in increased quality beyond the point where marginal grant income is equal to the marginal cost of increasing the quality by one unit. This behaviour is due to the extra utility the museum gets from an increase in quality. According to the model, museums tend to provide too high quality at too low a price compared to revenue maximising firm.

The objectives of the museum, quality of the exhibition and number of visitors are the crucial assumption in the above model.

Institutional approach

Instead of taking for granted that managers of museums behave totally in the interests of the museums in the following model the management is primarily concerned with the personal utility of its members. The directors' utility depends on their own income and the prestige they receive within their reference group, which consists mainly of art lovers and the international museum community. A second source of amenity is derived from the agreeable working conditions and job security. But the museum management is not free to simply pursue its own goals, because they face certain constraints on their actions. Differences in these institutionally determined restrictions explain the museum management's behaviour. The finances available are the most important constraint on the museum's management. Other constraints, such as limited space or legal and administrative burdens imposed by the bureaucracy or labour unions, can also weigh heavily. The source of income differs considerably between museums. While some depend mostly on public grants, others rely exclusively on private money (donations and sponsorship, or income generated from entrance fees, shops and restaurants). From a politico-economic point of view, the institutional set up and the nature of funding of the museums has a dramatic influence on the behaviour of the management. We here distinguish three types of museums: public, private and museums dependent on donations.

The incentives for the museum's management to behave in a certain way vary enormously, depending on this institutional framework.

Public museums

Directors of purely *public museums* rely exclusively on public grants. The government allocates them sufficient funds to cover the expenses considered necessary for fulfilling their tasks. While they are expected to keep within the budget, if a deficit occurs, it will be covered by the public purse. This institutional setting provides little incentive to generate additional income and to keep costs at a minimum. The directorate will not allocate energy and resources generating additional income, because any additional money goes back into the national treasury. If they were to make a surplus, the public grants would correspondingly decrease, which acts like an implicit tax of 100 percent on profits. The museum's management tends to emphasise non-commercial aspects.

When the management is not forced to cover costs using its own efforts, it can legitimise its activities by referring to intrinsic "artistic", "scientific", or "non-commercial" standards. This helps the museum directors achieve their goal of gaining prestige, top performances and pleasant working conditions.

From this institutional point of view, one would therefore expect that:

- Public museums do not sell any paintings from their art collection because firstly, the directorate cannot use the income generated and secondly, activities are then measurable in monetary units, which leaves them open to criticism from the outside (be it by politicians or by public administrators).
- Directors of public museums are little interested in the number of visitors, because they are not dependent on income from entrance fees or shops. Therefore, exhibitions are designed to please an insider group of art "freaks".
- As a consequence, visitors' amenities in public museums are poorly developed. Little attention is paid to the profitability of museum shops, restaurants and cafeterias.

Private museums

Directors of purely *private museums*, on the other hand, have a strong incentive to increase their income, because their survival depends on sources of money like entrance fees, the restaurant, shop surpluses and additional money from sponsors and donors. If private museums generate a surplus, they are able to use it for future undertakings. As a result, it is to be expected that:

- Private museums rely on the market when managing their collection. Museums actively sell paintings that no longer fit into the collection and use the money to buy new works of art.
- Private museums are more concerned with attracting visitors. "Blockbuster" exhibitions guarantee that the museum will earn revenue, because the preferences of a larger group of people are taken into account. Hence, the exhibitions are better arranged from a didactic point of view, appealingly presented and, above all, the works of art are shown in a context, which is attractive to a large crowd.
- Private museums emphasise the visitors' amenities. The museum management is concerned with the well-being of the museum's visitors and tries to satisfy the preferences of the visitors at the lowest possible cost.

Museum dependent on donations

Contributions to non-profit museums may be deductible under the income tax rule for individuals and corporations in certain countries. When the marginal tax rate falls, the price for donations decreases, which reduces the willingness to donate. The tax-deductible status, if chosen by the museum, affects behaviour fundamentally. There is every incentive to avoid profits by charging low or "social" prices (which strengthens the legitimacy of tax-deductible status), while there is also an incentive to take out profits in the form of various kinds of excess payments that show up as costs.

Museum directors who depend on donations have an incentive to attract donors. People devote much effort and skilled resources to this end. Donors can be pleased in various ways, which influences the behaviour of the museum management. Donors can exercise some measure of control over the activities of museums.

- Donors directly influence museum policy in two ways: they can either interfere in the programming or they can set heavy legally binding limitations on the collections they donate. The limitations on the collections can have great impact on their management. Most donors want to highlight their own artistic visions. As the donations are partly financed by the government via their tax expenditures, the costs imposed by the donors on the museums are indeed a problem of supporting museums through tax deductions. Donors can be pleased when museums publicise the donor's contribution, thus enhancing their prestige. Museums have developed an elaborated system of honours ranging from appropriate attributes ("benefactor", "patron", "contributor", etc.), to naming rooms, wings and even whole buildings after the donor.

– Museums must give the impression that the donations are well used. Donors want to have the feeling that they contribute to a worthwhile cause. A good reputation of the art institution with the public and the media is crucial for the flow of donations. This forces the museum management to use their money efficiently. But there are no contracts completely controlling the directors. Donors therefore prefer to deal with non-profit firms acting under a "non-redistribution constraint" (i.e. prohibiting the personal appropriation of profits). Removing the profit goal avoids the problem of managers cheating the donors to some extent.

Conclusions

The intention of this contribution is to demonstrate that there is a well-developed and intellectually stimulating "Cultural Economics" able to provide new insights into the economic aspects of the arts. This approach has been illustrated through the example of the Economics of Museums.

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