

DISSERTATION



Arts, Markets, and Governments

*A Study in Cultural Policy
Analysis*

Arthur C. Brooks

RAND Graduate School



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A Study in Cultural Policy Analysis

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This document was prepared as a dissertation in March, 1998 in partial fulfillment of the requirements of the doctoral degree in public policy analysis at the RAND Graduate School. The faculty committee that supervised and approved the dissertation consisted of C. Richard Neu (Chairman), Charles Wolf, Jr., and Bart E. Bennett.

PREFACE

This research is focused on management and policy issues for the predominantly nonprofit firms that produce the arts. It is intended to be of interest to three groups of people. First, it presents a number of conclusions that have implications for managers in private arts firms. Second, it addresses many issues that involve public arts policy and the role of public arts administrators. And third, it is intended to create several new starting points for research by scholars in the area of arts policy and cultural economics.

A number of the ideas in this dissertation were at least partially developed in work published over the last year, including the monograph *Economic Strategies for Orchestras*, and papers appearing in the *Journal of Economic Issues* and the *Symphony Orchestra Institute Research Studies Series*. In addition, many individual sections have been tested and improved through presentations at conferences and seminars this year at RAND and a number of universities.

Most of the specific questions addressed in this document come from those I had during my 12-year career performing in orchestras and chamber music. Over the course of seeking answers to these questions, many others have arisen for me about arts management and policy. My aim has been to frame these additional questions here in a way that lends itself to systematic study using the tools of policy analysis. As such, I believe that this work defines fairly clearly a follow-on research agenda to that undertaken here.

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SUMMARY

The Problem Arts Firms Face and Its Effects on the Industry

Policy analysis of the arts begins by asking if and why the nonprofit arts industry behaves differently from other industries, and why (as evidence in this dissertation shows) it is in worsening economic shape, due to what would seem like inexorable rises in costs relative to revenues. There are many possible explanations for this problem: better substitutes for live events, government funding cutbacks, a supposed declining general level of cultural appreciation, uncompetitive behavior within the arts industry, and relatively low labor productivity, most notably. But regardless of its origin, in the absence of remedial action, one or more of three things tends to occur over time to an afflicted arts firm: It will be starved of its labor supply, it will be increasingly reliant on patronage in order to be able to continue to produce, or it will have a constantly rising output price (relative to the rest of the economy) and falling employment level: the firm will shrink away.

This problem can be combated on either the firm's (supply) side or the consumer's (demand) side of the problem. On the supply side, there are three theoretical possibilities.

- A more productive labor force might be simulated via technologies relating to recording or acoustics, through less time devoted to preparation, or by way of higher-quality artists.
- Costs can be defrayed with public subsidies.
- The scale of operations might be lowered until equilibrium is renewed.

Unfortunately, each of these remedies can be quite problematic in practice: Many productivity-enhancing technologies seen in other industries seem ill-

suited to the arts, which are often *predicated* on antiquated technologies (such as acoustic instruments, for example); public subsidies can't be counted on to rise (or even continue) indefinitely; and reducing the scale of operations might actually make the problem worse, since many arts firms (such as orchestras) require a certain number of artists (around 80) to function at all.

While much has been written about the supply side of the problem, considerably less has been said on the demand side, and is thus the primary focus of this work. There are three primary means to exploit demand in fighting the income gap problem:

- Raise demand for the product of arts firms (thus increasing both the quantity sold and its price).
- Decrease the price elasticity of demand for the firms' products (such that cost increases are born disproportionately by consumers instead of the firms).
- Increase the income elasticity of demand (so that a greater portion of income increases are spent on the firms' products).

Six Angles on the Problem

The first chapter of this document is devoted to explaining the income gap problem carefully, to considering theories about its roots and their criticisms, and to laying the groundwork for the remedies to be considered in the subsequent chapters. Two specific theoretical approaches to increasing demand for the arts are the subject of the second chapter. Chapter three begins to concretize these ideas: Each approach from chapter two is indirectly measured using data on symphony orchestras, and conclusions are drawn on which is more effective for different orchestra sizes as well as how each approach might be operationalized. Chapter four swings back to the supply side by explicitly considering the remedy

(mentioned above) of changing the firm's scale of operations to lower (marginal) costs (and raise marginal revenue); specifically, it considers the financial advantages that smaller-sized arts firms might have over larger firms, given current trends in costs and firm organization. Chapter five steps back to question an assumption implicit in all of the prior analysis: that different sources of revenue are compatible with one another. This is not obviously true, especially since claims have been made of late that public subsidies have the power to "leverage" private donations. Finally, chapter six gathers the main points made in earlier chapters about the role and effects of government involvement in the income gap problem, and weaves them into a broader survey of public arts funding. The conclusions reached in the first five chapters lead to interesting points in the debate over public subsidies.

Two Demand-Side Strategies

The second chapter takes a broad swing at the issue of remedying cost disease on the demand side, as discussed above. It looks specifically at the performing arts.

Manipulation of demand for the performing arts can be pursued through several different strategies; this chapter attempts to define two "ideal types" of demand for the arts whose characteristics can be linked to specific strategies.

- A "Veblenian" approach (based on the writings of Thorstein Veblen) to increasing demand is defined, in which the luxury status and appeal of the performing arts is enhanced. In this way, the products of performing arts firms would seem more luxurious and prestigious to consumers for purposes of "pecuniary status" (social status based on wealth position), demand would increase, and the income elasticity of the performing arts would be maximized.

- A “Marshallian” approach (based on the writings of Alfred Marshall) is identified, in which the number of people exposed to the performing arts is maximized. Given that consumers tend to become “hooked” on the performing arts, this exposure should lead to self-perpetuating increases in demand as people find their taste for these products increasing. It should also increase the price elasticity of demand.

It can be argued that public arts agencies tend to follow a Marshallian approach while private arts firms employ more of a mixed strategy. Which approach is more effective, and how they might be operationalized, are empirical questions to be taken up in the third chapter.

Testing and Implementing the Strategies

The third chapter poses and answers several questions about demand for the arts, using symphony orchestras as a vehicle:

- Can orchestras influence in any real way the behavior of consumers toward the services they produce?
- Can any specific instruments for doing so be identified?
- What can be discerned about the effectiveness of the demand-expansion strategies described in the second chapter from findings about the relative effectiveness of these instruments?
- Do these instruments (and strategies) vary in effectiveness based on an orchestra’s individual characteristics?

To help answer these questions, instruments at the orchestra’s disposal are identified which theoretically would affect demand (but not supply): expenditures on recording, advertising, and fundraising. Microeconomic theory tells us that we can easily test the relative effectiveness of each of these

instruments (in shifting demand) by measuring empirically its contribution to changes in revenues earned by the orchestra. The effectiveness of the demand-expansion approaches from the second chapter is tested by establishing a mapping between the Veblenian and Marshallian approaches outlined earlier and these instruments.

The basic findings of this chapter are:

- Orchestras *can* affect their own demand through the use of these instruments (under some circumstances).
- The Veblenian and Marshallian strategies and the instruments studied will be relatively more or less effective based on the orchestra's scale of operations (in terms of budget).

Scaling Down to Solve the Problem

The fourth chapter wades more deeply into the microeconomics of an arts firm's operations, continuing to use symphony orchestras as a vehicle for analysis. It is shown that adjusting the size (in players) of an orchestra in response to cost pressures might likely cause greater financial harm than good (since such downscaling would leave the orchestra unable to perform much of its traditional symphonic repertoire). In some cases, a more attractive alternative would be to simulate a lower (marginal) wage by substituting part-time or noncontracted freelance players for some that are currently full-time. While this might lower quality to the point that demand falls and so do revenues (such that the income gap is worsened), census data, which include smaller-scale orchestras than do the data used in the second chapter, suggest that in fact the net effect of this would be positive.

Aside from the direct benefit of a lower wage bill when some players are no longer on the full-time payroll, a smaller overall financial scale (in terms of revenues as well as costs) may have indirect benefits as well in mitigating the income gap. Possible reasons for this include fewer labor problems in smaller orchestras, as well as the trend (observed in the data from chapter three) toward slight decreases in concert and donated revenues for the larger orchestras. These points suggest possible trends in orchestra organization based on the growing economic pressures: If and when the gap between costs and revenues becomes more pervasive and if the demand side is not effectively harnessed to decrease it, scaling down might be the best realistic alternative for many orchestras.

Do Public Subsidies Leverage Private Philanthropy?

The relationship between these two revenue sources is at the heart of a claim on the part of proponents of state arts funding; namely, that state subsidies “leverage” private donations to the arts and hence a drop in these subsidies would sacrifice donated revenues as well. This claim might seem counterintuitive to some, who find it more likely that state funding would be as likely to crowd out private donations as to attract them. This chapter empirically tests the hypothesis suggested by the first claim, using panel data on five major American symphony orchestras. The principal result of the statistical analysis is that no significant relationship between these types of funding exists for these orchestras. The two funding sources appear to be independent of one another.

These results are based on a relatively limited data set. Subsequent research might profitably apply the statistical framework employed here to other databases pertaining to wider cross-sections of the nonprofit sector.

The Role of the Government

Arts policy research, even that which has a primary focus on the private sector, is inextricably linked to issues of public economics. There are two reasons for this. First, this is research on the private administration of firms that produce a quasi-public good. Second, when discussing an industry that is predominantly organized as not-for-profit, many of the financial issues, including those discussed here, involve direct interactions between firms and the government (beginning with the basic connection provided by the tax-exempt status of their revenues).

In all of the developed world, governments subsidize the arts. However, the extent of this funding is very different across countries. For instance, direct funding is relatively high in continental Europe compared to the United States. This leads to three questions. First, why do governments fund the arts? Second, what are the justifications for doing so at relatively high (or low) levels? And third, what accounts for the cross-national differences seen?

There are several possible explanations for government subsidies to the arts:

- Policymakers may believe and be responding to the argument that such subsidies are necessary to remedy market failure.
- It might be that the public feels it most appropriate (for economic or noneconomic reasons) that the arts be funded in this way.
- Such funding might be in response to rentseeking behavior on the part of producers or consumers of the arts.
- Subsidies might follow in part from the investment decisions of arts firms themselves.

Normative arguments for arts funding generally revolve around the notion that private markets tend to fail in providing the socially-optimal level of the arts. The market failures generally cited are, broadly:

- The arts create positive externalities: They provide benefits to those beyond just the people who directly produce and consume them, and are hence a quasi-public good.
- There is asymmetric information about the preservation of art for future generations (and for-profit arts firms may undertake suboptimally low levels of it).
- There is unequal access across the population to the arts due to unequal incomes.

Arguments have also been made *against* publicly funding the arts for reason of *negative* externalities produced by works that are in some way offensive or controversial. As well, arguments against public funding often relate to the fact that the goals and methods of government arts funding agencies may not be socially optimal or efficient.

In this dissertation's consideration of the private administration of arts firms, a number of conclusions have been reached that help to inform this discussion on the government's role. Principally, these conclusions are:

- Higher levels of government subsidies to the arts generally lessen the need for the demand management strategies outlined in earlier chapters.
- When the demand side of the arts firm's problem is ignored, firms may ignore price signals and thus make suboptimal production (programming, for example) decisions.

- The statistical association between investment decisions by an arts firm and subsequent changes in government subsidies indicates that how firms behave may be a partial explanation for these subsidies.
- The apparent preference of public arts agencies for a Marshallian demand-side approach can be interpreted in (at least) two ways. On the one hand, it might reveal a lack of attention to market signals (to the extent that private firms would rather employ a Veblenian approach) and thus be inefficient. On the other hand, it might be in response to problems that arts firms have in appropriating the full benefit of such an approach within a reasonable period of time (consider an investment in children's concerts, for example, which in theory stimulates demand 15 to 20 years in the future). In the latter case, a Marshallian approach might be optimal in terms of maximizing profit for the arts sector as a whole, even though individual firms do not have an incentive to adopt it.
- Compelling arguments can be made either way as to how public subsidies impact private giving. At least in one arts industry, however (symphony orchestras), the two sources of revenue seem uncorrelated.
- Public arts policy that treats all firms homogeneously and restricts their use of funds is likely not optimal, given the finding that different-sized firms differ with respect to the optimal investment strategy.

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As in the case of all difficult things I have managed to accomplish in the last ten years, I can't imagine having written this dissertation without the patience, support, good ideas, and good sense of my wife, to whom this work is dedicated.

1. INTRODUCTION: THE ECONOMIC WOES OF ARTS FIRMS

“Many financial approaches have been tried over the past 50 years to improve the financial condition of orchestras. Yet, the industry as a whole appears to be in the worst shape it has ever been in....”

The Wolf Report, 1992

Introduction

The statement above won't appear particularly extreme to many people in the nonprofit arts sector; the received wisdom seems to be that times have been tough for arts firms lately and are only going to get tougher. Most of this wisdom proceeds from anecdotal evidence: the death of an established orchestra, for example, or the grim prophecy of an arts administrator facing state funding cutbacks. Some of it comes from more robust sources, however. For example, the Wolf Organization's *The Financial Condition of Symphony Orchestras* (a comprehensive study of the state of American orchestras, commissioned in 1991 by the American Symphony Orchestra League and popularly referred to as the *Wolf Report*) reveals that, in the largest U.S. orchestras, deficits grew on average by almost 30 percent per year between 1986 and 1991. On a more theoretical level, William Baumol (arguably the foremost expert on the economics of the arts) has described how economic theory predicts that, in the absence of important changes, things will tend to get worse financially over time for nonprofit arts organizations. This problem, its origins, strategies and tactics for mitigating it, the future of the industry (with respect to how it is currently functioning), and the implications of all this for public policy, are the focuses of this dissertation.

This introductory chapter serves to define the financial problem facing arts firms, the symptoms of the so-called “cost disease,” in which costs tend to rise more rapidly over time than revenues, as well as to delineate the options for dealing with it. Particular focus is placed on the management of demand for arts firms’ products, both here and in subsequent chapters:¹ Questions are asked and answered as to how arts firms can increase the demand they face such that they earn more revenue relative to their costs.²

Two specific approaches to increasing demand for the arts are the subject of the second chapter, one which works through consumers’ desire to improve their social status by consuming an “elite” product; and one that focuses on the “pure” pleasure consumers get from the art itself. The second chapter is fairly abstract in the way it treats these approaches to consumer demand. Chapter three begins to bring the ideas down to earth. First, I concretize the problem by looking at a specific section of the arts sector: symphony orchestras. Then, I ask how each approach from chapter two might actually be measured, which is more effective for different classes of orchestras, and how each approach might be operationalized. This chapter uses statistical techniques to begin to nail down just what the instruments are at an arts firm’s disposal in its efforts to increase the demand for its product.

Most of the literature on the subject of cost disease to date has focused not on how demand can be increased but rather on what arts firms can do in the course of producing their products to lower their production costs. Some of the

¹ The focus in this dissertation on the demand side is in contrast to most other studies such as those by Dick Netzer [1978] and Samuel Schwartz [1986, 57–66]. These, as well as most other examinations of cost disease, concern themselves with the extraction of benefits on the supply side.

² My use of the “product” or “output” of arts firms, particularly nonprofits that collect public funding and private philanthropy, is quite crude to this point. A more detailed taxonomy of just what arts firms produce—and thus what consumers demand—is outlined in the second chapter. That discussion is based on a much more detailed one in Brooks [1997a, 14–26].

standard possibilities are described in this introductory chapter, including trying to affect technological progress and enlisting the aid of government in the form of cost-defraying subsidies. Another similar strategy (which has *not* been treated in the literature) involves decreasing the scale of operations as costs increase. The economic mechanics of this measure are the subject of the fourth chapter. Specifically, this chapter discusses both theoretically and practically how a smaller-sized firm (defined in different ways) might be differently-afflicted by cost disease than a larger firm, and an argument is put forth about the likely future complexion of symphony orchestra industry, given current trends in costs and firm organization.

Since the aim of the approaches described here is to raise revenues relative to costs, questions involving the compatibility of different revenue sources need to be addressed. This is the subject of the fifth chapter, which asks whether for arts firms, public subsidies might affect the level of private philanthropy they enjoy. Empirical evidence is presented in the case of orchestras.

The presence of the government in arts firms' finances is considered either implicitly or explicitly in each chapter. However, the main focus of this dissertation is on the private sector: The question driving each of the chapters is, "What can arts firms do to ameliorate their cost-revenue situation?" Over the course of treating this question, a number of issues arise that are more properly dealt with within in the context of follow-on research specifically on the role of the public sector in supporting the production and consumption of the arts. In chapter six, the issues involving government from chapters one through five are woven into a general survey of government's role in this regard. My intention in this chapter is to describe the best (or at least most likely) vector for this follow-on work.

Throughout, the arguments and analysis employed are undergirded by the tools of economic theory, mathematics, and statistics. The intended audience of this research is practitioners and analysts with reasonably good knowledge of the arts sector but without necessarily a high degree of quantitative sophistication.³ Therefore, except when crucial to make a particular point, the mathematics behind this analysis are relegated to the appendices at the end.

This research is intended as a cross-disciplinary effort.⁴ Before I continue, motivation for such research bears a brief discussion. Traditionally, a serious problem with much work in arts policy has been a lack of cognizance of the unique characteristics of the markets in which arts firms operate and a lack of analytic technique on the part of practitioners. For instance, at one recent conference I attended, an economist predicated an analysis of musical quality in ensembles on the assumption that higher levels of postsecondary education among musicians was a valid indicator of higher performance ability. Unfortunately for that analysis, any musician would argue that an aspiring performer tends to stay in school only until an adequate performing position is won (and hence this assumption is backwards). A different problem is witnessed when anecdotes are mistaken for data and opinions are represented as established fact, as is the case in much “analysis” performed by practitioners. If there is one overarching aim of this thesis, it is to perform analysis that avoids both traps: To the extent possible, the voice I intend to adopt in the following chapters is that of a practitioner; the analytic toolkit is that of a policy analyst.

³ “Practitioner” as I use it here refers to artists, managers, board members, volunteers and arts firm staff.

⁴ This research is intended to integrate my knowledge of the arts industry (gained during years making my living as a performer in orchestras and chamber music) with techniques of policy analysis.

Considering the nonpractitioner's trap described above, it seems reasonable to state that in at least some important respects, arts firms behave unlike other organizations that *are* the subject of standard economic theory. In the words of Peter Pastreich (Executive Director of the San Francisco Symphony):⁵

"Now, although the business side of Orchestras resembles the business side of business, orchestras are not like most other businesses. We have more in common with a baseball team, university, or church than we do with a department store, automobile manufacturer or hotel [p. D-1]."

If this is true, the question often arises as to why. There are two main reasons, I believe. First, a culture in these industries (which is beginning to change) has traditionally, consciously, kept its lofty goals relatively uncontaminated from market signals, and public arts policy has generally engendered this culture. In *The Liberal Hour* [1960], John Kenneth Galbraith sums up this problem well:

"Art has nothing to do with the sterner preoccupations of the economist. The artist's values—his splendid and often splenetic insistence on the supremacy of aesthetic goals—are subversive of the straightforward materialist concerns of the economist. He makes the economist feel dull, routine, philistine, and uncomfortable and also sadly unappreciated for his earthy concern for bread and butter including that which nourishes the artist. Not only do the two worlds not meet, but the regret in each is evidently negligible" [p. 45].

Second, as will be argued several times in upcoming sections of this research, the intangible nature of some of the products of arts firms, as well as the way markets can fail for these products, leads to structural differences between an orchestra and, say, a steel mill.⁶

⁵ This quote is from Mr. Pastreich's response to the *Wolf Report* which is published along with that document.

⁶ For the sake of clarity I will shift occasionally from speaking of all the arts to that of the performing arts, specifically symphony orchestras. This is a particularly convenient shorthand since the data used in the following chapters are mostly on these firms. It should be noted, though, that all of the observations and conclusions made in this introduction are intended to be generalizeable to other types of nonprofit arts firms.

Before continuing, a brief clarification is in order as to just what industries I am referring to. Clearly, the financial problems under discussion are not universal in all cultural industries; my reference to the “nonprofit arts sector” in the first sentence is intended as a shorthand for those in which the cultural economics literature has already identified problems with a growing gap between costs and revenues: classical music, dance, theater, and to a somewhat lesser extent, visual arts organizations such as museums. The reason that these industries tend to be afflicted in this way is discussed in the next section, and throughout this research. In brief, cultural industries apparently *not* afflicted tend to be those that exhibit some combination of healthy labor productivity growth, a product which is not generally considered to be quasi-public, reasonably efficient business practices, and effective attention to the demand side of their markets. Obvious examples here would be commercial television and the film industry.

The Problem Arts Firms Face and Some Traditional Explanations

Simply put, the economic problem that nonprofit arts firms face today is that deficits seem to rise inexorably (as the following data and discussion will illustrate). To maintain the scale of operations traditionally enjoyed, these firms find that they must borrow more, draw down endowments, or seek cost concessions from artists. Why is this? Some suggest that certain elements of modern life just naturally work against these firms’ ability to generate sufficient income.

Maybe so. For one thing, technological advances have created relatively inexpensive products (CDs, VCRs, and soon DVDs) that are unambiguously better than the substitutes for live events that preceded them (such as LPs, in the case of music). However, it can also be argued that the advent of these

affordable technologies should create a new audience for “the real thing”; as an example, casual observation tells one that most converts to great music begin with recordings and graduate to concert tickets (since the real connoisseur usually acknowledges that there’s no substitute for a live concert). On balance, it would be hard to argue convincingly that they are *solely* responsible for the problem.

Others explain revenue shortfalls by pointing to supposed recent trends in state funding that are unfavorable to arts firms. But this ignores the fact that the bulk of state intervention in the arts in this country itself postdates the financial problem described. For example, the National Endowment for the Arts (NEA) didn’t even exist until 1965, the same year that Baumol and Bowen had already completed “On the Performing Arts: The Anatomy of Their Economic Problems.” In addition, the empirical findings presented in chapter three indicate that for many firms (specifically, a substantial section of the symphony orchestra industry), there has in fact been no significant trend in this funding, down or up.

Related to this last argument is that the surge in arts funding of the 1960s and 70s created an “artificial” proliferation of arts firms, and that current economic woes are just the side-effects of the industry shrinking back to its market-equilibrium size, as governments become less generous. Still, the observed lack of a trend in this funding (as will be shown in the third chapter and Appendix 3), at least for certain sections of the industry, make this explanation questionable.

Another view holds that people are less cultured or educated than they were 20 years ago. The anecdotal evidence is one-sided here: We are constantly treated to news stories about ninth graders who can’t find Canada on a map, and it certainly doesn’t require much attention to notice that students’ exposure to the

great pillars of Western culture isn't as high a priority as it once was. However, in spite of all the hand-wringing, the percentage of the population that graduated from college increased by about 48 percent from 1975 to 1995.⁷ The quality of this education and its cultural content are valid points of argument, but the issue certainly isn't black and white.

Finally, a common argument cites the presence of forces internal to the arts sector that are destructive financially over time. Norman Lebrecht [1997], for example, holds that increases in public and private philanthropy towards the arts since the 1960s have led symphony orchestras and other musical organizations to decrease their attention to the public's preferences: Programming and performances have become bland and unadventurous, leading to decreases in consumer demand at the box office at the same time that the original support (from government, at least) is waning.⁸ This would push down total revenues. A second argument of Lebrecht's is that monopoly power within the arts industry (specifically, he speaks of that found in concert management) has over time had inflationary cost effects. A related point might be made with respect to there being perhaps a low level of economic *acumen* possessed by private arts administrators—compared with those from generations ago—who have grown up in an uncompetitive business environment (due to the government subsidies and a cartelized market described by Lebrecht). Beyond lacking the incentive to raise revenues relative to costs, some of these administrators may simply not be competent to do so effectively.

⁷ Source: 1996 *Statistical Abstract of the United States*.

⁸ Another argument is that public intervention has led to privately-unsustainable avant-gardism in the arts, which may or may not be at odds with the first contention. Either way, though, the result is that non-box office revenues reduce incentives to pay attention to signals in the market for the arts firm's tangible product (art).

“Cost Disease”

Economics offers another explanation, sometimes referred to in the economics literature as “cost disease.” While considerably less sensational than the other alternatives discussed, this notion provides what many feels is a convincing elucidation of what might be going on here, and has become a staple explanation in the cultural economics literature. In famous works published in 1965 and 1966, Baumol and William Bowen hypothesized that arts firms would be particularly likely to see their costs rising faster than prices in the economy in general. So, for instance, performing arts firms’ ticket prices would increase more slowly than the wages these firms paid out over time. More recently, economists have also used the term “cost disease” to refer to the increasing gap between *revenues* and costs (as opposed to *prices* and costs).⁹ Over time, as costs increase more than revenues, cost disease leads to shrinking profits or growing deficits for firms.

So far only a symptom has been described: Arts firms’ costs exceed revenues. The real heart of the cost disease theory, as originally described by Baumol and Bowen, goes beyond symptoms to explain *why* this occurs. Their explanation posits an inability of performing arts firms to enjoy productivity advances relative to the rest of the economy. The argument can be summarized as follows: It takes 85 people 40 minutes to produce a live performance of a Brahms symphony, just as it did 125 years ago when the piece was written. In other words, because of the nature of the product (a live concert), orchestras have not really seen increases in labor productivity. At the same time, however, the

⁹ This more general definition is more functional in the sense that if remedies (described below) are successful, cost disease can be “cured” even if costs are still increasing faster than prices, since firms are no longer suffering from the rising cost’s ill effects. To take the metaphor further, under the first definition cost disease is chronic but treatable, whereas under the newer definition it is curable.

development of strength- and intelligence-enhancing technologies in other parts of the economy have created huge increases in labor productivity—by thousands of percent since the time of Brahms. Economic theory predicts that since people tend to be paid that which they “earn” for the firm, their greater productivity will bring them higher real wages. For orchestras, this means the following: Wages in the general (outside of the orchestra) economy tend to rise with productivity, putting upward pressure on wages all over the economy, including in orchestras. (If orchestras did *not* choose to raise wages, so that *relative* wages in the orchestra dropped enough, people would not—in the absurd limit—choose to make their livings as musicians, and orchestras would disappear.) In orchestras, however, these higher wages aren’t compensated by higher revenues, since musicians’ productivity hasn’t changed. The net result is that costs rise relative to revenues over time. Analogous arguments have been made in all of the arts.

Note that none of this is intended to make the naive claim that in the presence of any difference in wages, musicians would all spontaneously quit the orchestra and move to the steel mill next door. On the contrary, this theory is perfectly compatible with that of *compensating wage differentials*, which states that certain nonpecuniary characteristics of a job will be reflected in the wage it commands. In the minds of most people today, this means that musicians (who are considered to have an especially agreeable profession) will accept less in wages than they would in, say, the steel mill.¹⁰ And indeed, as David Throsby

¹⁰ This intuition did not always follow. Ironically, Adam Smith, who first introduced the concept of compensating wage differentials in *The Wealth of Nations* [1970 (1776)], held that the inherent disreputability of the music business should elicit a positive differential in order to bring people *into* the profession:

“There are some very agreeable and beautiful talents of which the possession commands a certain sort of admiration; but of which the exercise for the sake of gain is considered, whether from reason or prejudice, as a sort of public prostitution. The pecuniary recompense, therefore, of those who exercise them in this manner must be sufficient, not only to pay for the time, labour and expense of acquiring the talents, but for the discredit which attends the employment of them as a means of subsistence. The exorbitant rewards of players, opera-singers, opera-dancers, etc., are founded on these two principles” [1970, 209].

[1994] notes, in 1990 the average full-time artist in the U.S. earned only a bit more than 80 percent of the average salary of managerial and professional workers (a group broadly comparable in terms of educational attainment). Cost disease theory merely states that if the non-arts wage were to rise *beyond* the level that takes into account the nonpecuniary compensation, without wage adjustment arts firms would begin to lose workers.

Baumol and Bowen's explanation for the cause of cost disease is not uncontested, as the following section will make clear. However, it is worth noting that for the purposes at hand, the underlying *cause* of cost disease may be less important than the fact that studies on arts firms suggest that the financial symptoms it describes are present. For example, *The Wolf Report* noted that in the 20-year period ending in 1991, the average symphony orchestra in the United States saw its shortfall in revenues to cover costs rise by 150 percent after inflation.

Irrespective of origin, the financial conditions characterizing cost disease (if left unremedied on the demand side) will have one or more of three effects. First, if the arts firm artificially holds down wages—that is, doesn't let them rise in line with wage increases in the economy at large, as noted above it will be starved of its labor supply. Second, if it allows wages to rise to market-clearing levels, it will see a constantly rising output price and falling employment level (the firm will shrink away).¹¹ Third, it will be increasingly reliant on productivity improvements (if possible) or subsidies for its survival. Each of these possibilities will be explored below. To solidify the microeconomics that underlie this discussion, a simple model of cost disease is presented in Appendix

¹¹ Baumol [1973] has also noted that cost disease can affect the demand side, in that as wages rise, the opportunity cost of concert attendance rises as well, which will decrease demand, *ceteris paribus*. This is an adaptation of the "Linder Theorem" (see Staffan Linder [1970]).

1. This model illustrates how productivity increases in the manufacturing sector could result in permanently higher wages for the economy as a whole as well as a higher output price for arts firm.

Problems with Cost Disease Theory

As has been noted, anecdotes and data tell us that (for whatever reason) many arts firms are finding themselves in worsening financial shape with respect to revenues versus costs. Is cost disease a satisfying economic explanation for these problems? As attractive and believable as the theory is, it does have a number of problems that are difficult to explain away.

Has there been productivity growth in the arts?

To begin with, perhaps the most problematic assumption made by the theory is that about labor's relative lack of productivity growth in the arts.¹² This can be illustrated by using the example of symphony orchestras. First, it takes very little imagination for one to observe that acoustical advances could have an impact on the orchestra's labor productivity. And indeed, the *Wolf Report* notes that orchestras in 1991 served about 1,500 people per performance, whereas the number was only 1,200 ten years earlier. This represents average annual growth (in capacity) of about 2.3 percent per year. Coupled with other sources of growth for labor productivity (discussed below), it is conceivable that in fact productivity has actually grown *faster* for orchestras than the economy at large (which, over the same period, grew on average by about 1.8 percent per year during the first half of this decade¹³). On the other hand, this might be an aberration, and thus only a short-term solution: While this growth in capacity is

¹² The subject of productivity adjustments for the purpose of combating cost disease has a literature that examines the topic in great depth. See, for example, Allan Peacock, et al [1982] and Samuel Schwarz [1986].

¹³ Source: 1997 *Economic Report of the President*.

substantial, there is ample reason to believe that the average annual rate of increase for orchestras it represents is about as high as it will likely ever be (or has ever been), and hence cannot be counted on indefinitely.¹⁴

Productivity growth could also be imagined via the use of electronic reproduction (CDs and video, most notably). And in fact, some arts firms have undoubtedly successfully exploited this avenue. However, there is a good reason why this remedy—mass electronic dissemination (as well as that in the last paragraph, ever-larger concert halls)—might not be effective even in the short run for the vast majority of arts firms: For most arts firms, consumer behavior itself probably tends to render such remedies futile. For example, only a small handful of orchestras can actually sell enough records to constitute an advance in labor productivity (in spite of being a fine ensemble, for example, it's very unlikely that a regional orchestra could ever earn back its recording costs in sales);¹⁵ this is known in economics as a "superstar" market.¹⁶ And frankly, for most orchestras, the problem isn't a hall that is too small—it's getting people into the seats that currently sit empty (more on this in a moment).^{17,18}

¹⁴ How long might an orchestra be able to maintain productivity growth at 2.3 percent simply by increasing the size of the concert hall? If one were to say somewhat arbitrarily that the upper limit on orchestra hall size is 3,000 seats (which is already far too large in the opinion of many), the limit would be reached in about the year 2020. It's also notable that this rate cannot have been enjoyed for very many years up to this point, either, since would imply that 100 years ago orchestras were performing for capacities little greater than the size of the orchestras themselves.

¹⁵ An exception to this would be a regional orchestra that connects with an independent discount recording company such as *Naxos* and records for a flat (and generally relatively low) fee. In this country, however, unions and some legal institutions prevent this sort of arrangement for most regional orchestras.

¹⁶ Frank and Cook describe this phenomenon very accessibly in their recent book [1996].

¹⁷ The Orchestra Manager of regional symphony recently told me that the problem for his orchestra is so bad that they are in real need of a much *smaller* hall than their current 2,000 seat home. The feeling is that empty seats have a negative impact on both the orchestra and the public.

¹⁸ These points require clarification in terms of separating the supply-side from the demand-side arguments; this is done in the next two chapters in considerable detail.

Finally, in the performing arts, productivity growth might occur through reductions in rehearsal time, either due to better artists or less-demanding programming. Both arguments that this has in fact been the case are quite common, and in general are reasonably compelling. There is considerable anecdotal evidence that orchestras, theater companies, and museums are ever-less willing to program outside of the well-worn favorites (see Norman Lebrecht's argument described earlier, for instance), and that artistic standards have generally been bid up by the growing numbers of aspirants to positions in arts firms. But has rehearsal time actually fallen? Taking the case of orchestras, there seems to be no evidence of fewer hours worked by the players, so less rehearsal time would likely actually be a by-product of a heavier concert schedule (as performances crowd out rehearsals). The data on 253 U.S. orchestras in the *Wolf Report*, however, show that over the 8 years ending in 1991, on average there has been no significant increase in concerts per season.¹⁹ An intuitive case could also be made against the inherent effectiveness of such a strategy by pointing out that the "standard repertoire" for most of the classical arts has been firmly in place for many years, and it would be very difficult to argue that artistic quality has so markedly improved in performing this repertoire over the last 50 years that, say, the New York Philharmonic can cut its rehearsal time in half without sacrificing technical and musical quality. In general, despite the arguments and counterarguments on this point, it is difficult to come to any hard conclusions. After all, artistic quality and relative adventurousness of programming are not variables well-suited to precise measurement.

¹⁹ This conclusion is reached after regressing the number of concerts per season (on average) for five different-sized groups of orchestras on a time trend, and finding an insignificant coefficient.

Why only now?

A second criticism of cost disease theory stems from the observation that cost disease has only seemed to present problems relatively recently. In other words, the arts have been around for a long time, as have been fast productivity improvements in many (non-arts) sectors of the economy—so if absent productivity growth is what ails arts firms, why hasn't it wrecked the industry long since?

A common answer to this criticism begins by pointing out that cost disease tends only to manifest itself under market circumstances: If trade in the arts takes place outside of the realm of reasonably free markets, there might likely not exist the kinds of signals to participants that would encourage them to act as the theory predicts.²⁰ For example, if wages don't move freely in the economy, then cost pressures in this area might not develop. And if revenues to arts firms don't reflect the preferences of market participants (for instance, if they come from government subsidies), then they may rise as much or more than costs even in the presence of a growing gap in the productivity of labor. Some people would contend that market circumstances that could indicate the presence of cost disease are a relatively recent phenomenon; that probably only in this century have a significant portion of arts firms been directly exposed to market signals as opposed to being purely the product of a patronage system or the public sector.

²⁰ This is not always the case, however. Many European orchestras are pure public firms and receive revenues not in accordance with ticket sales but rather in line with transfers decided upon by politicians. While the market signals are distorted, the underlying market exigencies can put pressure on the funding governments which themselves have to pay ever-higher wages to retain an artistically-competitive arts sector. This can and has led to parts of this sector being completely defunded. Some municipalities in Spain, for example, have been notorious for starting symphony orchestras, funding them for two or three years, and shutting them down when they become too expensive.

The trouble with this explanation is that it tends to ignore the fact that there are obvious examples in which popular market success in the arts is in fact *not* a modern phenomenon: Many artists from the 18th and 19th centuries became very famous and wealthy from selling tickets to their performances, as opposed to just enjoying court or church largesse: Telemann, Paganini, and Johann Strauss to name just a few. To claim that (for example) Pavarotti's success is a market phenomenon while Handel's was not does not seem consistent, especially when considering the abundant descriptions of the great box office achievements of the latter.²¹

A counter-counterargument points out, however, that the artists mentioned above were true superstars of their respective eras, and that they might not faithfully represent the economic circumstances or possibilities of the vast majority of artists of their time. In the end, this is a question concerning the facts of economic history, and will not be settled here. However, a point has been made along the way that bears stating more explicitly: The arts tend very often to function in superstar markets. Frequently, a large section of the business is controlled by a disproportionately small number of firms and artists. When examining an income gap problem such as that which is the focus of this research, for accuracy it is crucial to distinguish between the superstars and all the rest. For the discussion at hand, this means that it is important not to be blinded to the possibility of cost disease for the Tulsa Philharmonic by the commercial success of the Vienna Philharmonic.

²¹ For example, an article in *The Dublin Journal* from March 15, 1743 described the success in London of Handel's oratorio *Samson*: "That Gentleman [Handel] is more esteemed now than ever. The new Oratorio has been performed four Times to more crowded Audiences than ever were seen; more People being turned away for Want of Room each Night than hath been at the Italian Opera." See <http://www.voicenet.com/~hohmann/handel/documents.html>.

I have presented a number of troubling criticisms of cost disease theory here, which emphasize the fact that the theoretical validity of this explanation for arts firms' financial woes is unsettled. Not surprisingly, the empirical evidence is mixed as well. Throsby [1994] sums this up after a review of the empirical studies to date on the theory: "These studies have generally pointed to production-side adjustments by performing companies over time and have found little evidence of differential rates of inflation in the performing arts compared with other sectors of the economy." On the other hand, as Erwin Tiongson [1997] notes in his survey of the literature, other studies have come to the opposite conclusion.²² Most notably, in recent articles, Baumol [1995, 1996] has reaffirmed the basic assumptions behind cost disease theory, based on arts firms' data.

It is only really fair to state that the verdict on cost disease theory is not yet in. But for the purposes of this research, it doesn't particularly matter: Evidence exists that arts firms are experiencing financial pain, for whatever reason; this pain—the symptoms of cost disease—are in fact more important than the source of the disease for the policy analysis to be undertaken in the next few chapters. Thus, from here on, when I speak of "cost disease" I will be doing so merely as a matter of convenience and in reference only to the phenomenon of costs rising relative to revenues. And as is common in the cultural economics literature, I will use the term interchangeably with "income gap."

Remedies

We now turn to potential solutions to the problem at hand, which are the heart of this research. These solutions can be separated into those that depend on

²² For example, see Marianne Felton [1994].

the actions of firms or governments (supply-side solutions),²³ and those that proceed from consumer behavior (demand-side solutions). Barring technological advances, a supply-side remedy to cost disease that might be considered is that of increasing the (marginal) value of the product of labor for orchestras by simply using less labor: decreasing the scale of operations until the firm is once again at the point where marginal cost equals marginal revenue after a wage increase. Microeconomic theory predicts that this will tend to occur naturally, as is illustrated in the simple model in Appendix 1. However, it can be shown that certain institutional rigidities in the arts industry as well as the nature of the product of these firms makes this movement nonautomatic and perhaps not even helpful. This point, which has not been discussed to date in the economics literature on arts firms, is explained and elaborated on in detail in the fourth chapter.

Another traditional remedy to cost disease has involved public funding: Since costs are rising more than revenues, government subsidies can pick up the slack. The trouble with this is that, given cost disease as theoretically described, this gap should continually widen over time, meaning that subsidies also would have to grow monotonically. Whether this is indeed the case is a subject of debate among economists,²⁴ but there is one thing one can be confident of: The amount of money needed to fill the gap isn't likely to *shrink* over time, all other things remaining constant. And at present we're hardly experiencing a renaissance of government capacity and willingness to provide this kind of social spending. Consequently, this is not a remedy arts administrators can comfortably count on into the future.

²³ In later chapters, government funding will also be considered on the demand side.

²⁴ This debate is discussed in detail in Throsby [1994].

The discussion here does not pretend to address comprehensively the role of the public sector, nor is the preceding paragraph intended to dismiss its importance in the provision of the arts. As mentioned earlier, how the public sector fits into many of these issues is the subject of the concluding chapter of this research, which explicitly considers the positive and normative questions surrounding government arts subsidies.

If technological and government solutions won't work to keep most arts firms running at a desired scale of operations, is there any other solution? It has been suggested indirectly to this point that for the non-superstar arts firms, technological (supply-side) solutions tend to be defeated by *insufficient demand*: An obscure orchestra can increase the potential dissemination of its product by recording a CD, but this dissemination won't occur because nobody will buy the CD. It makes sense, then, that increased public demand for the arts could help relieve the problem. Greater demand increases revenues, and might ultimately drive up product prices.²⁵ Another demand-side modification of potential benefit is that of increasing the income elasticity or decreasing the price elasticity of the arts, such that increases in demand have their greatest effect on price and quantity, and cost increases can be passed to consumers without ill effects to the firm.

Unfortunately, accomplishing increased demand (and/or changing price and income elasticities) is easier said than done. After all, solutions (on the demand side) to the cost disease problem have not been ignored by arts firms, as (for example) the recent preoccupation with marketing in the orchestra industry attests to. The problem for most firms has been a lack of results. However, I

²⁵ And in the orchestra's case, the cost of filling currently empty seats in the hall is negligible.

believe and will argue in the next two chapters that demand-management failure is not inevitable; rather, demand manipulation simply needs to be pursued appropriately.²⁶

Following these chapters on the theory and empirical issues surrounding demand stimulation, in chapter four (as mentioned above) I will explore a labor cost-defraying strategy in an attempt to fight the income gap from the cost side (instead of the revenue side) of the problem. In chapter five, I turn to the subject of the compatibility of different sources of revenue at an arts firm's disposal. Chapter six collects and discusses the implications in the preceding analysis for public arts policy. Finally, chapter seven briefly summarizes the major conclusions reached in this dissertation.

²⁶ Note that this is a microeconomic (single-market or single-firm) use of the term "demand management," as contrasted with its use in Keynesian macroeconomics in reference to aggregate demand in the economy.

2. TOWARD A DEMAND-SIDE CURE FOR COST DISEASE IN THE PERFORMING ARTS

Introduction

The purpose of this chapter is to begin to examine how the financial problems of cost disease might be solved on the demand side. How can consumer demand for the arts be stimulated such that revenues are increased relative to costs? I will begin this task in a rather abstract framework: My purpose here is not to describe in exhaustive detail the actual experience of attending an arts event or the entire set of motives for attendance; rather, it is to build the foundation of an analytic framework into these issues which affect demand for the arts. Once stylized models of people's consumption of the arts are constructed and analyzed, the restrictive assumptions about behavior can be relaxed and greater realism about the event can be injected. These later steps take place in subsequent chapters.

While this chapter is limited to the performing arts industry, it should be noted that the issue of cost disease has been extended by Baumol [1989; 611-615, for example] to the services sector in general. Thus, the conclusions reached here may be useful in a more general setting.

The next section describes the general mechanics by which demand can be changed, while the following two sections explore "Veblenian" and "Marshallian" methods for doing so. The fifth section examines approaches to demand modification currently in use in the United States and Europe. Finally, the last section draws conclusions from the preceding analysis.

Mitigating Forces

As noted in the last chapter, if demand for the performing arts is assumed constant, there will be an eventual loss of the labor force, or increasing subsidies will be required to cover a growing wage bill. This will be the case if costs are not allowed to rise (because wages are kept artificially low); rising relative output prices coupled with lower employment will result if rising costs are passed on. If demand is no longer held constant, all of these results need not necessarily obtain: Demand increases, if sufficiently large, could lead to increases in revenue that match or even exceed the increased costs.

The three most likely ways that demand for the performing arts could increase would involve increasing the number of consumers, increasing “taste” for the performing arts, and increasing consumer incomes. The way in which an increased number of consumers or a greater taste for the performing arts would affect demand is through outward shifts in the demand curve. The effect that increased consumer incomes would have over the demand for the performing arts depends on the income elasticity of demand for the arts: the percentage change in consumer demand resulting from a 1 percent change in income.¹ A reasonable guess is that the magnitude of this coefficient is somewhere above unity, since the performing arts could hardly be construed to be a necessity by very many. That is, the performing arts being a “luxury” service, a certain percentage change in income should lead to an even larger percentage change in consumer demand. However, as both Glenn Withers [1980, 735–742] and David Throsby [1994, 1–29] point out, enjoyment of the performing arts is time-intensive. This means that increasing demand stimulated by rising incomes might be diminished to some extent if the opportunity cost of leisure increases.

¹ I am assuming, naturally, that the performing arts are not an inferior good, as is perfectly reasonable.

Whereas a “pure” income effect is probably above unity, that which is actually seen econometrically might not be.² Strictly speaking, however, for there to be beneficial effect it only has to be positive.

Although it does not cause changes in demand, another factor that should be mentioned that could mitigate the ill effects of cost disease is relative price inelasticity: changes in price have relatively little effect on quantity demanded. If the price elasticity of demand for the performing arts is low, then wage increases can occur and be passed on without much shrinkage of the sector.³ While the price elasticities of demand for different parts of the performing arts sector have generally been estimated to be less than unity in absolute terms (Withers [1980] found it to be about -0.65, while T.G. Moore [1966, 79–87] estimated it at -0.63), it would still be beneficial to firms that this elasticity be somehow minimized (in absolute terms). How this can be done is addressed in the next section.

A “Veblenian” Approach

As noted, one approach to the problem of cost disease involves an increase in demand via increases in consumers of the performing arts and greater expenditure through increased amounts of rising income spent on the arts. Specifically, the industry should find some way to portray its product as an attractive, desirable luxury for those who might not currently see it as such, which in addition to bringing in additional consumers, would also increase the income elasticity of demand for the performing arts. New demand would be stimulated, and subsequent income increases would have their greatest effect.

² Indeed, Withers calculated this coefficient to be just about exactly 1.

³ In the case that the performing arts were a Giffen good (so that the demand curve were upwardly sloping), a rise in the wage rate (and the resulting shift in the supply curve for the performing arts) would actually increase output and employment. As will be made plain in the next section, this would be an extreme “Veblenian” case.

What tactics might be used? A reading of Thorstein Veblen's *The Theory of the Leisure Class* [1899] suggests the enhancement of certain characteristics that the performing arts possess in abundance. In two famous passages, Veblen alludes to the particular qualities which a luxury good should have:

"Conspicuous consumption of valuable goods is a means of reputability to the gentleman of leisure" [1899, 75].

"The point of material difference between machine-made goods and the hand-wrought goods which serve the same purposes is, ordinarily, that the former serve their primary purpose more adequately ... This does not save them from disesteem and depreciation, for they fall short under the test of honorific waste. Hand labor is a more wasteful method of production; hence the goods turned out by this method are more serviceable for the purpose of pecuniary reputability ... Commonly, if not invariably, the honorific marks of hand labour are certain imperfections and irregularities in the lines of the hand-wrought article, showing where the workman has fallen short in the execution of the design" [1899, 159].

Clearly, live performances can be conspicuously consumed in public; therefore, they possess the first quality. And a live performance being a truly handmade good, they exhibit the second quality as well. This second quality, as Veblen suggests, conveys pecuniary reputability based on a comparison of the consumption of its machine-wrought (and cheaper) analog: in this case, a recorded performance. The importance of this will be discussed in more detail in a moment.

How would Veblen suggest we maximize the luxury status of such an ideal luxury good as the performing arts?

"The canon of reputability, then, must adapt itself to the economic circumstances, the traditions, and the spiritual maturity of the particular class whose scheme of life it is to regulate. It is especially to be noted that however high its authority and however true to the fundamental requirements of reputability it may have been at its inception, a specific formal observance can under no circumstances

maintain itself in force if with the lapse of time or on its transmission to a lower pecuniary class it is found to run counter to the ultimate ground of decency among civilised peoples, namely, serviceability for the purpose of invidious comparison in pecuniary success" [1899, 105].

This is to say that performing arts firms should associate the consumption of their product as much as possible with the upper classes, so that their enjoyment is seen as a mark of membership. As one rises in pecuniary rank, or more importantly, as one wants to be seen as inhabiting the social sphere of those who occupy high rank, he or she will be more and more likely to indulge in an appropriate diversion such as a live concert of "good" music. In this way, people of all ranks with disposable income will be drawn to spending it on the arts, and subsequent increases in their real aggregate income will result in disproportionate increases in the quantity demanded of the performing arts.

At the risk of laboring the point, it is important to stress that this "Veblenian" approach is not exclusively or even primarily directed at upper income groups. Rather, it is directed at all who emulate those above them in pecuniary status. Whom would this include? Practically everyone, according to Veblen: He notes that "... our standard of decency in expenditure, as in other ends of emulation, is set by the usage of those next above us in reputability . . ." [1899, 104]. Further,

"...in any community where conspicuous consumption is an element of the scheme of life, an increase in an individual's ability to pay is likely to take the form of an expenditure for some accredited line of conspicuous consumption" [1899, 110].

In other words, the Veblenian approach should be effective (to the extent that the luxury appeal of the performing arts is recognized) across all classes above that of bare subsistence.

In addition to creating luxury status for the performing arts and increasing income elasticity, minimizing price elasticity is also beneficial to performing arts firms. The second quotation above [1899, 159] gives a clue as to how this might be achieved: The relative price elasticity of demand for a good depends, among other things, on the availability and quality of substitutes for the good. Thus, if live performances are found to have inadequate substitutes, their demand should be relatively inelastic. The objective, then, should be to debase the closest substitutes, or at least increase the distinction between the purpose they serve and that of live performances.

Why do many people attend a live concert by a local symphony orchestra instead of purchasing a compact disc of the same music performed by, say, the Chicago Symphony? In spite of the fact that the latter performance is (almost) sure to be technically better and can afford countless listenings for less than the price of admission to the concert, a lot of people prefer the former. The missed notes and less than top-notch interpretation provide a “human element,” while the performance’s being an induplicable event adds to the singularity of the experience. And this consumption represents a highly visible display of refined taste. In Veblenian vernacular, the compact disc, in that it is not hand-wrought, is not sufficiently wasteful and thus is inferior to the live concert from the point of view of the “connoisseur.” The key to a steep demand curve for concerts is to exploit this difference.⁴

A “Marshallian” Approach

Another way to increase the demand for the performing arts (discussed in the second section) also involves an increase in consumers but by a subtly yet

⁴ Of course, the Chicago Symphony might not gain from this tactic. However, as Sherwin Rosen’s [1981, 845–858] “superstar” model predicts, the vast majority of other orchestras would.

importantly different approach. Instead of increasing the number who view the performing arts as a desirable product for the sake of pecuniary emulation, imagine that we were to increase the number who consumed only for the direct enjoyment that consumption would bring, irrespective of the consumption's impact on social status.

Could this goal be pursued simultaneously with that behind the Veblenian approach? Yes and no: only to the extent that the pursuit of these new consumers (or the very presence of such consumers) does not degrade the elite image of the product.⁵ Generally, the perception that the enjoyment of the performing arts is fit for the unwashed masses will damage its status as a luxury of the leisure class. To concentrate on the sheer number of class-unconscious consumers implies a very different focus from that of the previous section, therefore; as primary goals, it could be argued that the two are not particularly compatible.

Suppose we decide that maximizing the number of "pure" consumers is what we want to do, even to the exclusion of the Veblenian goal. We would probably start by simply exposing the performing arts to the greatest number of people possible. What makes us think that people who currently have no appetite for the performing arts will develop one if we can just find a way to get a performance in front of them? Alfred Marshall provides a possible answer to this question in *Principles*, Book III [1938],:

"It is therefore no exception to the law [of diminishing marginal utility] that the more good music a man hears, the stronger his taste

⁵ It has been pointed out that orchestras can and do increase the range of their audiences and still maintain their elite status through mechanisms such as separate seating and price discrimination. However, this can be effective only to a point: If the general seating of a concert hall were filled with, say, schoolchildren, it's not likely that too many people would pay high prices to be seen in the box seats. The point is that it matters who is seeing to those being seen.

for it is likely to become; that avarice and ambition are often insatiable; or that the virtue of cleanliness and the vice of drunkenness alike grow on what they feed upon" [1938, 94].

That is, people will get "hooked" on the performing arts and have demand curves that shift outward over time. The Marshallian approach says that initial exposure of uninitiated consumers should start self-sustaining increases in demand.

Self-sustaining increases in demand for "acquired tastes" can also be explained while assuming that tastes do not shift, as has been done in papers by (among others) George Stigler and Gary Becker [1977, 76–90], Laurence Innaccone [1986, 95–99], and Becker and Kevin Murphy [1988, 675–700], which develop or employ the theory of rational addiction. Greater exposure to music will raise its marginal utility by increasing the level of "human capital" (which is necessary for its appreciation). Listeners become more "efficient" at "producing" the enjoyment of music. And as the marginal utility of music rises, more of it will be demanded in order to bring consumers back into equilibrium. The only virtue of this approach is that it allows retention of the assumption that preferences are stable over time.

The Approaches In Use

The Veblenian approach to increasing demand centers on the enhancement of the status of the performing arts as a luxury fit for the upper classes and thus desired by those who would emulate them. Care must be taken that the arts not be popularized in such a way that they become a "vulgar" pleasure. In contrast, the Marshallian approach strives for maximum popularity in a class-free way—the point being simply to achieve the greatest possible exposure. The difference between the approaches is quite profound.

How do we see the approaches used? In order to answer this question, it is important to delineate between the approach of those who direct public performing arts policy and those on the front lines, i.e., the managements of individual performing arts firms. The approach of the latter is probably best described as a mixed strategy. On the one hand, the “champagne reception” (generally for wealthy patrons) is ubiquitous and might indicate the cultivation of an upper-class image. As well, development directors of arts nonprofits generally gear their efforts toward the generation of elite philanthropy.⁶ On the other hand, it is clear that many recent attempts have been made to make the arts generally more (socially and economically) accessible to the public, most likely in the hopes of starting the sort of self-sustaining demand increases described earlier. These attempts include performances in alternative venues (such as parks) and those with particular themes (pops concerts, for example).⁷ Additionally, children’s performances are very common, which presumably serve a Marshallian investment function: Some of the children exposed to great art now will be season subscribers in twenty years.

As for public performing arts policy, if we accept for the moment the National Endowment for the Arts as the collective voice of the former, their desired approach is quite clear and less mixed, as is reflected in the following excerpt from the NEA’s Five-Year Planning Document 1986–1990:

⁶ See Francie Ostrower [1995].

⁷ A related audience-enhancing technique has involved trying to give the audience non-aesthetic motives to attend. This is harder to classify as a uniformly Marshallian phenomenon, however, since non-aesthetic reasons for attending a performance are precisely behind my description of the Veblenian approach. This brings up a point that will be developed in the concluding section of this chapter: Motives for attendance are in real life much more complex and mixed than the dichotomy in this simple organizing framework, which is intended as a model for understanding the extremes in these motives.

"Our Mission Statement directs Endowment activities to:

- Increase the performance, exhibition, and transmission of art to all people throughout the nation.
- Deepen understanding and appreciation of the arts among all people nationwide" [1984, 13–14].

Whether or not this Marshallian approach has been successful is less than clear, however, as the following passage (from the same document) says:

"The Endowment has done a great deal over the years to help artists and art institutions; we have done much less specifically to assist the process of reaching new audiences . . . we have not yet developed comprehensive strategies to broaden audiences geographically and demographically" [1984, 33].

Why might the NEA have had less than perfect success in its attempts to expose the (performing) arts as widely as possible? Perhaps because the individual performing arts firms, even those that rely somewhat on NEA funding, may to a certain extent be employing a Veblenian approach which is at odds with the NEA's Marshallian efforts. This is an empirical issue which is at least partly resolved in the next chapter.

A natural question at this point in the discussion is whether it is possible that that which firms seek to reap from their Veblenian serenade of the class-conscious is patronage and not "earned" income. If the answer were "yes," then any analysis of the demand side would require a definition of product that is much broader than that used in this chapter. The answer to this question can be sought by looking at the percentage of performing arts firms' incomes that comes from ticket revenues (as opposed to generated via private donations). D. Mark Davidson Schuster [1985, 65], in a comparative study of eight orchestras in different countries, found that earned income amounted to nearly 80 percent of the American orchestra's total operating income, while private and public

donations made up less than 20 percent, and thus the narrow definition of product employed here might be satisfactory for the purpose of the models just introduced. However, in an empirical analysis of these ideas, for precision, an expanded definition of product is indeed indicated. The next chapter, in so doing, will begin to make much finer distinctions in demand management strategy than just the private-public dichotomy presented here.

Schuster compares support for the arts in the United States with that in several other countries and so allows comparative examination of how cost disease is dealt with in other countries. He reports that the average percentage of operating income that was provided by the government for five continental European orchestras⁸ was about 73 percent, while average earned income was only about 25 percent.⁹ To the extent that these orchestras are representative, European performing arts firms are not, for better or for worse, obligated to concern themselves with the demand for their product. Rather, cost disease would appear to be routinely remedied on the supply side by way of public subsidies.¹⁰

Conclusions and Unanswered Questions

If we believe (at least for the moment) that a Marshallian approach to increasing demand exists at the public level while a Veblenian one is used to some extent at the firm level (in the United States), what may we conclude? There are two basic possibilities: Either the Veblenian approach is, in some cases, superior in terms of its effects on demand, or the Marshallian approach involves

⁸ The orchestras were in Italy, Sweden, France, Holland, and (West) Germany.

⁹ It might be interesting to note that in Great Britain, earned income was substantially higher than this average (53 percent), while public support was somewhat lower (39 percent).

¹⁰ Many European performing arts firms are notorious for neglecting the demand side in a way that is actually to their own detriment: tickets are often so underpriced that nonprice rationing is the norm, even for performances by those other than "superstars." This underpricing is generally defended, as might be expected, on non-economic grounds.

appropriation problems such that private firms have no incentive to adopt it, even if it is indeed the superior of the two. This second possibility is a common rationale for public subsidization of the production and consumption of the arts; it is addressed in considerable detail in the concluding chapter.

If we assume that the market for the performing arts functions reasonably well, we might conclude that reliance on the Veblenian approach is the result of firms acting rationally according to what they know about the nature of their product as well as the nature of consumers: Aiming promotion in such a way that the performing arts are perceived by the masses as a luxury good fit for the elites as opposed to one to be more “purely” enjoyed, yields the greatest possible increases in the demand for the product both individually and collectively. This being the case, the only reason that the NEA would take an exclusively Marshallian approach would be because its logic is uncontaminated by commercial signals—its policies are dictated by nonpecuniary forces.¹¹

On the other hand, we might view broad exposure in the same way that we often do research and development: Because the benefits are difficult to appropriate completely, it will tend to be underprovided at the unit level. Assume that while an orchestra can individually reap the demand benefits of making its product seem luxurious, exposing the public widely (as is done through children’s concerts) is an investment whose return will accrue to all firms but not sufficiently to the investing firm individually to make it seem worthwhile. If the total benefits to all exceed the costs to the investor, then the investment will properly be undertaken by the public sector. The prescription here therefore would be for continued (possibly expanded) government involvement in the performing arts.

¹¹ These forces take the form of the opinions of politicians and public arts administrators.

In this chapter, I have not tried to settle conclusively which of the two approaches is “best.” Before testing these ideas in the next chapter, my intuition would lead me to suspect that the Veblenian approach would be the superior of the two for expanding demand for many arts firms, if for no other reason than my belief in their tendency to engage in behavior that is self-serving, as well as a healthy skepticism about the market failure scenario described in the preceding paragraph.¹² That is, it seems likely to me that performing arts firms are likely maximizing their profits (or other benefits) in the absence of overwhelming market distortions.

The reader should keep in mind that the Veblenian argument put forth here is not intended as a normative prescription for the “proper” pursuit of the exposure of society to the arts. However, it is worth pointing out that to the extent to which one feels that society’s cultural welfare is greater when consumers spend their income on (to corrupt shamelessly the words of Jeremy Bentham) poetry as opposed to solid-gold pushpins, a purely Veblenian regime of arts dissemination might not be such a terrible thing, accomplishing many overlapping cultural goals with a more Marshallian approach.

In conclusion: As I mentioned at the outset, cost disease can be combated in a number of ways. The demand side has not, however, been viewed very schematically with an eye to this purpose. Rather, the greatest amount of energy from economists for “saving the arts” has been devoted to public finance.

I have attempted here to begin building a careful framework for demand-side analysis by labeling the demand-side approaches that are in use. However, a number of questions remained unanswered by this discussion, many of which

¹² This skepticism is largely rooted in number of recent discussions on this topic; for example, see Christopher Lingle [1992, 21–30]. These arguments are covered in the last chapter.

motivate the subsequent parts of this dissertation, others of which are addressed in other places or remain unanswered (for the moment). First of all, it has been asked whether this “ideal types” approach to demand for the arts doesn’t result in a naive and overly-restrictive description of the richness of the consumer’s experience of a performance. This is precisely the criticism leveled by Paul Diesing [1997] against this chapter in which he says, “The whole demand-side individual consumption-of-utilities theorizing that Brooks assumes is narrow and misleading.” It is true that an ideal types approach does not capture all of the complexities involved in real life, but that isn’t the purpose of this (or any other) model. My response [Brooks 1997c] points this out, and refers to subsequent work (most of which is also contained in the next chapter of this thesis) which addresses some of these complexities. Specifically, the next chapter (as mentioned above) begins a more careful description of the experience of attending a performance than that laid out here, and hence begins to construct a more detailed taxonomy of demand.

It is worth noting that my model here is not the only formulation of the essential behavior under study (mass versus elite audience stimulation). For example, some of the spirit of the Veblenian/Marshallian dichotomy might be described within a framework (that is arguably purely Marshallian) in which audiences are targeted either as consumers who attend performances once or twice (by performing “top-40” classics, for example), as opposed to becoming part of a hard core of subscribers (through varied, challenging programming). While the underlying social phenomena at play might not be precisely equivalent to those discussed in this chapter, it is an alternative way of looking at possible tradeoffs that would impact demand. Such a formulation of the model could be considered a substitute or a complement to that in this chapter; the point is that

my method here is not presented as a unique description of the repertoire of demand management possibilities.

A related point concerns the degree of “granularity” in the model presented here: I have broken consumers up along just Marshallian and Veblenian lines; however, one might argue that further partitioning would be beneficial (since, as been discussed, the true audience experience is very complex, almost certainly encompassing both Marshallian and Veblenian elements). As an example, such a partitioning might be made with respect to income or wealth. As Veblen himself states repeatedly in *The Theory of the Leisure Class*, there is an important distinction between the wealthy and those (the rest of us) who would emulate them in taste and habits. Thus, we can imagine categories of consumers whose motives are mixed along Marshallian and Veblenian lines with regard to their pecuniary status.

A second question unanswered in this discussion concerns the distinction between demand- and supply-side influences in arts markets. For example, government funding can be treated in either way: Traditionally, a government subsidy would be modeled on the supply-side as an influence lowering the supply (marginal cost) curve. However, if an intangible good (such as the cultural benefit to society from the production and consumption the arts) is defined, then state subsidies can be seen as in one sense defining a societal demand for that service. State subsidies are treated in both ways herein. When the product of arts firms is narrowly-defined for convenience (in this chapter, for example), subsidies are considered on the supply side; when a broader definition of the product is used, encompassing the intangible products as in the next chapter, subsidies are considered on the demand side. This difference presents no analytic difficulties.

Third, one might ask how well the approaches in the first essay stand up to statistical testing: Which in fact is in use? Further, is it possible to identify any ways of implementing an approach if it is found to be the preferred one? These empirical questions are what we turn to next.

3. IMPROVING THE ORCHESTRA'S REVENUE POSITION: PRACTICAL TACTICS AND GENERAL STRATEGIES^{*}

"Give me six women, a bag of cookies and a box of tea and
you'll have your symphony orchestra."

*Samuel R. Rosenbaum*¹

Introduction

In the first and second chapters, four important points have been made. First, cost disease (or at least the symptoms associated with it) seems to be a problem for performing arts firms. Second, this can be combated on either the supply or demand sides. Third, most energy has been devoted to date to the supply side of the problem. And fourth, the demand side in theory holds real (fairly untapped) promise. The last chapter began a discussion of possible demand-side approaches; however, it remains to look at these approaches empirically, as will be done here.

The purpose here is broader than just that, however. Specifically, four questions will be asked and answered. I begin by backing up and asking empirically whether arts firms, specifically orchestras in the case at hand, are capable of affecting in any real way the behavior of consumers toward their product. The answer to this question is *not* self-evident to many orchestra industry practitioners, and thus needs to be dealt with at the outset.² Second, assuming that the answer to the first question is yes, I ask whether any specific

^{*}This chapter loosely follows the paper (Brooks [1997d]) of the same name. An earlier version was presented at the Conference of Cultural Industries at New York University's Stern School of Business in May of 1997.

¹ Samuel Rosenbaum is a member of the Board of Directors of the Philadelphia Orchestra. He is quoted by John McLaugherty in the *Wolf Report*.

² During my years in an orchestra, I found the attitude quite common that audience-expanding tactics were largely an exercise in futility.

instruments can be identified for doing so. Third, more generally, what do these tactics suggest about the effectiveness of the Veblenian and Marshallian approaches described earlier? And finally, I ask whether and how these tactics and strategies vary in effectiveness based on an orchestra's individual characteristics?³

Increasing Demand for the Products of the Orchestra: Practical Tactics

Before continuing a discussion about "demand," it should be clarified what exactly is being demanded of orchestras by consumers. In the preceding chapter it sufficed to define demand very crudely: just in terms of the music performed. However, for reasons that will presently be made clear, it is necessary to develop more complete taxonomies of what this demand facing most orchestras (or any non-superstar arts firm for that matter) consists of. It has been argued that the orchestra produces three products jointly:⁴ one that is tangible (music, broadly defined), and two that are intangible. The intangible products are the private benefits (nonmaterial, most likely) that donors receive in exchange for their charitable philanthropy; and the cultural benefits that society receives from the production and consumption of the orchestra's music. Payment for each of these products can be measured in terms of (respectively) concert revenues, donated revenues, and public subsidies.⁵ Economic theory shows that an increase in the

³ Following common policy analysis parlance, "tactics" refer essentially to the means to address the symptoms of the problem at hand, and will be used interchangeably with "instruments" in upcoming discussion. "Strategies" are broader in scope, and seek to address underlying causes of the problem, and will be used interchangeably with "approaches".

⁴ See Brooks [1997a].

⁵ It should be noted that my treatment of the topic of public subsidies as a direct result of societal demand might appear to ignore a large and convincing literature on the disconnection between bureaucratic action and public will (See, for example, William Niskanen [1973]). In reality though, this treatment relies only on the contention that the magnitude of state subsidization of the arts in some positive way (however small) correlates with the public's perception of benefits from the arts. While not explicitly considered in this chapter, it's worth noting that private foundation donations probably also represent payment for the public good, strengthening the correlation between this good and "unearned" revenue.

demand for these products will stimulate orchestra revenues; increases in these revenues provide an indirect measure of success in expanding demand.⁶

To answer the first, most fundamental question of whether an orchestra can manipulate consumer behavior, one must consider instruments (or tactics) that might affect revenues. The instruments treated here are certainly not exhaustive; most notably, none of them would affect the number, type, or quality of concerts performed by the orchestra. While the presentation of more, different, or better concerts might affect consumers' decisions to attend more concerts or to act more philanthropically toward the orchestra, the principal impact of this tack would probably be on the nature of the products themselves (the *supply side* as opposed to the *demand side*). For this reason, these instruments are not considered explicitly here, although they are briefly discussed at the end of this chapter.⁷

Instead, expenditures an orchestra can control which impact the desirability of at least one of the orchestra's products and which only work through the actions of consumers will be examined. Specifically, three instruments can be identified that have an effect on the *information* about the products. Orchestras can expand demand by disseminating a reproduction of the tangible product—music—beyond its original audience (*expenditures on broadcasting/recording*) or by attempting to make the product more attractive and draw in new consumers (*expenditures on advertising and expenditures on fundraising*).

⁶ This is only true under certain circumstances; specifically, inferences about demand can only be made if product supply is constant. This fact explains the choice of instruments tested in upcoming sections. The microeconomics mechanics behind this assertion is the subject of Appendix 3.1.

⁷ The fundamental question to be answered is whether or not demand can be shifted. Unfortunately, demand for the intangible products would be practically impossible to measure. To gauge it indirectly, instruments are considered that would theoretically leave supply untouched and only affect revenue from the demand side. Since an increase in demand raises both price and quantity (given an upwardly-sloping supply curve), a finding that such an instrument raises revenue is indirect evidence that it has increased demand. This is described in considerably more detail in Appendix 2.

In the case of broadcasting and recording expenditures, it was suggested above that in the case of all but a handful of orchestras, radio and television broadcasting and record-making create an apparent net loss—there is no substantial market for these things. However, the story doesn't stop here. Broadcasting and recording can also function like publicity; they can raise the profile of the orchestra, making the consumption of its products more attractive for Veblenian reasons of status, in addition to playing the obvious Marshallian role of increased exposure to the music. Contrary to the opinion that the continuous proliferation of recordings of the "standards" is irrational or silly,⁸ *yet another* orchestra's unsellable recording of the Brahms symphonies might fit into a rational plan to increase its total ticket and donated revenues. Advertising should also have a positive effect on demand by informing new consumers of the orchestra's products. It might also increase demand by publicizing the prestige of attending (or donating to) the symphony. Fundraising should have influence similar to that of advertising, but in opposite strength. While fundraising may inform and bring in new concertgoers, its principal impact would probably be on the status of donors. This is simply because fundraising is generally not geared toward generating an audience.

To answer the first question (*Can demand be expanded by the orchestra?*), it's useful to find out whether changes in the instruments under consideration (expenditures on recording, advertising, and fundraising) have any positive effect on the three types of orchestra revenue. In addition, in answer to the second question, this information would indicate the relative effectiveness of

⁸ For example, the following quote is from a recent article in *The Economist* [1996] about national orchestral performance styles: "Even the recording industry is helping to dismantle national styles, which might otherwise provide some musical justification for their endless duplication of repertoire."

each instrument. Multiple regression analysis was used to measure the separate effects of certain variables (in this case, the three instruments) on another (total revenues). To use this technique, however, data on orchestras were needed.

The best and most detailed data for this purpose are collected by the American Symphony Orchestra League (ASOL). Each year, the ASOL sends out about 570 questionnaires called the "Season Orchestra Statistical Report Form" to member orchestras, and it typically receives around 220 responses. About 80 percent of larger orchestras respond. Data pertaining to the three instruments can be taken directly from this questionnaire; the following are the 1994–95 entries that correspond to each:

- Total broadcasting (radio and television) and recording expenses;
- Total development and fundraising expenses;
- Total advertising, promotion, and marketing expenses.

Not surprisingly, revenue measures can also be found in the questionnaire. Corresponding entries are:

- Total earned concert income;
- Total private support;
- Total tax-supported grants and allocations.

These data were collected in two ways. For a large number of orchestras, the original ASOL data were not accessible, although a data set of average values across five large groups of orchestras was readily available in the *Wolf Report*.

The groups were assembled as follows:

1. Orchestras with 1991 budgets of \$8.5 million to \$38.7 million;
2. Orchestras with 1991 budgets of \$5 million to \$8.5 million;
3. Orchestras with 1991 budgets of \$1.8 million to \$5 million;

4. Orchestras with 1991 budgets of \$.63 million to \$1.8 million;
5. Orchestras with 1991 budgets of up to \$630,000.

Values were given for the eight-year period 1984–91.⁹ The second data set was from 1983–94, for four major American orchestras (consisting of responses to the ASOL survey questions described). Each of these orchestras belonged to the largest budget category above.

I describe in detail technical difficulties presented by these data in Brooks [1997b]. Nevertheless, the data yielded some interesting results. Separate statistical tests were conducted for the largest orchestras (the four major orchestras and the top two *Wolf Report* groups) and the smallest ones (the three bottom *Wolf Report* groups). Test results are presented in the Table 3.1. For large orchestras as well as for small ones, the number in each cell corresponds to the total effect on profits resulting from investing an additional dollar on each of the three instruments.¹⁰

Unambiguously, this table answers three of the questions posed at the outset of this article. First, orchestras clearly *can* affect the behavior of consumers, according to three examples in the table. Second, these specific instruments can be very effective for increasing demand (and therefore increasing revenues relative to costs). And third, this effectiveness depends strongly on the orchestra's size.

In this analysis, many factors were held constant to gauge the impact of the instruments on revenues as accurately as possible. It can be stated with reasonable confidence that a dollar spent on recording or advertising by large

⁹ Inflation was corrected for using the Consumer Price Index.

¹⁰ Use of the word "profits" is unrelated to the fact that the vast majority of orchestras are nonprofits. Rather, a change in profit here simply refers to extra revenue earned as a result of an expenditure, minus that expenditure.

Table 3.1. Average Effects on Profit from Spending \$1 on Each Demand-Expansion Instrument

Instrument	Average Change in Profit (Large Orchestra)	Average Change in Profit (Small Orchestra)
Recording/ broadcasting	16.07	-2.60
Fundraising/ Development	-1.74	5.45
Advertising	20.66	-4.89

Note: All of the entries in this table are significantly different from zero. The underlying econometrics are explained in Appendix 3.

orchestras had a sizable positive effect on profits. At the same time, for small orchestras, a dollar spent on fundraising had a large positive effect on profits. In the other cases (large-orchestra spending on fundraising; small-orchestra spending on recording and advertising), impact is negligible or actually negative.

Why might fundraising be such a good investment for smaller orchestras? Many of these orchestras became full-time professional organizations in relatively recent times (within the last 30 years or so). As such, not too terribly long ago, many did not occupy the same place they do now in their cultural communities. Thus, it makes sense that the relative youth of many of these orchestras as cultural institutions puts them in a position to collect low-hanging philanthropic fruit. A tougher question is, why do dollars spent on recording and advertising by these smaller orchestras yield negative returns? This is difficult to answer with certainty. However, one possible explanation is that money spent on recording and advertising “crowds out” money spent on

fundraising, which, as has been shown, is very effective.¹¹ Thus, what they contribute to revenues, while likely positive, is less than that which the orchestras lose by *not* investing in fundraising.

There is an analogous explanation for the finding that large orchestras tend not to earn back dollars spent on fundraising. Predominantly, large orchestras are located in sizable urban areas and have long histories in their communities. It can be argued that, to some extent, they have tapped out the philanthropic dollar, while the potential for audience expansion, given their large population bases, is substantial (hence advertising and recording are profitable investments).

This is a powerful conclusion: large and small orchestras have extremely different prescriptions for affecting the behavior of consumers (who buy tickets, donate money, and contribute via their taxes to the orchestra), and picking the right investment is very important. In the case of the limited list of possible instruments examined here, for example, the data recommend that smaller orchestras spend the larger part of their promotional budgets developing donors, while larger orchestras should advertise their products and record. Furthermore, if one believes these data, the penalty for not following these instructions is (on average) very harsh. This will be discussed more in a moment.

A caveat: The data used here aggregate across a large group of orchestras. All of us who have worked in the orchestra business know that individual orchestras, like their constituent regions, are very different from one another, so the “average” effect of a particular instrument on profits might differ substantially from actual effects in a certain orchestra, large or small. This article’s conclusions could be tightened into actual investment advice for a

¹¹ It might also crowd out some other effective instrument not measured here, such as (perhaps) performers’ salaries.

particular orchestra by performing the statistical analysis mentioned in this paper with *that* orchestra's data or the data of a small group of orchestras of similar size, financial conditions, and region. Since an appropriate set of tactics makes substantial potential returns possible, this analysis holds real promise for orchestras and needs to be done.

The Relative Effectiveness of the Marshallian and Veblenian Strategies

It has been shown that the instruments or *tactics* discussed are not equally effective for all orchestras, depending on their size. A generalization along size lines as well with respect to these *strategies* can now be made by appealing to a commonsense argument about the way two of the instruments, fundraising and advertising, are generally used: Fundraising involves the development of "elite philanthropy" (to use the words of Francie Ostrower [1995]), which is, by definition, elite. Hence, one might be inclined to consider fundraising to be an inherently Veblenian type of instrument. In contrast, advertising is probably more Marshallian: Campaigns to publicize the orchestra in such a way that new audiences are created are very common at present.

This is far from a watertight mapping of tactics onto strategies, and is only one of a number of interpretations of the findings, given the limits on the data. However, this argument has a certain intuitive appeal, I believe, and has interesting policy implications: orchestras for whom fundraising is a particularly effective instrument—smaller orchestras—should follow a Veblenian (luxury-enhancing) strategy for expanding the demand for their products. Conversely, orchestras for which advertising is more effective—larger orchestras—would do well to pursue a more Marshallian (new audience-initiating) strategy.

Summary, Suggestions for Managerial Practice, and Questions That Remain

This chapter has reviewed the most recent economics literature on how to improve orchestras' cost-revenue position through manipulation of consumer behavior. Along the way, four basic questions have been answered:

Q1. Can orchestras impact consumer demand for their products?

Answer: Yes. Research shows statistical evidence of this.

Q2. Can any *specific* tactics for influencing consumers be identified?

Answer: Yes. Expenditures on *recording*, *fundraising*, and *advertising*, if made appropriately to individual orchestras' circumstances, can be effective. These three are most certainly not the *only* instruments at an orchestra's disposal; for technical reasons they were chosen to test the first question above. Surely other equally effective instruments for expanding demand can be found, such as quality improvements. Future research towards a more comprehensive list of instruments available to orchestras is indicated.

Q3. What does the effectiveness of these tactics suggest about that of the Veblenian and Marshallian strategies introduced in the preceding chapter?

Q4. How do these tactics and strategies vary in effectiveness based on an orchestra's individual characteristics?

Answers: The chief characteristic identified here was size (in terms of budget). Statistical tests outlined in this article indicate that fundraising is particularly effective for smaller orchestras while recording and advertising for the same orchestras are ineffective or even counterproductive. The opposite was true for larger orchestras: advertising and recording expenditures create a large return, while fundraising expenditures don't pay for themselves.

An argument can be made that the effectiveness of the Veblenian strategy for a particular orchestra can be gauged by the effectiveness of fundraising, and the effectiveness of the Marshallian strategy, by the effectiveness of advertising. A logical conclusion, therefore, is that the Veblenian strategy is more appropriate for smaller orchestras, and the Marshallian, for larger orchestras.

This is not to say that size is the only important characteristic of orchestras in delineating demand-expanding tactics and strategies; size was simply the only major delineating factor in these data. Surely, other characteristics influence the effectiveness of a tactic or strategy for a particular orchestra. To construct a precise and comprehensive set of policy prescriptions for an individual orchestra, these characteristics would have to be identified by performing an analysis on *that orchestra's* data. This is especially important to do for two reasons. First, it is well-known that in spite of the size groupings made here, orchestras are highly heterogeneous, so industry-wide prescriptions may be of limited precision. Second, the analysis done on this subject shows that it's not enough just to target demand; this targeting must also be done accurately or the investment made can be rendered useless (or worse).

With the above warnings in mind, I'll close by reviewing the broad suggestions made in this chapter, followed by a brief discussion of the questions that remain unanswered.

1. For smaller orchestras (according to the data studied, orchestras with annual budgets of up to \$5 million):
 - The best single use of the promotional-investment dollar is probably donor development.

- Concentrating on promoting the luxury image of concerts and patronage is likely to be more fruitful than seeking to expand the audience base into the world of previously-uninitiated consumers.
2. For large orchestras (with annual budgets of over \$5 million):
- Advertising and perhaps recording are probably better investments than fundraising.
 - Concentrating on expanding the audience/patron base with previously-uninitiated consumers is likely to be more fruitful than promoting the luxury, elite image of orchestra products.

While a several useful results have been established here, a number of questions remain (besides those already noted over the course of the analysis). First, this chapter doesn't address the subject of geographic variation in demand for the orchestra's products. When assessing the influence of a particular tactic or strategy for increasing demand, it might be well to separate out city-specific differences in such things as wealth and taste. In other words, beyond budget sizes, it's possible that, for example, Toledo is a less "Veblenian" community than Los Angeles. This task is worthy of an entire paper; a start on it is contained in the fifth chapter.

Second, this chapter has identified a significant size dichotomy between orchestras in terms of the appropriate method for expanding demand. While specific recommendations about managerial practice are made as a result, the question arises as to what one can predict about the future based on these findings: What type of orchestra will tend to be best-placed to deal with the trends in funding? This is the topic of the next chapter.

Third, in calculating the effects of different instruments on total orchestra revenues, all sources of revenue have been summed, making the implicit assumption that there is no feedback between them. Is this a reasonable assumption? For instance, claims are often made that public subsidies somehow “leverage” private donations, meaning that there is some sort of synergy between publicly- and privately-donated revenues. The validity of the independence assumption and hence that of such claims is the central theme of chapter five.

4. THE SEMI-PROFESSIONAL ORCHESTRA AS A MODEL FOR ARTS FIRM ORGANIZATION

Introduction

The problem facing arts firms (specifically orchestras) as described in the preceding chapters is that there is upward market pressure for these firms on their costs even though revenues are not increasing as much. A number of potential solutions to this problem were outlined in the first chapter, including productivity increases (if possible), increased government aid, or outward shifts in demand for the art firm's products.

It might also solve the problem (at least temporarily) to simply decrease the amount of labor (to the point that labor supply and demand are once again equal). This remedy, which is really just a movement toward equilibrium (such that labor's marginal revenue product rises until it is equal to the wage rate), is the subject of this chapter. Two basic questions are asked and answered here. First, can this equilibrium adjustment be counted on as a sure—if not particularly palatable—cost disease remedy? Second, what are the microeconomic difficulties posed by trying? In order to answer this second question, it is necessary to begin an exploration (deeper than those in earlier chapters) of the nature of the orchestra's tangible product. Over the process of answering these questions an interesting result emerges that continues the process of differentiating larger from smaller (in terms of budget, *not* players) orchestras: Smaller orchestras would seem to be best-placed to make needed adjustments to scale; hence in the absence of other cost disease remedies, they may represent the future of the industry.

It is noteworthy that the type of remedy discussed here can be thought of as either a short-run or long-run fix to the income gap problem, depending on one's

view of its underlying cause. According to Baumol's explanation, the inexorable rises in costs over time due to discrepancies in productivity of labor would make this just a temporary solution. If, however (as discussed briefly in the first chapter), arts firms' financial distress were a function of a particular event—such as a temporary surge in government support (leading to bad programming decisions) or anticompetitive forces wielding power for a while in the industry—this might be considered a permanent remedy.

The next section begins a microeconomic inquiry into the nature of the orchestra's tangible product, followed by an examination of the possible effects of adjustments to its scale of operations. Evidence about different-sized orchestras is then considered. A summary and conclusions finish the chapter.

The Nature of the Tangible Product of the Orchestra

The discussion in the preceding chapter on what exactly the orchestra produces notwithstanding, I have been vague as to the nature of the individual products, particularly the tangible product. It was referred to in the second chapter and the model of cost disease in Appendix 1 by the shorthand "music." However, issues of how this product behaves economically have been avoided. It will be shown here that this behavior is quite unique and leads to conclusions about scale adjustments (mentioned above) that are far from obvious.

In contrast to previous discussions in the literature which fix an orchestra's output simply in terms of attendance,¹ here I argue that its tangible product is best defined more precisely in terms of its "potential." It produces a certain amount of acoustic, nonamplified music "per listener;" the amount of music therefore depends on how much can be listened to in addition to the number of listeners. A crucial determinant of the total output, then, is anything that gives

¹ For example, see Mark Lange et al [1986].

an orchestra (or any other performing group, for that matter) a greater production potential; as has been shown, the size of the venue fits this description, thus playing a traditional role of capital. A more interesting determinant, though, since no orchestra can perform the same concert night after night,² is repertoire. An orchestra of 75 bassoons, having no repertoire, would have no audience and in any case nothing to play, while an “orchestra” of one player would have no way to perform the vast array of symphonic works. This is to say that the potential product tends to change as levels of repertoire and labor are changed relative to one another.

What does this imply about the marginal product of labor? A moment’s reflection on the potential product of a musical group, as musicians in appropriate combination are added to the existing body of repertoire, leads one to the conclusion that the marginal (potential) product curve here should have far from the traditional convex shape. Consider the repertoire at the disposal of a 10-piece chamber ensemble: some well-known baroque works and a few isolated pieces from other eras written for unusual instrumentation. Adding musicians, this doesn’t change much until the threshold is crossed into the size of the classical orchestra, where the orchestra suddenly finds hundreds more pieces in its repertoire. Continuing on, another threshold isn’t reached until the early romantic literature requiring some 60 players. When we reach 85 musicians or so, the production potential explodes to include practically everything in the symphonic repertoire except for a few atypically-large works of the Alpine Symphony variety. All this suggests unusual total and marginal product of labor curves, such as those depicted in Figures 4.1 and 4.2. And what this tells us is that a discussion of whether the marginal product of labor for an orchestra is diminishing or not is not particularly meaningful.

² Only musicians that change venue each night can get away with that.

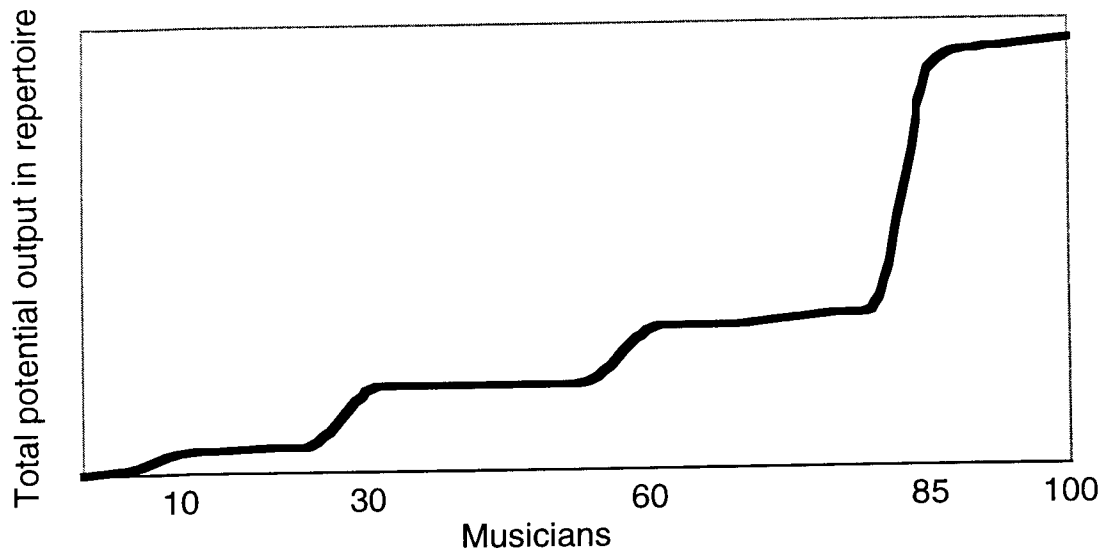


Figure 4.1—Total Potential Output Increases in “Spurts” With The Number of Musicians

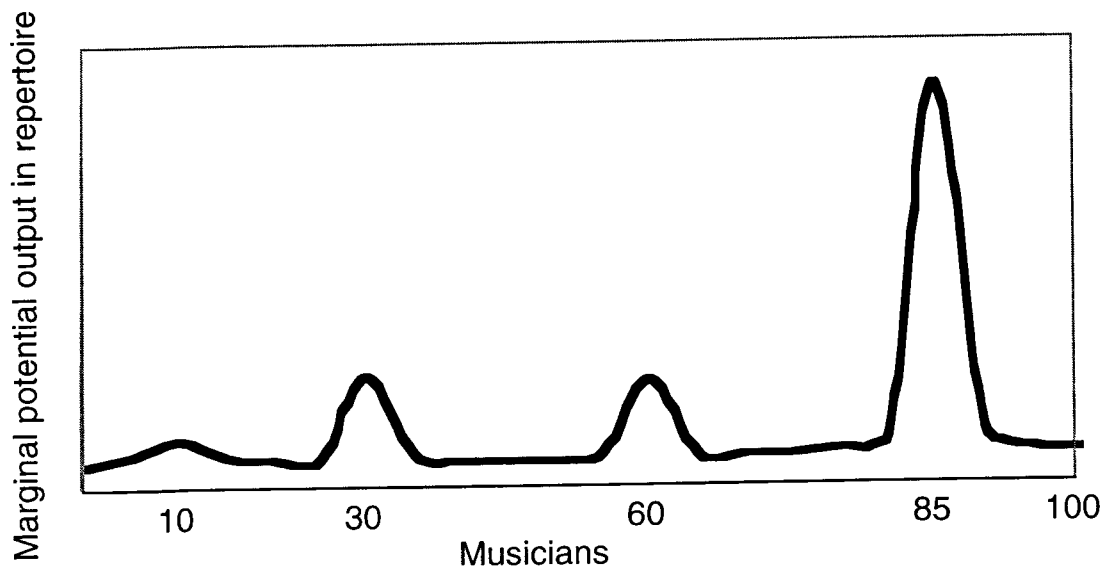


Figure 4.2—Marginal Potential Output Varies Dramatically With The Number of Musicians

A Theoretical Remedy

Figure 4.2 suggests that simply making a smaller orchestra is not likely to have the desired effect, since the marginal product of labor is highly nonmonotonic. This can be better understood with the aid of a few pictures. First, Figure 4.3 depicts the “normal” (well-behaved) case of labor supply and demand. Assuming a competitive environment, traditional price theory defines the labor demand for a firm as the product of the firm’s output price and the amount of output that labor produces for the firm (its marginal revenue product, in other words). Further assuming that the firm can’t hire so many workers as to affect the wage rate, the labor supply curve it faces is simply a horizontal line at the wage it is given by the market. The demand curve is downwardly-sloping over its entire range of consideration due to the law of diminishing marginal returns.

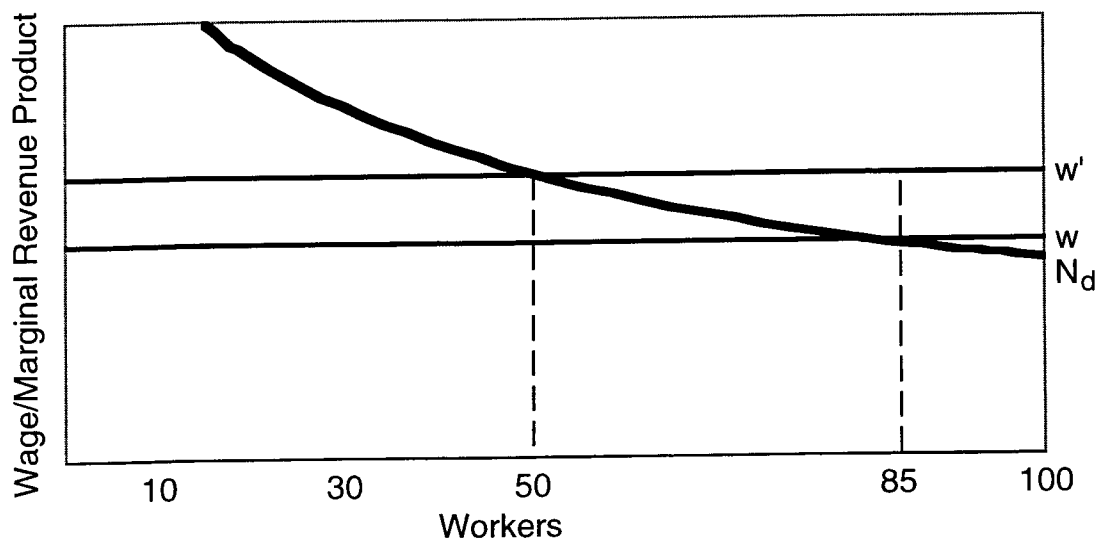


Figure 4.3—The Effects of Equilibrium Adjustments Given a Traditional MRP Curve For Labor

Say the firm is faced with a wage increase of w to w' . In Figure 4.3, it restores equilibrium ($MRP=w$) by decreasing the size of its labor force from 85 to 50 workers. In this way, it closes the gap between what it pays its workers and what they earn for the firm.

Now say the firm is an orchestra, whose labor force has the marginal product curve depicted in Figure 4.1. This would result in a demand for labor (MRP) curve like the one in Figure 4.4. Clearly, decreasing the number of musicians in response to an economy-wide wage increase will not serve the same purpose as above; any movement away from 85 musicians will actually *widen* the gap between the wage paid and that which the musicians earn in revenues for the orchestra (w' and MRP), which naturally would exacerbate the cost disease problem. Essentially, the idiosyncrasies of the orchestra's repertoire constraints effectively subvert the influence of the law of diminishing marginal returns.

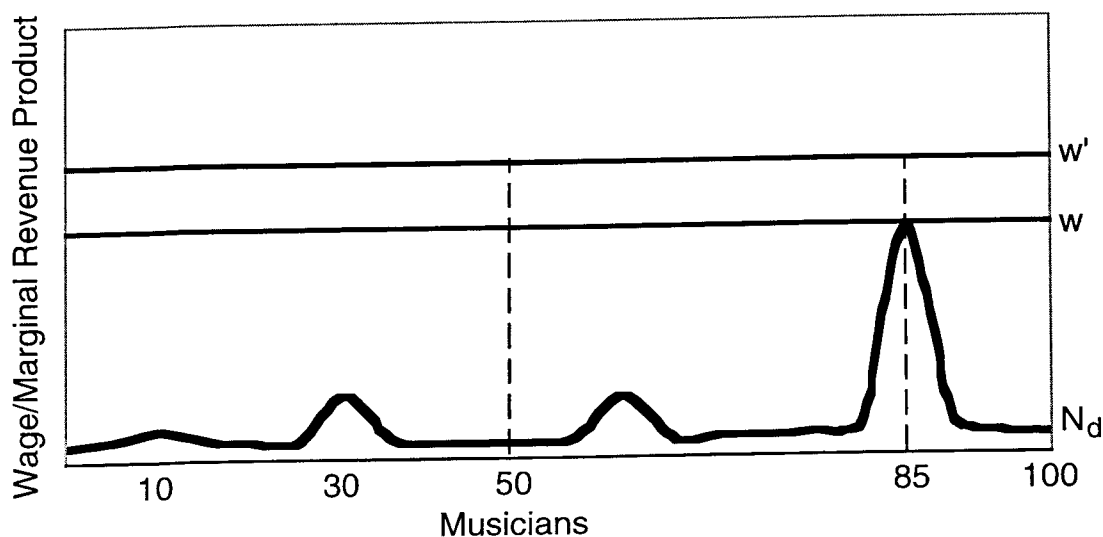


Figure 4.4—The Effects of “Equilibrium” Adjustments Given The Orchestra’s MRP Curve For Labor

The solution therefore does not lie in cutting the size of the labor force. What one might do, though, is consider the possibility of restoring equilibrium through a scheme that while maintaining the size of the orchestra, lowers the wage bill. How would this affect the situation in Figure 4.4? Since the wage rate is given exogenously, as noted above it appears to the orchestra to be perfectly elastic. What this means is that the wage, or marginal cost of a musician, is equal to the average cost. While marginal cost can't be affected, average cost *can* be changed by using lower cost (or no cost) substitutes for the professional musicians.³ That is, use amateurs or semiprofessionals in some positions. This will lower the average wage to the orchestra, in a sense lowering the wage line (from the orchestra's point of view) in Figure 4.4 back down. And in this way, the orchestra can simulate an equilibrium at which point cost disease is neutralized. The equilibrium is "simulated" since in reality the wage line is at its higher level and the orchestra has merely substituted inputs in its production process.

The idea that amateurs or part-time players be substituted for professionals has been discussed by Baumol [1996] and actually suggested for some cases by Thomas Wolf in *The Wolf Report*:

"... is the model of a salaried core of a hundred players appropriate for a substantial number of communities with professional orchestras in this country? Probably not. I have heard the arguments about the artistic integrity of such an ensemble. But I reject the notion that this is the ideal structure to which orchestras must aspire and that a smaller core orchestra supplemented by part-time players is not a reasonable and acceptable goal" [p. A-17].

Clearly, it would be naïve to view such a substitution as a panacea; the most obvious problem with such a scheme is that the nature (in terms of both

³ It would be simple to extend the simple model presented in Appendix 1 to allow this option to exist.

quantity and quality) of the product will almost certainly change when amateurs or part-timers, albeit high quality ones, are put in the place of full-time professional players.⁴ In addition to the obvious supply-side effects, we might very well see a demand decrease which would result in a lower output price (all things constant) and hence a lower MRP of musicians. In order for the ameliorating effect to dominate, it must be the case that such a substitution lowers the average wage more than it lowers the demand for labor.⁵

Evidence

Can one predict that this is in fact the case? Perhaps so, based on the two sets of data. First, there is that from the American Symphony Orchestra League's annual survey of orchestras (the same data set as the first one used in the second chapter) summarized in the *Wolf Report*. The second source of data is the 1987 *Census of Service Industries*. A fundamental difference between ASOL numbers and those in the Census is that while cost disease is observed in the first data set, when the latter figures are considered, cost disease actually disappears: Revenues are no longer exceeded by expenses. Further, as Mary Peters [1992] points out, the second encompasses not only ASOL (U.S.) orchestras, but also others that have a *greater number of amateurs and semi-professionals*. A comparison of the orchestras in the top four groups from the *Wolf Report* data (in order to ensure that exclusively full-time professional orchestras are considered for purposes of contrast) and those from the Census is presented in Table 4.1.

⁴ Ignored is the possibility here that any significant portion of the orchestra's repertoire would be technically inaccessible (thus changing the MP curve) after such a substitution.

⁵ One question seems particularly pertinent here: Can we find the thresholds beyond which gains from scaling down are overtaken from losses from the resulting quality decrements? This is an empirical question and a very worthwhile topic for future research. The biggest problem involved in this research would almost certainly be access to good data, though, since it would be necessary to assemble time series on the relatively few orchestras that have in fact downsized.

Table 4.1—Revenues and Costs for U.S. Orchestras

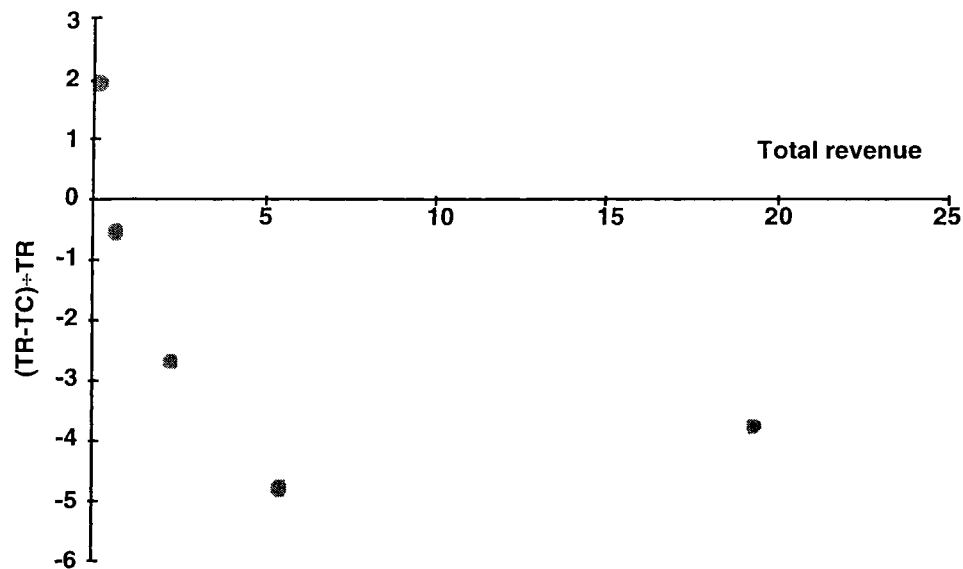
	ASOL Data, 1987	Census, 1987
Number of U.S. orchestras	157	261
Average revenues	\$3,163.9	\$1,720
Average expenses	\$3,174.4	\$1,673.6
Average surplus (deficit)	(10.4)	46.4

NOTE: Figures are in thousands of 1987 dollars

Bolstering the point that is developing here, it is notable that the fifth category of orchestras from the *Wolf Report* data which has a lower bound on its budgets of just \$21,000 (and thus undoubtedly contains some non-full-time professional involvement) is the only category that had a negative income gap (a surplus of about \$4,000 per orchestra) in 1991. The other four groups had a deficit, and the size of this deficit as a percentage of total revenue (a relatively unitless and hence truer measure of the income gap than just revenue minus cost) seems to be loosely positively related to orchestra size (the largest orchestras being a slight exception—they have only the second largest gap).⁶ This is illustrated in Figure 4.5.

It is worth noting that this finding is consistent with the findings of Luksetich and Lange [1995]: They report that for the three groups of orchestras studied, the largest and smallest orchestras saw a statistically significant return (to revenues) on fundraising expense, but the return was higher for the smaller orchestras. At the same time, this effect was not statistically significant for the intermediate-sized orchestras. Naturally, this should contribute to precisely the income gap situation seen here.

⁶ Naturally, it could also be argued that smaller orchestras tend not to incur debt simply because people are less likely to lend them money. This being the case, cost disease could be avoided via a rather perverse policy of forbidding orchestras to borrow, clearly not an optimal solution.



SOURCE: *The Wolf Report*

NOTE: Each point is the average figure for each orchestra.

Figure 4.5—The Income Gap as a Percentage of Total Revenue

Aside from the theoretical benefits described above of decreasing the orchestra's scale of operations, what other factors might contribute to a smaller orchestra's relative success in the fight against cost disease? Two are identified here. First of all, it is shown in Appendix 3 that concert and donated revenues for larger orchestras are probably tending to fall slightly over time while this is likely not true for smaller orchestras. Second and perhaps related to the first, it could be that smaller orchestras (those with smaller budgets and which pay relatively less) might tend to be less plagued with labor difficulties—for whatever reason, players in smaller orchestras might be either happier in their work or at least less likely to express dissatisfaction in the form of activities that adversely affect revenues and costs. Some recent research suggests that this might indeed be the case,⁷ and on the level of casual observation, labor problems

⁷ The inverse relationship between job satisfaction and compensation can be seen in the recent work of Jutta Allmendinger, J. Richard Hackman, and Erin Lehman [1994].

at the upper end of the American orchestra payscale are certainly familiar. For example, the recent difficulties involving the New York Philharmonic's bitter yet highly-paid players (or those in Philadelphia or Atlanta, for that matter) were well-documented.⁸ But whatever the reason for any compensation/satisfaction tradeoff that might exist, whether it be the pressure of performing in a top ensemble day after day (as has been suggested by Seymour and Robert Levine [1996]) or something else, to the extent that it resulted in wage concessions or work stoppages, it would be certain to widen the income gap.

Conclusion

In summary, it seems that as cost disease is concerned, "smaller" might be "better" for the reasons discussed above. And it is probably the case that "smaller" could also be interpreted in a number of different ways. For example, much of this analysis could equally well be applied to scale adjustments in terms of, say, rehearsal time.

It should be emphasized at this point that this suggestion is *not* a normative one; no judgment is being made on any non-economic criteria, of which there are many that are naturally considered in making decisions about the scale and operations of an orchestra. However, the exigencies of economic reality can not afford to be ignored as the financial future of orchestras is planned for in the current (and persisting) economic and policy climate. For better or worse, what exactly does all this suggest for the future of the orchestra industry? To the extent that cost disease continues to plague these firms, and it seems unlikely that it would mysteriously cease to do so, many might find (as a number already have over the last few years) that scaling down is their most attractive alternative.

⁸ For instance, see Bernard Holland [1995].

5. DO PUBLIC SUBSIDIES LEVERAGE PRIVATE PHILANTHROPY? EMPIRICAL EVIDENCE ON SYMPHONY ORCHESTRAS

“Grants from the Arts Endowment not only provide vital funds in and of themselves, but the leveraging effect of these grants, which require at least a dollar-for-dollar match, stimulates private giving many times over the required match. Taking away the federal ‘seed’ money will not encourage arts funding to grow, but will result in just the opposite.”

“Myths & Facts about National Support of the Arts & Culture”
American Arts Alliance, 1997.

Introduction

The idea behind this quote, that private philanthropy depends on public subsidies, is one that has commonly been heard of late in the debate over the need for state participation in the provision of the arts. The document cited above goes on to say that “Last year [1994], \$123 million in NEA grants leveraged more than \$1.3 billion” This statement imputes causality to the NEA grants: They were in some way responsible for the generation of more than ten times as much in non-NEA donations. The argument generally runs that since NEA dollars *require* at least equal matching from other sources, these dollars must have *elicited* the same amount of other donations, and “gotten the ball rolling” for the rest.

Is this a reasonable claim? Economic reasoning might say not; on the contrary, a reasonable argument has been made that just the opposite effect should obtain: Public funds will tend to crowd out private donations, so private donations will likely be made in *spite* of the NEA subsidies rather than *because* of them. There are two general reasons why this crowding out might occur. First, the sense of social responsibility to support a worthy cause might be diminished

if the government takes up its funding.¹ And second, to the extent that higher government subsidies are paid for with higher taxes, individuals would have less disposable income and hence not donate as much as they otherwise might.² However, given the fact that the amount spent directly by government on the arts in this country is so small per capita compared to other countries (as the concluding chapter explains), this second effect would likely not amount to much at all.

It is important to understand what, if any, relationship exists between public subsidy and private support. While the literature on the nature and determinants of the individual revenue sources is reasonably well-developed,³ that which considers them simultaneously is not. And trends over time in revenue sources indicate that there may be some interdependence between these sources. For example, Figure 5.1 shows the differences in funding sources in 1984 as opposed to 1991 (on average) for U.S. orchestras belonging to the American Symphony Orchestra League.

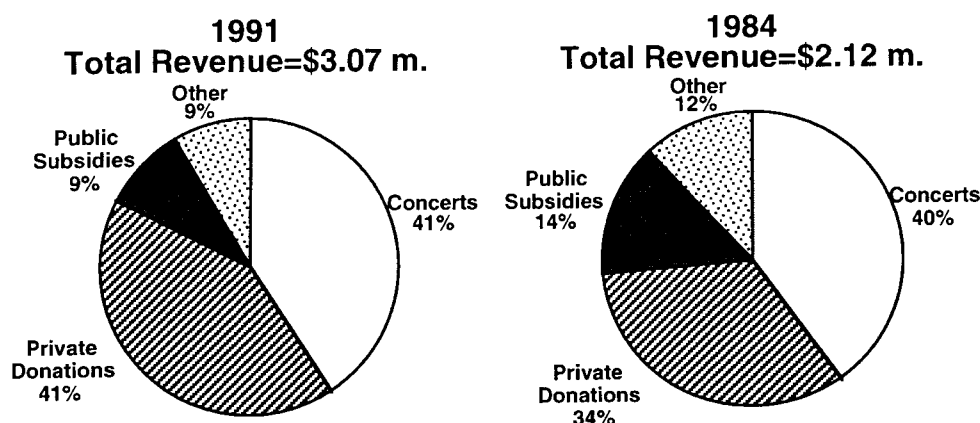
While earned revenues have remained fairly constant over time, there has been a significant shift between tax-generated revenues and privately-donated funds: The former shrunk over the eight-year period by about 35 percent but was more than made up for by the latter. This calls into question the implicit assumption made in most studies of independence between these two revenues sources;⁴ indeed, it is at the heart of the claim made by the quote that opened this chapter.

¹ These arguments are explored in more depth in Brooks [1997a].

² It should also be noted that higher tax rates might lead to *higher* donations if charitable philanthropy is tax deductible.

³ In the case of private donations, among other resources are Ostrower [1995] or the annual periodical *Giving USA*. In the case of public subsidies, resources include Netzer [1978] and Grampp [1989].

⁴ An example of such a study is Brooks [1997d].



SOURCE: *The Wolf Report*. Figures are in 1991 dollars.

Figure 5.1—Revenue Sources For Symphony Orchestras, 1984 and 1991

The objective here is as much to detect whether any interaction exists as to test whether public subsidies increase or decrease private giving.⁵ This is primarily an empirical task: Any effects of public subsidies on private donations should be apparent in data on firms that collect both kinds of revenues. This chapter analyzes this issue econometrically, in the case of symphony orchestras.

The next section explains the data used in this study, followed by a section on econometric methods. The fourth section presents the results. The last section discusses the conclusions of these results and suggests follow-on research.

This chapter is considerably more technical than the others. The reason that the mathematics are not relegated to an appendix is that one of the purposes of this chapter is precisely to construct an empirical methodology for examining this type of revenue management problem in nonprofit administration. That is, in an important sense, the mathematics are themselves a part of the focus of this chapter.

⁵ I focus on these two revenue sources and exclude “earned” revenues here both because the evidence presented indicates that it has remained constant, and because it is not part of the deeper policy polemic contained in the introduction to this essay.

Data

The data used to test the relationship in question came from five major American symphony orchestras, all of whom have annual budgets above \$20 million.⁶ These data, which cover 12 concert seasons from 1983–95, include figures on total donated revenues, total government support, number of concerts performed per year, as well as expenditure levels in several different areas, such as fundraising. They were collected by the American Symphony Orchestra League in its “Season Orchestra Statistical Report Form,” which it sends to all its member orchestras (most of the major orchestras in the U.S.) each year. In addition, data were collected on the economic variables pertaining to the states in which the individual orchestras reside, for each of the years in the study. From these data, the variables used in the following analysis (the explanation for which follows in the next section) are:

PRIVATE=private donations

PUBLIC=government subsidies

DEVELOPMENT=expenditures on fundraising

CONCERTS=number of concerts in a season

PRODUCT=gross product of the home state

TIME=trend variable

City Dummies: W, X, Y, Z=dummies for four of the five orchestras

In all, therefore, this analysis had at its disposal a panel data set containing 60 observations: 5 panels each containing a 12-period time series.

⁶ By agreement with the orchestras they remain anonymous.

Methodology

There are actually two questions one would like to answer. First, what effect can we detect between the two revenues sources? And second, what can we infer about the causality between these sources? For answering the first question, the estimation of the simple linear model

$$\text{PRIVATE}_{it} = \alpha + \beta \text{PUBLIC}_{it} + \varepsilon_{it}, \text{ } i = \text{orchestra}, t = \text{time}; i = 1, \dots, 5; t = 1, \dots, 12$$

using ordinary least squares is inadequate, for two reasons. First of all, the slope coefficient will be inconsistent, due to the violation of orthogonality between PUBLIC and the residuals: One can easily imagine an omitted variable (take the business cycle B, for example) that would affect both PRIVATE and PUBLIC, with the result that some of the correlation between the dependent and independent variables would be caught in the errors, meaning that $\text{corr}(\text{PUBLIC}, B) \neq 0$. It is straightforward to prove under these circumstances that

$$\text{plim} \hat{\beta} = \beta + \Omega, \text{ where } \Omega \text{ is not a vector of zeros.}^7$$

Second, panel data are notorious for generating variance-covariance matrices of residuals that are not independent and identically-distributed, and hence for producing incorrect standard errors of the estimates under OLS. And this is indeed the case with the simple regression outlined above, which exhibits both heteroscedasticity and positive first-order autocorrelation.⁸ This can

⁷ In this case, $\hat{\beta}$ will probably overestimate β . This is because most imaginable confounding factors (such as the business cycle) will push both PUBLIC and PRIVATE in the same direction, meaning that $\text{corr}(\text{PUBLIC}, \varepsilon) > 0$. Thus, in the limit, $E[X' \varepsilon]$ is positive definite. Since $\Omega = E[X' X]^{-1} E[X' \varepsilon]$ and $E[X' X]^{-1}$ is assumed to be positive definite, Ω is positive, so $\hat{\beta} > \beta$.

⁸ The Durbin-Watson statistic for this regression is 0.35; the Breusch-Pagan test (in which the null hypothesis is *no* heteroscedasticity) yields a $\chi^2(1)$ of 6.53, which one rejects at any reasonable level.

potentially lead to erroneous conclusions about the significance of the relationship between the two variables of interest.

Each of these two problems can be addressed effectively. In the case of nonorthogonality, including the relevant omitted variables and/or the use of an appropriate instrument should solve the problem. What are the relevant variables? Exogenous macroeconomic effects should be considered (as noted above), hence the variable PRODUCT is used. Other effects that are probably relevant are the orchestra's scale of operations (captured in CONCERTS), the unique aspects of an individual orchestra's community (captured in the dummies W, X, Y, and Z), and time (captured in TIME), which would capture the trends often supposed to exist in public support for orchestras. Note that not all plausible variables are employed here; for instance, income per capita in a particular locale (or perhaps that for the top income decile) might be pertinent. However, the argument can be made that a fair amount of their effect will be captured in the general variables already included (probably the city dummy and state product in this case), and hence for purposes of a general representation of outside effects, in conjunction with instrumentation, this list is probably more than adequate.

It would be difficult to find an instrument for PUBLIC, but not so for PRIVATE: It makes sense that DEVELOPMENT would be correlated with private donations, but maybe not so with state subsidies, and hypothesis testing supports this intuition.⁹ (It is conceivable that orchestras might anticipate declines in public spending and ramp up their development efforts, in which case $\text{corr}(\text{DEVELOPMENT}_t, \text{PUBLIC}_{t+1}) \neq 0$. However, this would not

⁹ The regression $\text{PRIVATE} = \alpha + \beta \text{DEVELOPMENT} + Q\gamma + \varepsilon$ yields a significant and positive value of β ; the regression $\text{PUBLIC} = \pi + \lambda \text{DEVELOPMENT} + Q\delta + \varepsilon$ yields an insignificant value of λ . Q represents a vector of other relevant regressors (explained below).

compromise the orthogonality condition in the regressions carried out here. Thus, to test for an effect between PRIVATE and PUBLIC using two-stage methods it is necessary to make PRIVATE the right-hand side variable and place PUBLIC on the left. The issues of causality will be addressed in turn.

To fix the non-i.i.d. problems with this panel data set, Jan Kmenta [1986, p. 444] has suggested a set of assumptions on the disturbance covariance matrix that estimate a matrix for data that are heteroscedastic, first-order autoregressive, and whose residuals are correlated across the panels. This method is employed here, and corrects adequately for these problems.

To answer the first question of the presence of a relationship between PRIVATE and PUBLIC, then, a two-stage GLS regression will be run using Kmenta's correction in each stage. Specifically, the first stage is

$$1) \text{PRIVATE}_{it} = \alpha_1 + Q\gamma_{it} + \beta_1 \text{DEVELOPMENT}_{it} + \varepsilon_{it}, \text{ where}$$

Q is an $N \times 7$ matrix whose columns consist of the vectors TIME, PRODUCT, CONCERTS, W, X, Y, and Z. Equation 1) yields a vector \hat{P} of estimated values of PRIVATE. The second stage is then

$$2) \text{PUBLIC}_{it} = \alpha_2 + Q\gamma_{it} + \beta_2 \hat{P}_{it} + u_{it}.$$

Of interest here will be the sign and standard error of β_2 : Is there a positive, negative, or insignificant relationship between PRIVATE and PUBLIC?

The second question is that of causality. If a significant relationship is detected in the tests above, the direction of causality needs to be established. If an insignificant relationship is found, a finding of lack of causality in either direction is expected and will strengthen the initial results.

A convenient test for such causality has been suggested by Clive Granger [1969]. "Granger causality" is established by running the following regressions:¹⁰

$$3) \text{PRIVATE}_t = \alpha + \beta_1 \text{PRIVATE}_{t-1} + \beta_2 \text{PRIVATE}_{t-2} + \beta_3 \text{PRIVATE}_{t-3} + \beta_4 \text{PRIVATE}_{t-4} + \gamma_1 \text{PUBLIC}_{t-1} + \gamma_2 \text{PUBLIC}_{t-2} + \gamma_3 \text{PUBLIC}_{t-3} + \gamma_4 \text{PUBLIC}_{t-4}$$

$$4) \text{PUBLIC}_t = \pi + \lambda_1 \text{PUBLIC}_{t-1} + \lambda_2 \text{PUBLIC}_{t-2} + \lambda_3 \text{PUBLIC}_{t-3} + \lambda_4 \text{PUBLIC}_{t-4} + \delta_1 \text{PRIVATE}_{t-1} + \delta_2 \text{PRIVATE}_{t-2} + \delta_3 \text{PRIVATE}_{t-3} + \delta_4 \text{PRIVATE}_{t-4}$$

Inferences about causality can be made based on the results of restricted F-tests on equations 3) and 4). They are summarized in Table 5.1.

Table 5.1—Granger Causality Inferred From The Results of Restricted F Test on Equations 3) and 4)

	Reject Hypothesis $\gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = 0$	Do Not Reject Hypothesis $\gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 = 0$
Reject hypothesis $\delta_1 = \delta_2 = \delta_3 = \delta_4 = 0$	Bilateral causality: Changes in PRIVATE and PUBLIC cause each other.	Unidirectional causality of PUBLIC by PRIVATE.
Do not reject hypothesis $\delta_1 = \delta_2 = \delta_3 = \delta_4 = 0$	Unidirectional causality of PRIVATE by PUBLIC.	Independence: Changes in PRIVATE and PUBLIC do not affect each other.

¹⁰ Note that Granger tests on a time series require that the first 4 periods be dropped (assuming a test that regresses across 4 prior periods as is the custom with annual data, irrespective of the number of prior periods covered). In this case, it is necessary to drop the first 4 periods *from each panel*. This results in a sample of (12-4)X5=40 observations in total.

Empirical Results

The results of estimating equations 1) and 2) are presented in Table 5.2. The coefficient of particular interest is that of PRIVATE, of course. Based on the t-statistic observed, one cannot reject the null hypothesis that this coefficient is zero: In these data, PRIVATE indicates no significant relationship to PUBLIC.

Table 5.2—Two-Stage Generalized Least Squares Regression Estimating The Relationship Between Government Funding to Orchestras and Private Philanthropy

<u>Variable</u>	<u>Coefficient</u>	<u>t-statistic</u>
CONSTANT	-41,601	-0.033
PRIVATE	0.075	0.497
CONCERTS	-1,863	-4.483*
PRODUCT	9,032.1	0.819
TIME	-37,024	-0.855
W	-941,710	-0.535
X	-701,400	-0.618
Y	1,621,600	3.113*
Z	-915,130	-0.776
Dependent Variable PUBLIC		
BUSE R^2 = .4995	Log of likelihood Function=-792.01	N=60 (5 panels, 12 periods each)

NOTE: * indicates statistic is significant at appropriately high levels. Rho was estimated using Kmenta's pooling procedure for panel data. The constant term captures the effect of the fifth city.

These results frame the second test not in terms of finding the true nature of causality, but rather as a reinforcing test to the result presented above, that there is no causality in either direction. The outcome of the Granger tests—estimating equations 3) and 4)—is presented in Table 5.3.

Table 5.3—Granger Tests of Causality Between PUBLIC and PRIVATE

<u>Independent Variable</u>		<u>Dependent Variable</u>		
PRIVATE _{t-1}	0.986	(5.97)**	0.203	(1.53)
PRIVATE _{t-2}	-0.260	(1.22)	-0.317	(-1.84)*
PRIVATE _{t-3}	0.383	(1.78)*	0.068	(0.40)
PRIVATE _{t-4}	-0.121	(-0.78)	0.037	(0.29)
PUBLIC _{t-1}	-0.185	(-0.87)	0.554	(3.26)**
PUBLIC _{t-2}	0.281	(1.30)	0.382	(2.21)**
PUBLIC _{t-3}	-0.344	(-1.86)*	-0.104	(-0.70)
PUBLIC _{t-4}	0.329	(2.32)**	-0.012	(-0.10)
CONSTANT	42,733	(0.18)	136,890	(0.71)
R ² (adj.)	.936		.834	
Log of likelihood function	-564.2		-555.4	
H ₀ PRIVATE _i =0 for all <i>i</i> Restricted F(4, 31):	110.16**		1.05	
H ₀ PUBLIC _i =0 for all <i>i</i> Restricted F(4, 31)	2.08		35.00**	

NOTE: Regressions were estimated using OLS. T-statistics in parentheses. * indicates statistic is significant at $\alpha=.10$. ** indicates statistic is significant at $\alpha=.05$. N=40 (5 panels, 8 periods each).

The restricted F-statistics place these data in the southeast quadrant of Table 5.1: No causality is detected in either direction, meaning that PUBLIC and PRIVATE indeed appear to be independent of one another. And this is consistent with the first test presented in Table 5.2.

Conclusions

Clearly, the answer to the question of whether public subsidies “leverage” private donations is *no*, in the case of the symphony orchestras under study.

Crowding out effects aren't witnessed either, since both the two-stage GLS regression and the reinforcing Granger tests indicate independence between the variables. This validates the assumption implicitly made in some research on total revenues that there is no feedback between these revenue sources.

Given the scope allowed by the data used in this study, the general validity of these findings is limited. However, the geographic disbursement of the five symphony orchestras studied makes it seem fair to assume that these results are robust for major American orchestras of similar size. Arguments could be made either way as to whether smaller (in budget) orchestras would see similar results. In Brooks [1997d]) I argue that smaller orchestras are likely to have less-developed philanthropic bases, which could mean one of two things. On the one hand, they might not differ systematically from major orchestras in terms of the reaction of private donors to public funding, if this underdeveloped philanthropy makes smaller orchestras relatively insensitive to public funding patterns. On the other hand, however, a relatively untapped philanthropic base might indicate a potentially high marginal return on a matching funds campaign, if philanthropy is somehow latent. In this latter case, smaller orchestras might see different results than those found here.

It would probably be unwise to generalize these results very much to other parts of the arts industry (or the nonprofit sector in general). However, the process for such generalization is uncomplicated to the extent that the methodology developed here could be applied in a reasonably straightforward way to the appropriate data in other fields.

While of principal interest in the first regression was the fact that PRIVATE is *not* significant, it is worth briefly noting what *is* significant: CONCERTS (negatively) and the dummy for city Y (positively). In other words, it would

appear that performance of more concerts would lead to fewer dollars in public support, and that city Y enjoys disproportionate funding. The explanation for the latter result is simple: City Y resides in a state with a relatively very high level of arts subsidies. Presumably, this fact would become apparent given a sample large enough to contain multiple cities from this state (and other states) as well as inclusion of a state dummy variable.

Explaining the significant negative coefficient on CONCERTS requires a bit more imagination. One plausible explanation might seem to be that a larger concert season scale would tend to be tied to a more developed philanthropic base via location in a large urban center, necessitating less public involvement. However, this explanation would not be consistent with the central conclusion of this study, that levels of private donations and public funding are unrelated. A better explanation would likely be that the economies of scale involved in producing more concerts per season (generally via repetition of concerts each week) generate ticket revenues that displace government funds (since public subsidies are often based on need). Insufficient demand for concerts in many markets (see Brooks [1997b]) handily explains why these economies are not exploited by all orchestras.

6. THOUGHTS ON THE ROLE OF GOVERNMENT

Introduction

Arts policy research, even that which has a primary focus on the private sector, is inextricably linked to issues of public economics. There are two reasons for this. First, arts firms produce a quasi-public good. Second, arts firms are predominantly organized as nonprofits, so many of their financial issues, including those discussed here, involve interactions between firms and government. Therefore, even though this dissertation places greater emphasis on issues facing private arts entities, the public sector is discussed in nearly every section. The questions thus raised are important in any broad discussion on the policy analysis of the arts; their specific consideration motivates this final chapter, which weaves the issues in this area raised over the last five chapters into a general survey of the topic. While the purpose is not principally to reach normative conclusions on these complex issues, it will be shown that the analysis already undertaken serves to clarify a number of the important points in the debate over the proper role of government in the provision of the arts.

Government Funding Patterns

In all developed countries, governments subsidize the arts. This is very different, however, from saying that they all fund the arts equally. In the case of symphony orchestras, this fact is expressed in Table 6.1, which lists government funding as a percentage of total revenues for symphony orchestras in the U.S., Canada, Japan, and Continental Europe.

Table 6.1—Average government funding to symphony orchestras as a percentage of total revenues across regions, 1985

Region	Government Funding (% of Revenues)
Canada	33.4 ^a
Japan	48.7 ^b
Continental Europe	73.0 ^c
United States	9.7 ^a

Source: (a) Wolf Report [1994], (b) Kurabayashi and Matsuda [1988, p. 69], (c) Schuster [1985, p. 65].

The salient feature of this table is the low level of support received by American orchestras, relative to their Japanese, Canadian, and European counterparts. This difference brings up an important point about the likely remedies for the symptoms of cost disease: The non-American orchestras can afford to be far more reliant on direct subsidies to defray the income gap, and thus the demand-side issues raised in the second and third chapters would likely be of less consequence to them. This is consistent with much of the discussion on this subject in the first chapter.

It would be very interesting to know just what explains the differences in direct support for the arts between the American and non-American orchestras. While a properly complete discussion on this topic would represent a chapter (at least), a few points can be made here. First, it should be noted that the differences in the table probably overstate the true difference in government support, since an important form of government involvement in the arts (and other nonprofit activities) common in the United States but generally unavailable in other countries is not captured in these figures: favorable tax treatment of charitable donations. In other words, American federal and state government indirectly supports the arts to the extent that it forgoes tax revenues on these

donations.¹ Second, differences in political economy between the U.S. and other countries with respect to centrally-directed policies in realms such as industry and culture are certainly at play here. The idea of the government employing an entire symphony orchestra, for example, is inconceivable in this country, while it is the norm in most of Western Europe. Naturally, the result of this difference is lower direct government funding to arts firms in the United States. Related to this last point is the notion that many post-war European governments have “bought social peace through bread and circuses.”

Two types of questions arise when considering this table. First of all, given that a certain level of funding exists across all countries, it would be worth considering why: What positive explanations exist for state intervention into the production and consumption of the arts? Second, given the differences between regions, it is clear that consensus on the proper level of funding does not exist. What are the bases of normative arguments for and against government subsidies to the arts?

Why Do Governments Fund the Arts?

There are several possible explanations for government intervention into the production and consumption of the arts. First, it is conceivable that market failure arguments (described in the next section) are a motivating force: Legislators responsible for setting funding levels may believe that the nature of the products and the structure of their markets lead to suboptimal provision in the private market.

In a world of perfectly-informed rational actors who use government only to correct market failure, this explanation could be a sufficient condition for a

¹ See Frey and Pommerehne [1989]. It is worth pointing out that this difference in tax laws may be changing. As Antony Thornicroft (1998) reported in the *Financial Times* recently, tax deductibility of charitable contributions may be implemented soon in Britain.

second one: Arts subsidies satisfy the will of the public. In reality, however, the two explanations might be quite distinct. For example, it is possible that the population views the arts as being of such intrinsic societal merit as to warrant public involvement irrespective of the externalities they might generate.² In this case, government, in that it might be seen uniquely to represent the “public interest” (in contrast to private firms), could be considered by some to be the most appropriate vehicle for arts provision.³

A third explanation is that arts subsidies are the result of rentseeking on the part of consumers and producers of the arts. First of all, as is noted in Throsby [1984] and Withers [1979], the redistributive impact of subsidies toward those that consume the arts disproportionately might lead them toward lobbying efforts that result in this funding. Second, as Grampp [1989] points out, since arts funding usually increases compensation to artists over that which would result in a private market, this difference might be due in some part to rentseeking on the part of artists themselves. The relative success of this rentseeking behavior might be attributed to the relatively high economic and social status enjoyed by consumers and producers (respectively) of the arts.

Chapter three suggests a fourth (at least partial) explanation. It was shown there and in Appendix 3 that the instruments under study were associated in different ways with subsequent changes in government funding to orchestras. In other words, arts firms may influence funding levels via their own investment decisions.

² The distinction here with positive externalities might appear to be nothing more than a semantic issue. However, the literature on “merit goods” make just this distinction. See Musgrave [1959].

³ It can be argued that these two explanations are really just subtly different variations on the same public-good theme. See Wolf [1993].

Market Failure and Normative Arguments for Government Arts Funding

The view that public subsidization of the arts is both necessary and desirable seems to be held almost as an article of cultural faith by many people who claim to understand the benefits of art, although the “masses” do not. In the words of Lord Redcliffe-Maud [1976]:

“Arts will not get public patronage they need without fundamental change in public attitude—action must start with those who recognize the arts as sheer necessities and know the arts need money from us all.”

This conviction, that public funds are indispensable in ensuring that the “appropriate level” of art be provided to society, has also been shared by many noted economists. As Lionel Robbins [1971] put it:

“Most of us, I fancy, would wish the apparatus of authority to be pleasing to the eye, both internally and externally, and for the opportunities of pleasure afforded by parks, galleries, and libraries, and the maintenance in the best practice in music and the theatre to be supported by state expenditure.”

The economic arguments undergirding this assertion generally center on failures in the market for the arts: Due to certain characteristics of the product, the unfettered private market would generate a suboptimal amount of it; hence the government must step in. The market failures generally cited involve the presence of beneficial externalities, the role of the arts as a public good, and to a lesser extent the informational asymmetries (between those who preserve the arts and those who will enjoy them in the future) involved in its production.

It is often presumed that there exist external benefits in the production and consumption of the arts: Their provision and enjoyment affect people besides the direct producers and consumers, and therefore the observed market signals will not lead to the socially optimal level of output. For instance, if for any reason the

existence of the arts provides benefits to a group wider than those who are directly paying for and consuming them, then the incentives to producers will (in a private market) be distorted downwards, and “too little” art will result.

Such externalities have been described by a number of writers (see, for example, Alan T. Peacock [1969] and generally take one or more of four basic forms. First, the arts have an educational function on a society-wide level: the more art, the more “cultured” the population will tend to be, all else constant. This external benefit leads to the argument that arts subsidies can optimize the amount of this education provided. Of course, this assumes that public subsidies of the production of art are the most effective way to undertake this education function, which might be a difficult argument to make convincingly (especially when compared with the effect of directly subsidizing educational institutions). This argument (and the others that follow) also assumes that government involvement in the arts has more or less the desired impact on the kind and amount of art produced.

Aside from the negative externalities (described below) that may result, it is also possible that *redundant and rising costs* (see Wolf [1993]) inherent to the government’s involvement may also be present which hamper these educational benefits. In other words, the involvement of the government in the market for arts may lead to inefficiencies (and production goals incompatible with these benefits) that increase the cost and change the character of the arts such that the welfare increase imagined from the correction of the original market failure does not in fact occur. For example, a possible explanation put forth in chapter two for the arguably Marshallian regime of arts dissemination at the government level was that the public sector is out of touch with the relevant market signals. If this is the case, then government’s involvement in the arts probably

characterizes a disjunction between costs and revenues that produces a less-than-optimal policy (from the standpoint of societal welfare). It is also possible, as chapter two discusses, that in reality the Marshallian approach is superior, but doesn't occur naturally in the private market due to problems on the part of the individual firms in directly appropriating the benefits of "Marshallian" investments (childrens' concerts, for example). If this were the case, then the government's actions would not be due to a "non-market failure" of government; rather, they would reflect an appropriate method of market failure correction.

Second, as Baumol and Bowen [1966] point out, current production and preservation of the arts not only affect the current generation, but presumably benefit future generations (who will enjoy the arts and culture preserved by the current generation) as well. Since these future beneficiaries don't affect the current private market in any obvious way, a positive externality is present.

Third, the arts can be a source of national pride, and their production in this way benefits many people who don't directly participate in their consumption. This argument is perhaps dubious, because it is not clear that the arts are a greater source of pride than something effectively provided by the private market. Nor is it clear that enhanced national pride itself is without drawbacks.⁴

The fourth argument is that the arts stimulate business and growth in a particular region. It is problematic as well: If this is the primary external benefit of the arts in an area, we may argue that the benefits it creates will tend to be matched by the costs to other areas who have not invested in this way. At the extreme, we can imagine a kind of prisoner's dilemma situation between areas,

⁴ Hitler's *Übermensch* is an example of a source/product of national pride which clearly produced considerable external cost.

where equilibrium exists at a suboptimally high level of art provision. Thus, one could envision the argument being made in which arts subsidies were considered to create a *negative* externality.

It should be pointed out that there are other negative externalities inherent in the production (and possibly the consumption as well) of the arts. Most obviously, it can be convincingly argued that “good” art is generally not purely uncontroversial. And to the extent that someone finds it offensive, a noninternalized cost is present. Another negative externality proceeds directly from the point made in the first and second chapters about subsidies’ reducing the necessity of looking at the demand side for solutions to the income gap. Such a reduction can only decrease a firm’s attention to price signals, and thus compromise the optimality of its decisions (in terms of profitability) in such areas as repertoire, scheduling, and performance venues.

In sum, one can identify several possible sources of external benefits and costs, each of which has the potential to distort the market for the arts. This can be represented neatly with the aid of a few equations, as is done in Appendix 4.

A market failure argument for arts funding closely related to that of positive externalities focuses on the role of art as a public good.⁵ This role will create an incentive for some not to be among those who pay for the arts, but rather among those who receive the cultural benefits for free. Basically, this argument maintains that such “freeriding” here will lead to underproduction, since there will naturally be a suboptimal (from a societal perspective) level of participation in the market.

⁵ A pure public good is defined as the limiting case of an externality: *All* of the benefits are appropriated by parties other than direct producers.

One possible defense of subsidies put forth recently by Don Fullerton (1991) encompasses both externalities and (pure) public goods arguments. Fullerton conceives of an interconnection between the utilities of art patrons and those who are exposed to the art thus created. The idea is that patrons have an interest in seeing that the population at large be exposed to the arts, for whatever reason; that is, patrons enjoy greater utility when society as a whole has the opportunity to enjoy more art.⁶ This situation defines an externality, but it also suggests that a public good is present: Potential patrons will be able to freeride on the patronage of others. And this will naturally lead to the underprovision of patronage.⁷ The role of the government in this situation would be to obligate participation of potential patrons, thereby making the whole of society better off. Imagining the entire population—or those above a certain income threshold for purposes of tax imposition—as being potential patrons, this amounts to taxation to finance arts subsidies.

A third market failure argument centers on asymmetric information, and is akin to Kenneth Arrow's (1963) justification for non-profit hospitals. The idea is that arts providers in a private market might not have any incentive to maintain adequate quality, as long as consumers have imperfect monitoring capabilities. For example, in the absence of observation by future generations of art lovers, art museums would undertake insufficient measures for collection conservation. This is perhaps of limited applicability to other branches of the arts, and it might be considered to be just a variation of the second externalities argument above.

⁶ Related to this notion, it might well be that philanthropy can be drawn out not just by development expenditure, but also by public attendance at performances. This would represent an interesting interaction between the Marshallian and Veblenian sources of utility from the arts.

⁷ This view of charity as a public good can be found in other places; see, for example, Lester Thurow (1971).

A final market failure argument involves distributional issues. If it is the case that in a private market the arts would be priced out of the range of most consumers, the market might fail because equal access to the cultural content they contain is not universal. And hence, the government, by subsidizing either production or consumption, can help to provide equality of opportunity to enjoyment of the arts.⁸ There are several obvious problems with this argument. First, it is a fact that in a market economy, there is unequal access to *every* good with a positive price. Thus, the argument must also be made that the arts are somehow fundamentally different from other goods in a way that warrants the government's circumventing the price system in their case. Second, if the conception of equality is expanded from *equality of opportunity* to also include *equality of outcome*, these subsidies might turn distributional results upside down: Depending on who consumes the most subsidized art, subsidies might well disproportionately benefit the most well-off members of society. Third, as noted in the earlier discussion of rentseeking as a positive explanation for arts funding, the capacity of arts subsidies to redistribute resources might lead to active attempts by the relatively well-off to do so (toward themselves), exacerbating the first problem and likely creating welfare losses.

It is important to note that aside from the market failure arguments outlined here, there are other justifications commonly put forward for publicly funding the arts. One of these arguments is that employment in the arts sector is thus created, although this is obviously difficult to justify on the grounds that the funds raised in taxes in some part represent employment *not* created in the sectors taxed. A potentially more compelling non-market failure argument is the subject of the fifth chapter: It is possible that public funds "leverage" private

⁸ See, for example, Feld et. al., [1983].

donations, and thus a fairly small subsidy can be disproportionately efficient at fighting cost disease. As that chapter points out, however, this is fundamentally an empirical question, and the opposite effect (in which public subsidies *crowd out* private philanthropy) might conceivably obtain instead.

Conclusions

Government funding for the arts, either subsidization (of consumption or production) that is direct via transfer payments or that which is indirect via tax law, can be examined on three different levels. First, one may consider the levels of subsidization that actually exist. Second, an explanation might be sought as to why governments in fact intervene in the production and consumption of the arts. And third, there may be a consideration of the normative arguments for and against government support. Policy analysis of the arts—even that primarily focused on the private sector—makes use of all three of these levels. To the extent that there is any public element to the product of arts firms (good or even bad), and given the practical inevitability of involvement of the government in the arts to one extent or another, knowledge of funding levels, an explanation for the existence of subsidies, and an understanding of the arguments for and against them can contribute to improving the conduct and performance of this industry.

One subject that has not been dealt with here is that of the optimal *implementation* of public arts policy. That is, if public subsidies are indeed indicated, how would they best be allocated? This is a very complex issue whose proper treatment would require separate chapters devoted to it, but one point bears making here, based on the work in chapter three: If the government's goals include for any reason the preservation of private arts firms, then a uniform treatment of all these firms (which mandates or restricts the use of funds) is likely not a good idea. Particularly with respect to size, it has been shown that

orchestras tend to differ very greatly in terms of the types of investments that best suit them. As such, it seems fair to conclude that subsidies that are earmarked for specific uses by *all* firms might well not be particularly productive (perhaps even counterproductive) for some.

The analysis of the private arts sector in this document, while geared specifically toward reaching conclusions of use in the optimal administration of arts firms, has also been informative in a number of specific ways in understanding issues in the public sphere. First, differential government funding patterns across countries may (for individual firms) create more or less need to manage demand, since high levels of subsidies remove the need to address difficult demand-side issues. Second, this funding might also reduce the *efficacy* of demand management by insulating the firm from market signals and thus inculcating bad management practices (with the attendant decrements to overall efficiency). Third, it has been shown that a positive explanation for government intervention might well be the actions of subsidy recipients themselves, since it was shown that certain types of investment are associated with subsequent changes in public subsidies. Fourth, the apparent preference of the public arts sector for a Marshallian demand-side approach over a Veblenian one may be either a good or bad thing in terms of efficiency: If this preference is purely the result of government's insensitivity to market signals, subsidies are probably difficult to defend; however, if this preference is a solution to market failures, the Marshallian approach may be a strategy that (on the whole) enhances both society's welfare *and* arts firms' profits. Finally, strategies to fight the income gap via increased subsidies might well impact (positively or negatively) avenues from private giving. While independence between these revenue sources was found in the data studied here, this might well not be the case for the sector as a whole.

7. CONCLUDING SUMMARY

Many arts firms are experiencing increasing costs, relative to their revenues. There are a number of possible explanations as to why; a more difficult problem involves how this might be combated effectively. I have argued in this dissertation that demand management represents at least a partial solution, if properly defined and pursued.

A *Veblenian* approach to expanding demand for the arts enhances the luxury image of the arts, while a *Marshallian* approach exposes new audience members to the arts. Empirically testing the effectiveness of these two approaches is difficult; however, one might argue that legitimate proxies for the approaches are tools at the firms' disposal whose use mirrors the central idea of each. Development expenditure, to the extent that it is generally designed to elicit elite philanthropy, can be thought of as creating an elite product (the benefits from this philanthropy) and hence is more Veblenian. Advertising expenditure, in that it is designed to encourage current nonsubscribers to attend events, is more Marshallian. Data on symphony orchestras suggest that each is effective, but the degree of effectiveness depends on characteristics of the orchestra: Fundraising and thus the Veblenian approach is more effective for smaller (in budget) orchestras; Advertising and therefore the Marshallian approach is better for larger orchestras.

Nonprofit arts firms generally have three major revenue sources: "earned revenue," that from private donations, and public subsidies. Obviously, it would be advantageous to stimulate these revenue sources simultaneously. Thus, it is important to understand whether any feedback between revenue sources in fact occurs. Claims have been made about the nature of this feedback; specifically,

about the relationship between private as opposed to public funds. Proponents of government arts funding have argued that public funds leverage private giving, whereas others have argued just the opposite, that government subsidies ought to crowd out donations. This claim can be tested empirically; evidence on symphony orchestras indicates that the two funding sources are in fact independent.

In addition to the demand-side remedies described here, a considerable amount of attention has been paid to the supply side of the arts firm's problem. One supply-side avenue that has not been systematically explored involves lowering costs by simulating a lower (marginal) wage faced by the firm. This might be achieved by substituting part-time or noncontracted freelance artists for some that are currently full-time. This suggests that semiprofessional arts firms might have a structural advantage in the fight against cost disease, in the absence of other remedies. The data on symphony orchestras support this finding.

The research presented here has made a number of points that can help to inform the discussion on the role of government in supporting the arts. For example, higher levels of government subsidies to the arts generally lessen the need for the demand management strategies outlined in earlier chapters. And when the demand side of the arts firm's problem is ignored, firms may ignore price signals and thus make suboptimal production (programming, for example) decisions. Also, since the finding was quite clear that different demand manipulation strategies are indicated for different-sized firms, public arts policy that treats all firms homogeneously and restricts the use of funds is almost certainly suboptimal.

The topics discussed in this dissertation have not been intended as a comprehensive analysis of private or public arts policy in general, but rather an in-depth look at several largely unresearched issues in this field. Many more such issues remain, many of which are explicitly outlined herein. My hope is that in so doing I have laid the groundwork for future work.

MATHEMATICAL APPENDICES

APPENDIX 1: COST DISEASE

With a simple model one can easily illustrate how productivity increases in the manufacturing sector could result in permanently higher wages for the economy as a whole as well as a higher output price for orchestras. For simplicity, imagine that our economy consists of just two firms: an orchestra and a steel mill. Further, say that the firms have the production functions:

$$\text{A.1.1)} \quad s = \alpha f(N_s, K_s)$$

$$\text{A.1.2)} \quad m = g(N_m, K_m), \text{ where}$$

s represents steel, m is music, N_s, N_m, K_s , and K_m represent the labor and capital inputs to the two industries, and α is a productivity parameter. Assume further that

$$\text{A.1.3)} \quad N_s, N_m, K_s, K_m \geq 0,$$

$$\text{A.1.4)} \quad \frac{\partial f}{\partial N}, \frac{\partial f}{\partial K}, \frac{\partial g}{\partial N}, \frac{\partial g}{\partial K} \geq 0,$$

$$\text{A.1.5)} \quad \frac{\partial^2 f}{\partial N^2}, \frac{\partial^2 f}{\partial K^2}, \frac{\partial^2 g}{\partial N^2}, \frac{\partial^2 g}{\partial K^2} \leq 0, \text{ and}$$

g and f are twice continuously differentiable. The parameter α is only in the first equation, of course, because we assumed at the outset that productivity advances don't affect the orchestra.

Since all labor and capital are used in either the mill or the orchestra, we can express the whole labor supply N as the sum of labor inputs to the two industries:

$$\text{A.1.6)} \quad N = N_s + N_m.$$

$$\text{A.1.7)} \quad K = K_s + K_m.$$

Assume that this economy is generally in competitive equilibrium (so economic profits in the aggregate are squeezed to zero) while individual firms might or might not be earning zero economic profits. This assumption translates in the case at hand to a noncompetitive orchestra (the only one in the city, perhaps) and a competitive steel mill (which represents the rest of the economy). Also, assume that no compensating wage differentials are present or that they have already been squeezed out. What does this simple model predict about the wage level and the price of the orchestra's product? Starting with the steel mill, using steel as the numeraire good (so its price is unity), and representing profits for the steel mill by π_s ,

$$\text{A.1.8)} \quad \pi_s = s - wN_s - rK_s = \alpha f - wN_s - rK_s$$

Since profits are assumed to be zero,

$$\text{A.1.9)} \quad \alpha f = wN_s + rK_s.$$

Assume that the conditions for the Implicit Function Theorem are met.

Then, equation 9) yields

$$\text{A.1.10)} \quad \frac{\partial w}{\partial \alpha} = \frac{f}{N_s} > 0, \text{ and}$$

$$\text{A.1.11)} \quad \frac{\partial r}{\partial \alpha} = \frac{f}{K_s} > 0.$$

Turning to the orchestra, the maximization problem is defined as

$$\text{A.1.12)} \quad \max_{N_m, K_m} \{ pg(N_m, K_m) - wN_m - rK_m \}.$$

where p is the price of music in terms of steel. The first-order conditions for a maximum yield

$$\text{A.1.13)} \quad w = p \frac{\partial g}{\partial N} \text{ and}$$

$$\text{A.1.14)} \quad r = p \frac{\partial g}{\partial K}.$$

The second-order conditions for a maximum are guaranteed by 5) above.

Plug equations 13) and 14) into 9). Then

$$\text{A.1.15) } \frac{\partial p}{\partial \alpha} = \frac{f}{N_s \frac{\partial g}{\partial N} + K_s \frac{\partial g}{\partial K}} > 0.$$

Equations 9), 10), and 14) provide the salient effect of cost disease:

- The orchestra's factor costs, w and r , will rise with the steel mill's productivity.
- Barring any outside supply- or demand-side remedies for cost disease, the equilibrium price of music p will rise with the steel mill's productivity as well.

APPENDIX 2: MICROECONOMIC MECHANICS FROM CHAPTER 3

The actual demand curves for the orchestra are difficult or in some (intangible) cases impossible to describe precisely, owing to the unit-of-measurement problem: what exactly constitutes “one unit” of the benefit from philanthropy to the philanthropist, or of the cultural benefit to society of an orchestra’s performing a concert? How then can we judge the demand-shifting effectiveness of the tools laid out here? Conveniently (but obviously not coincidentally), the tools examined here (expenditures on recording, fundraising, and advertising) shouldn’t affect the supply of these products. Thus, in searching for a proxy for demand shifts, we first ask what happens when demand increases but supply remains stable. In equilibrium, both the price and quantity will rise, given a well-behaved (upwardly-sloping) supply curve, which we will assume is the case here in the absence of any compelling reason to believe otherwise. When either price or quantity (or both) increase, there is a rise in total revenue, naturally, since total revenue is simply price times quantity. Thus, an increase in demand will be indicated in an increase in total revenue.

The idea here can be made clearer with the aid of a simple model. Assume that the inverse demand for one of the orchestra’s products can be expressed linearly:

$$\text{A.2.1)} \quad P = \theta - \Omega Q; \theta, \Omega > 0; \text{ and}$$

$$\text{A.2.2)} \quad \theta = \alpha + \beta_r r + \beta_f f + \beta_a a, \text{ where}$$

r =expenditures on recording,

f =expenditures on fundraising,

a =expenditures on advertising,

P =price of the orchestra's product,

θ =the demand intercept (a function of r , f , and a), and

α , β_r , β_f , β_a , and Ω are parameters.

Combining A.2.1 and A.2.2,

$$\text{A.2.3)} \quad P = \alpha + \beta_r r + \beta_f f + \beta_a a - \Omega Q.$$

Total revenue TR is price times quantity PQ , so

$$\text{A.2.4)} \quad TR = \alpha Q + \beta_r r Q + \beta_f f Q + \beta_a a Q - \Omega Q^2.$$

We can differentiate A.1.4 with respect to any of the tools; for example, a :

$$\text{A.2.5)} \quad \frac{\partial TR}{\partial a} = \beta_a Q.$$

We presumably are at a positive level of Q . Therefore, if we find econometrically that $\frac{\partial TR}{\partial a}$ is positive, it must be that $\beta_a > 0$.

We know from A.1.3 that $\beta_a = \frac{\partial P}{\partial a}$; that is, β_a represents the marginal effect of a on demand. Therefore, a finding that $\frac{\partial TR}{\partial a} > 0$ is equivalent to a finding that $\frac{\partial P}{\partial a} > 0$. In other words, a positive observed impact of a tool on total revenue, assuming that supply is constant, indicates a positive impact on demand.

While demand is hard to measure here, revenue is *not*, yet in this situation we know that they grant us much the same information. Thus, we can use three measures as proxies for the three demands:

- Concert revenues: demand for concerts;
- Donated revenues: demand for the benefits of philanthropy;
- Tax-supported revenues: demand for public cultural benefits.

Use of these proxies provides an additional benefit for free: Comparisons between the relative effectiveness of the tools can be made. If, for example, we

were to observe that a dollar of recording expense caused a greater increase in concert revenue than a dollar spent on fundraising, we could reasonably conclude that in the tangible case the former tool is more effective than the latter.

We are now in a position to look empirically at what originally seemed a vague problem.

APPENDIX 3: ECONOMETRIC ANALYSIS FROM CHAPTER 3

The models estimated for each of the two data sets appear below.

$$\text{A.3.1) } \ln\left(\frac{TRC_t}{c_t}\right) = \alpha_0 + \alpha_1 \ln\left(\frac{r_{t-i}}{c_{t-i}}\right) + \alpha_2 \ln\left(\frac{f_{t-i}}{c_{t-i}}\right) + \alpha_3 \ln\left(\frac{a_{t-i}}{c_{t-i}}\right) + u_{C,t-i},$$

$i=0, 1, 2;$

$$\text{A.3.2) } \ln\left(\frac{TRP_t}{c_t}\right) = \eta_0 + \eta_1 \ln\left(\frac{r_{t-i}}{c_{t-i}}\right) + \eta_2 \ln\left(\frac{f_{t-i}}{c_{t-i}}\right) + \eta_3 \ln\left(\frac{a_{t-i}}{c_{t-i}}\right) + u_{P,t-i},$$

$i=0, 1, 2;$

$$\text{A.3.3) } \ln\left(\frac{TRG_t}{c_t}\right) = \gamma_0 + \gamma_1 \ln\left(\frac{r_{t-i}}{c_{t-i}}\right) + \gamma_2 \ln\left(\frac{f_{t-i}}{c_{t-i}}\right) + \gamma_3 \ln\left(\frac{a_{t-i}}{c_{t-i}}\right) + u_{G,t-i},$$

$i=1,2;$ where

c = the number of concerts per period performed by the average orchestra in each group;

r = expenditures on recording/broadcasting

f = expenditures on fundraising/development

a = expenditures on advertising

TRC = total concert revenue;

TRP = total philanthropic revenue;

TRG = total government-generated revenue.

The variable c was used to deflate the orchestras' measures, making them more comparable to one another.

In the *Wolf Report* data, there was insufficient variation in the raw data due to the fact that each observation was actually an average across many; thus, the regressions were run on first differences of the logs instead, which provided enough variation such that the standard errors of the coefficients were acceptably small. For each data set, equations of the model in which $i=0$ were estimated using two-stage least squares regression analysis in order to satisfy the

orthogonality condition.¹ Equations in which $i \geq 1$ were able to be estimated using standard OLS techniques, since the endogeneity cannot be present given the lag in the independent variables.

In the *Wolf Report* data, the natural heteroscedasticity from using data on group averages was corrected for by multiplying all the observations of the independent and dependent variables by the square root of the size of the group to which it belonged.² In the second set, heteroscedasticity was not found to be present. However, there was evidence of significant autocorrelation; to correct for this, different (Theil-Nagar) serial correlation terms were used in each cross-section.³

Following N. Mantel [1970], backwards stepwise regression was used in estimating the models: Insignificant variables were taken out of the regressions one by one in such a way that the overall significance of each regression was maximized.

In order to obtain the estimates in Table 1, the models above were estimated, producing the coefficients that follow below. Then, the marginal effect (on a certain type of revenue) of a \$1 investment on a particular tool was “backed out” of these elasticity estimates using the average values of the tools and total revenues for the four large orchestras (for the “large orchestra” estimate) as well as for the three smallest groups from the *Wolf Report* (for the “small orchestra” estimate). Then, the marginal effects of each tool in each

¹ A fall in revenues might stimulate a particular expenditure, creating endogeneity in the model and thus violating orthogonality between the regressors and the residuals. This violation would lead to inconsistent estimates of the coefficients.

² Any autocorrelation present would be difficult to correct for: in light of the relatively small size of each panel, the estimate of each r is extremely imprecise. The use of this estimate could very easily lead to regression results that are less accurate than those constructed upon simple first-differencing.

³ The estimate of ρ followed the suggestion of H. Theil and A. L. Nagar [1961] of using a simple adaptation (for small samples) of that derived from the Durbin-Watson statistic.

period (discounted if appropriate) on each revenue type were summed up. The aggregate effect on profits or deficits required subtracting \$1 from each sum (such that the figure reflected total revenue changes minus a dollar spent on the tool).

The Effects of the Tools on the Demand for the Tangible Product

Tables A.3.1 and A.3.2 (which follow this appendix) present the results for each of the two data sets of regressing this period's total concert revenues on the tools from this period as well those from the preceding two periods. The coefficients reported are elasticities of *TRC* with respect to each of the tools: the percentage change in *TRC* caused by a one percent change in each tool.

The Effects of the Tools on the Demand for the Intangible Excludable Product

Tables A.3 and A.3.4 present the results for each of the two data sets of regressing this period's total donated revenues on the tools from this period as well those from the preceding two periods in order to determine the elasticities of *TRP* with respect to each, as well as any trend over time.

The Effects of the Tools on the Demand for the Intangible Nonexcludable Product

Tables A.3.5 and A.3.6 give the results for each of the two data sets of regressing this period's tax-supported revenues *TRG* on the tools from last period as well those from two periods ago. A regression on this period's tools is not assumed to be meaningful since the public support an orchestra receives this season is certain to have been appropriated previously, and hence if the decision is at all dependent on the actions of the orchestra, those actions must have occurred previously as well.

Table A.3.1—Results of Backwards Stepwise Regressions of TRC (period t) on *r*, *f*, and *a* (in periods t, t-1, and t-2) Data: *Wolf Report*

Period	St. err. of est.	Obs.	Record- ing expenses	Fund- raising expenses	Advertis- ing expenses	Con- stant	R ²	R ² (adj.)	F
t	0.85	42	0.06 (2.07)	0.42 (6.00)		0.031 (0.21)	0.54	0.52	23.33
t-1	1.24	36		-0.17 (-1.96)		0.34 (1.62)	0.10	0.07	3.83
t-2									

NOTE: t-statistics in parentheses; empty boxes indicate the variable was removed by stepwise regression.

*No significant variables.

Table A.3.2—Results of Backwards Stepwise Regressions of TRC (period t) on *r*, *f*, and *a* (in periods t, t-1, and t-2) Data: *Four Large Orchestras*

Period	St. err. of est.	Obs.	Record- ing expenses	Fund- raising expenses	Advertis- ing expenses	Trend	Const.	R ²	R ² (adj.)	F
t	0.27	44	0.21 (3.68)		0.79 (10.60)		2.53 (5.50)	0.89	0.89	166.49
t-1	0.34	40			0.91 (20.14)	-0.07 (-4.04)	3.11 (16.40)	0.93	0.92	230.52
t-2	0.58	36	0.38 (5.62)		1.18 (20.57)	-0.13 (-4.26)	1.05 (3.69)	0.96	0.95	241.96

NOTE: t-statistics in parentheses; empty boxes indicate the variable was removed by stepwise regression

Table A.3.3—Results of Backwards Stepwise Regressions of *TRP* (period *t*) on *r*, *f*, and *a* (in periods *t*, *t*-1, and *t*-2) Data: *Wolf Report*

Period	St. err. of est.	Obs.	Record- ing expenses	Fund- raising expenses	Advertis- ing expenses	Constant	R ²	R ² (adj.)	F
<i>t</i>	0.46	42		0.71 (12.48)		-0.16 (-1.23)	0.93	0.93	523.71
<i>t</i> -1	1.50	36	-0.08 (-1.81)		-0.48 (-4.24)	0.24 (0.94)	0.36	0.32	9.14
<i>t</i> -2*									

NOTE: t-statistics in parentheses; empty boxes indicate the variable was removed by stepwise regression.

*No significant variables.

Table A.3.4—Results of Backwards Stepwise Regressions of *TRP* (period *t*) on *r*, *f*, and *a* (in periods *t*, *t*-1, and *t*-2) Data: Four Large Orchestras

Period	St. err. of est.	Obs.	Record- ing expenses	Fund- raising expenses	Advertis- ing expenses	Trend	Const.	R ²	R ² (adj.)	F
<i>t</i>	0.32	44	0.29 (8.43)		0.48 (5.05)		3.35 (6.64)	0.83	0.82	98.38
<i>t</i> -1	0.36	40		0.33 (2.03)	0.61 (4.87)	-0.04 (-2.48)	2.17 (8.43)	0.90	0.90	113.43
<i>t</i> -2	0.47	36			0.92 (13.76)	-0.06 (-2.09)	2.25 (8.16)	0.88	0.87	117.07

NOTE: t-statistics in parentheses; empty boxes indicate the variable was removed by stepwise regression.

Table A.3.5—Results of Backwards Stepwise Regressions of *TRG* (period *t*) on *r*, *f*, and *a* (in periods *t*-1 and *t*-2) Data: *Wolf Report*

Period	St. err. of est.	Obs.	Record- ing expenses	Fund- raising expenses	Advertis- ing expenses	Constant	R ²	R ² (adj.)	F
t-1	1.65	36			-0.34 (-2.84)	-0.25 (-0.91)	0.19	0.17	8.07
t-2*									

NOTE: t-statistics in parentheses; empty boxes indicate the variable was removed by stepwise regression.

*No significant variables.

Table A.3.6—Results of Backwards Stepwise Regressions of *TRG* (period *t*) on *r*, *f*, and *a* (in periods *t*-1 and *t*-2) Data: Four Large Orchestras

Period	St. err. of est.	Obs.	Record- ing expenses	Fund- raising expenses	Advertis- ing expenses	Trend	Const.	R ²	R ² (adj.)	F
t-1	1.05	40		-0.98 (-1.92)	1.79 (5.23)	-0.12 (-2.17)	1.24 (0.80)	0.45	0.40	9.82
t-2	0.55	36	0.12 (2.07)		0.94 (14.07)	-0.15 (-4.48)	0.19 (1.05)	0.94	0.93	154.73

NOTE: t-statistics in parentheses; empty boxes indicate the variable was removed by stepwise regression.

APPENDIX 4: EXTERNAL COSTS AND BENEFITS FROM THE PRODUCTION AND CONSUMPTION OF THE ARTS

One can identify several possible sources of external benefits and costs from the production and consumption of the arts, each of which has the potential to distort the market. This can be represented neatly with the aid of a few equations.⁴ First, if we define the marginal cost to an artist (agent i in the economy) from producing the j th painting as c_{ij} , and the price paid for it to i as b_{ij} , then the cost to society (comprised of n agents), both directly to the artist and indirectly (in terms of the negative externalities described above) to the rest of society from painting j is:

$$\text{A.4.1) } c_{ij} + \sum_{k=1}^n c_{kj}, k \neq i,$$

and the total benefit, both directly to the artist and indirectly to the rest of society from painting j would be:

$$\text{A.4.2) } b_{ij} + \sum_{k=1}^n b_{kj}, k \neq i.$$

Assuming the artist acts to maximize utility, in equilibrium, $c_{ij} = b_{ij}$. This is not the end of the story, however, if externalities are present. Specifically, under these circumstances the equimarginality condition can be adapted to one of three forms.

I. Painting j creates a pure positive externality:

$$\text{A.4.3) } \sum_{k=1}^n c_{kj} = 0, \text{ and (assuming the externality is uncorrected),}$$

$$\text{A.4.4) } c_{ij} < b_{ij} + \sum_{k=1}^n b_{kj}, k \neq i.$$

⁴ This discussion follows quite closely that in Wolf [1979].

II. Painting j creates a pure negative externality:

$$\text{A.4.5) } \sum_{k=1}^n b_{kj} = 0, \text{ and (assuming the externality is uncorrected),}$$

$$\text{A.4.6) } c_{ij} + \sum_{k=1}^n c_{kj} > b_{ij}, k \neq i.$$

III. Painting j creates both a positive and a negative externality:

$$\text{A.4.7) } c_{ij}, b_{ij} > 0, \text{ and}$$

$$\text{A.4.8) } \left[c_{ij} + \sum_{k=1}^n c_{kj} \right] \begin{matrix} \geq \\ \leq \end{matrix} \left[b_{ij} + \sum_{k=1}^n b_{kj} \right], k \neq i.$$

For obvious reasons, the sign in equation 8) is ambiguous. Case III being almost certainly the one actually faced, therefore, the task is to sign this equation in order to determine the proper course of public policy toward the arts. If society's marginal benefits exceed the costs—the case of a net external benefit—a case can be made to encourage greater production and consumption. On the other hand, if society's marginal costs exceed the benefits—the case of a net external cost—it could be argued that the arts should be discouraged.

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