

DO ARTISTS SUFFER FROM A COST-DISEASE?

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ABSTRACT

We consider the Baumol–Bowen cost-disease argument from the perspective of an artist's occupational choice. Both theory and evidence suggest that the incentives to create art do not diminish and probably increase in a growing market economy. First, countervailing factors may check or limit the operation of the cost-disease. Second, artists can increase their productivity by generating new ideas. New ideas provide the base for all productivity improvements, whether in the arts or in industry. Third, the arts are not necessarily labor-intensive, as cost-disease proponents allege. Fourth, the available statistical evidence implies that economic growth has favorable effects on artistic production.

I. The Cost-disease Argument

Artists, like all rational agents, use means to achieve ends; a logic of choice governs creative behavior. Artists allocate their money and time to seek a variety of goals, including wealth, fame and the joy of self-expression.

The growing wealth of a market economy changes the opportunities and constraints facing artists, and therefore affects the quantity and quality of art as well. At least since the 18th century, social scientists and cultural critics have debated the fate of the arts in a market economy. Adam Ferguson and Adam Smith argued that the increasing division of labor in a market economy supports artistic quantity and diversity. Samuel Johnson believed that artistic freedom increased with the number of buyers in the market. David Hume took a more pessimistic view. He claimed that increased dissemination of the great works of the past would discourage future artistic competitors. Translations of Homer and Virgil, for instance, would present so high a standard as to deter modern writers. Later critics, such as Alexis de Tocqueville, believed that commercialized arts pandered to mass taste at the expense of quality.¹

In this paper we survey and evaluate one contemporary claim made about the arts in a market economy, the so-called ‘cost-disease’ argument. Modern rational choice treatments of the arts focus on the cost-disease as the most important force militating in favor of pessimism. We survey the available criticisms of the cost-disease argument and add several of our own.

The cost-disease argument asserts that market forces will cause labor-intensive activities to contract, as a share of gross national product, in a growing economy. Rising real wages increase the opportunity cost of artistic production. Wages do not rise proportionately in the performing arts because technological progress supposedly favors capital-intensive economic sectors.²

William Baumol and William Bowen, in *Performing Arts: The Economic Dilemma* (1966), first presented the performing arts as a labor-intensive activity doomed to decline. Baumol and Bowen (1966, 171) summarized their thesis in the following manner:

The central point of the argument is that for an activity such as the live performing arts where productivity is stationary, every increase in money wages will be translated automatically into an equivalent increase in unit labor costs – there is no offsetting increase in output per man-hour as there is in a rising productivity industry. This leads to an important corollary: the extent of the increase in relative costs in these activities where productivity is stationary will vary directly with the economy-wide rate of increase in output per man-hour. The faster the general pace of technological advance, the greater will be the increase in the over-all wage level, and the greater will be the upward pressure on costs in any industry which does not enjoy increased productivity.

The example of the string quartet illustrates the operation of the cost-disease. Today’s string quartet appears hardly more productive than a string quartet in the 18th century. In 1780 four quartet players required 40 minutes to play a Mozart composition; today 40 minutes of labor are still required. Yet the opportunity cost of employing labor in alternative endeavors rises with economic growth. Would-be quartet members or servants are not worse off because they can now take lucrative jobs as engineers. But the real quantity of string quartet performances will decline as a percentage of national income, and may even decline in absolute terms.³

Contrary to most previous writings, we view the cost-disease from the perspective of the artist. Whereas cost-disease theorists focus on cost increases on the production side, we examine the rationality of becoming an artist in a growing economy. Section II considers the role of income effects in checking the cost-disease phenomenon. Economic growth may provide countervailing forces which cause the arts to

prosper, rather than to decline. Section III provides a more fundamental criticism of the cost-disease argument. Productivity improvements in all areas, including the arts, depend upon labor-intensive human creativity. Section IV questions whether the arts are in fact labor-intensive under more traditional definitions of that concept. Section V presents evidence on whether the arts have flourished or declined with economic growth. In accord with the theoretical approach of this paper, we measure the activities of artists, rather than merely measuring the pecuniary costs of artistic production.

II. Income Effects

The most common criticism of the cost-disease invokes the positive income effects created by economic growth. The cost-disease argument focuses on the substitution effect of rising wages but does not emphasize the resulting income effects. To the extent that artistic products are normal goods, greater wealth increases the demand for art. If demand for the arts rises faster than artistic costs, the arts may expand or remain constant as a fraction of national income.⁴

Many artistic products are luxury goods; that is, income increases will lead to more than proportional increases in demand. The wealthy and relatively wealthy usually account for a large percentage of the market for high-quality artworks, theater performances, opera and numerous other artistic creations (Bourdieu 1984).

To isolate the positive effects of wealth, consider an extraordinarily wealthy society. Imagine, for instance, that productive technologies allow huge amounts of output to be created by minuscule investments of labor and energy; perhaps all of the world's current (non-artistic) output could be produced by one machine plus one day of labor. We would expect the relative share of art in national product to be very high in such a world. Despite this phenomenal level of productivity, high real wages would not pull all labor into non-artistic sectors. Rather, individuals would use their wealth to consume large amounts of leisure time, read books, attend concerts, paint and sculpt, etc.

The Joy of Creative Labor

The desire of artists to consume non-pecuniary benefits strengthens the positive role of income effects. As the absolute level of wages rises across the board, individuals will move into those employments with relatively high non-pecuniary returns; the marginal utility of seeking

additional pecuniary returns is falling. Comfortable and enjoyable jobs will replace risky, dangerous and physically arduous jobs. To the extent that individuals find artistic work to be enjoyable or otherwise rewarding, labor will move into the art sector. Higher levels of wealth increase the willingness of individuals to make pecuniary sacrifices to become artists.⁵

The cost-disease argument neglects this effect. First, the argument focuses on a falling relative wage for art but does not emphasize the results of the rising absolute wage for art. Second, the argument implicitly treats artists as motivated by pecuniary returns alone.

The increasing ability of a market economy to finance non-pecuniary benefits may spur artistic creation through several mechanisms. First, the growing non-pecuniary benefits of *non*-artistic jobs have supported artistic creation. Many well-known cultural innovators have worked at non-artistic endeavors. T.S. Eliot worked in a bank, and then as an editor, while he wrote his most renowned poetry; James Joyce taught in a language school; Wallace Stevens pursued a full-time career in the insurance industry; and William Carlos Williams was a physician, all while producing major works. One survey of contemporary New England artists showed that 76 percent held part-time jobs (Wassall and Alper 1992). Had these jobs consisted of hard physical labor, part-time artistic creation would have been far more difficult.⁶

Second, increasing wealth has supported artists through family funds and bequests. The French cultural blossoming of the 19th century relied largely upon family support. French painters who lived from family wealth include Delacroix, Corot, Courbet, Seurat, Degas, Manet, Cézanne, Toulouse-Lautrec and Moreau; the list of writers includes Baudelaire, Verlaine, Flaubert and Proust. These individuals, possessing enough wealth to live comfortably, devoted their time to creative pursuits, rather than to maximizing monetary income.⁷

Third, a high stock of wealth serves as a buffer against initial commercial rejection in those professions where the producer must educate or persuade his or her audience. Prospective artists are often met first with ridicule or indifference (Bowness 1989), even if they later achieve great renown. Creators establish their reputation only after a long process of propagandizing and exposing their audience to a new artistic vision. Many of the French artists listed above, who lived off family wealth, required several decades to achieve critical and commercial recognition.⁸

Artists often cannot borrow against their future earnings because they cannot credibly demonstrate their forthcoming success to potential

creditors. These artists need a cushion of funds—either from family or from another job—while they try to convert their audience. Rich societies with high wages provide these cushions more effectively than poor societies do. Paul Gauguin, for instance, supported his career as a painter with accumulated funds from his earlier work as a stockbroker.

Fourth, rising wealth supports a growing number of profitable artistic niches. Adam Smith's dictum that 'division of labor is limited by the extent of the market' applies to the arts as well. In the 18th century, only the handful of authors who wrote bestsellers could live from their writing (Collins 1927). Today, authors of many different kinds make a living from their craft, even if they do not write bestsellers. Science fiction, mystery novels, spy novels, crime stories, romances, high-brow classics and numerous other styles all support a considerable number of full-time authors. Richer societies, by affording more extensive specialization, support greater artistic diversity.⁹

Fifth, the greater artistic diversity of wealthy societies increases the non-pecuniary returns to creating art. Artists stand a greater chance of being able to produce to suit their own tastes, rather than to suit the tastes of the public. The potential for profitable specialization therefore draws more individuals into the artistic professions.

The Cost-disease and the Benefits of Trade

The above-mentioned arguments indicate that the cost-disease argument is at best true *ceteris paribus*; the performing arts need not stagnate once all relevant factors are taken into account. The cost-disease pinpoints a single tendency—the reallocation effect of rising wages—and does not consider other, more positive effects of economic growth.

The cost-disease argument is therefore analogous to the 'brain drain' argument in international trade theory that trade immiserates low-growth countries. Consider an international trade model with a slow-growth labor-intensive country and a high-growth capital-intensive country. The cost-disease argument implies that allowing the two countries to trade (both capital and labor resources) will impoverish the low-growth country. Just as rising wages induce labor to switch from art to engineering in the cost-disease argument, higher wages in the richer country will induce labor to migrate there. A brain drain can cause the output of the poorer country to fall in either relative or absolute terms. The cost-disease argument, in essence, applies the brain drain critique of trade to the arts and the service sector.

The cost-disease argument, however, focuses upon one effect of

trade—migration of labor. Just as the brain drain critique of trade does not hold true a priori, neither does the cost-disease. Other positive effects of trade and market exchange, discussed above, imply that trade may increase welfare and output in the low-growth country or in the arts sector, as the case may be.¹⁰

III. The Creativity of Labor

Invoking the creativity of human labor challenges the very logic of the cost-disease argument. Creative labor breaks the link, postulated by the cost-disease argument, between capital-intensive economic sectors and high productivity gains. Labor contributes to productivity by generating new ideas. Alternatively, we can define new ideas as a form of human capital. Under either classificatory scheme, labor remains the ultimate source of capital improvements.

The discovery of new ideas belies the claim that today's string quartets are no more productive than string quartets in the day of Mozart. A string quartet in 1780 could play Mozart and Haydn. Today's string quartet can play Mozart, Haydn, Beethoven, Brahms, Bartok and Shostakovich. The Kronos Quartet plays Jimi Hendrix and other contemporary works. Creative musicians may go even further and eschew strings for the instruments of blues, rock and roll or jazz. The growing diversity of musical composition and performance represents a productivity increase.

The cost-disease argument begs the question of productivity increase by comparing a Mozart performance in 1780 with a Mozart performance today. By taking both inputs and outputs as constant, the postulated comparison eliminates new ideas as a source of productivity improvement. The Mozart example makes the performing arts appear stagnant by treating artistic creation as a fixed, unchanging activity.

The point is not merely that creative labor can overcome the cost-disease by innovating. More fundamentally, labor inputs—by generating new ideas—provide the ultimate source of nearly all productivity improvements (excepting exogenous changes in weather, etc.). Labor-intensive industries do not, even in principle, face a productivity disadvantage.

The cost-disease argument implicitly treats capital-intensive sectors as autonomous carriers of technological progress and thus cost reductions. But increases in the productivity of capital depend upon creative human labor, just as the arts do. Technological progress requires the

'performing art' of the scientist and engineer. All economic sectors rely on the creativity of labor and thus face a productivity problem that is similar in kind.¹¹

The cost-disease argument applies most appropriately to given, repetitive tasks performed with a fixed technology. Such tasks can be either capital-intensive or labor-intensive. A relatively high proportion of labor inputs does not necessarily fix the productive technology of an endeavor.

A simple example illustrates the potentially higher productivity growth of labor-intensive industries. Assume that two groups of scientists seek to improve the technology of superconductivity. The first group has much better equipment, but far fewer scientists. The second group has inferior equipment but many more scientists. Why should the first, more capital-intensive 'sector' be expected to yield higher productivity growth a priori?

IV. Are the Performing Arts Labor-intensive?

The performing arts are not always labor-intensive, even apart from considering new ideas as a form of human capital. Even under traditional definitions of capital-intensity, artistic productions may involve significant capital costs. Contemporary movies are replete with expensive special effects, opera companies use costly theaters, stages and equipment, and rock musicians rely upon studio time and electronic technology, to name but a few examples.

Artistic products can be capital-intensive in fairly subtle ways. Production of a string quartet performance, for instance, involves more than sitting four musicians in a room and having them play Beethoven. The players must discover each other's existence, maintain their health and mental composure, arrange transportation for rehearsals and concerts, train in comfortable settings, and receive quality feedback from critics and teachers. Recording technology allows them to play back their performances and discover potential improvements. In each of these areas the richer, technologically progressive economies tend to surpass the productivity of poorer economies.

The arts have tended to flourish in relatively large and wealthy cities. Florence, Paris, Vienna and New York provide but a few examples of cities that have nourished closely knit communities of artistic talent. Artists learned from each other and sharpened their skills in these highly competitive environments. Support of these artistic communities

required a wealthy and diverse metropolis, usually dependent upon industry, either directly or indirectly, for its prosperity.¹²

The link between art and industry is sometimes direct. The painting breakthroughs of the 19th-century French Impressionists, for instance, relied heavily on capital technologies. The tin paint tube, introduced in the 1840s, allowed the artist to bring work outside and leave behind the falseness of studio light. (Before the invention of the tube, paint was transported awkwardly in small laced bags made from pig bladders.) Paint preparation ceased to be a major chore requiring specialized expertise, and prepared canvases became widely available. Business entrepreneurs packaged outdoor painting equipment in ready-to-use form, complete with easel, colors and parasol.

The innovative colors of Impressionist painting were derived from new industrial technologies. The Impressionist palette used bright pigments based on synthetic inorganic materials, such as chromium, cadmium, cobalt, zinc, copper and arsenic. The materials for these colors came from the expanding chemical and metallurgical trades in France and Germany.¹³

Today the relatively low cost of travel allows artists to view paintings at their leisure. No longer must a budding artist undertake an arduous and expensive journey to Italy by coach to study the Old Masters. We can now purchase an airplane ticket and arrive after several hours of flying. Alternatively, we can view beautiful color plates of the works in modern picture books. Painting first-rate pictures may in fact be a highly capital-intensive endeavor, if we consider all of the relevant investments and support services required.

The relevant definition of capital-intensity should account for the entire array of costs over time, and not merely the capital-labor ratio at any particular moment in time. The economic sectors fated to decline are those with a relatively unfruitful array of potential future technologies. These industries may be either labor-intensive or capital-intensive in terms of current cost shares. The *current* cost share of labor does not necessarily reflect the potential for *future* cost-reductions through improved capital productivity. New ideas can rapidly turn formerly labor-intensive activities into capital-intensive activities. Stagnant sectors must remain labor-intensive in perpetuity; labor-intensity at a single point in time does not suffice to infer future stagnation.

The technologies of recording and radio demonstrate how an originally labor-intensive industry can expand by increasing its capital-intensity. Electronic reproduction has vastly improved the productivity of the string quartet. Even if the number of musical performances does

not rise, the quantity of performance output, measured in consumption units, has skyrocketed. Musical production may have appeared labor-intensive in 1860, but by 1930 it was decidedly capital-intensive.¹⁴

As the costs of electronic reproduction fall, musical production eventually returns to being a labor-intensive industry. The return to temporary labor-intensity, however, need not herald future stagnation. Music, like other economic sectors, can ride successive waves of production and marketing innovation. Recording and radio were followed by the long-playing record, the transistor and the compact disc. The potential for capital-intensive innovations is exhausted only when the product is no longer scarce.

Baumol, Blackman and Wolff (1985; 1989, 131–5) recognize the productivity of recording but claim that such new technologies only postpone an inevitable decline. We now have a new industry, consisting of a string quartet combined with the recording technology in fixed proportions. According to the response, this new industry is ‘asymptotically stagnant’ and eventually becomes subject to the original cost-disease dilemma. As the cost of recording falls with technological progress, the cost of human labor again forms an especially high percentage of industry costs, setting the cost-disease in motion again.¹⁵

The cost-disease argument, however, loses much of its force with this maneuver. Musical production is returned to a labor-intensive industry only by *growing* relative to other endeavors. The performing arts have been helped by their return to labor-intensive status, not penalized. Music has achieved labor-intensive status through successfully reducing capital costs; in other words, music has pursued precisely that strategy which is supposed to give capital-intensive sectors a relative advantage.

The reasoning of Baumol, Blackman and Wolff on recording, if applied consistently, would imply that all industries suffer from an eventual cost-disease. Either the industry is already labor-intensive, or an industry is capital-intensive and thus is doomed to become labor-intensive eventually, as capital costs fall. Yet not all industries can decline in relative terms.

The performing arts supposedly face asymptotic stagnancy to an especially high degree because they combine labor and capital in fixed proportions (Baumol, Blackman and Wolff 1985; Baumol and Baumol 1984b). But technological progress can falsify the fixed proportions assumption. Changing technologies for electronic reproduction alter the capital–labor ratio for marketing artistic performances. We do observe an irreducible and indivisible unit of labor—four musicians—for a

quartet performance. Such indivisibilities, however, should not induce relative decline. The fundamental indivisibility of labor required to play a quartet does not differ in principle from the necessity of some indivisible unit of labor (there are no fractions of laborers) in all occupations.

Cost-disease proponents also might claim that recording removes music from the category of a performing art. This reply would trivialize the cost-disease argument through semantics. Electronic reproduction does make the performing arts more productive if we measure productivity in terms of consumption units. A given performance can now reach a larger number of consumers, and can substitute for a greater number of produced performances. We may cease to call recordings 'performance', but consumers are receiving musical services nonetheless.¹⁶

V. Empirical Evidence

The statistical evidence offered in support of the cost-disease does not address the relevant empirical issues. Typically, economists have selected one cultural sector, such as theater, opera or symphony concerts, and measured the path of per unit costs over time. Baumol and Bowen, in a number of studies (1966, Ch. 8), typically found that such costs are rising. Baumol, Blackman and Wolff (1989, Ch. 6) offer evidence that service industries in general enjoy lower rates of productivity growth than manufacturing.¹⁷

These studies do not measure productivity accurately for several reasons. First, the productivity measures used in the studies do not account for increases in product quality. Second, the productivity measures do not account for increases in the diversity of the cultural repertoire. If a symphonic season of all classical works is replaced by a smaller symphonic season and a larger number of rock and roll concerts, concert-goers have greater ability to pick and choose the music they wish to hear. Consumer welfare may rise, even though measured productivity may remain constant. Since most of the music sold in a record store, or offered in live performance, is of recent vintage, consumers apparently place great value on the continual increase in diversity.¹⁸

Third, the studies examine only narrow definitions of live performance: The output-enhancing effects of recordings, video cassettes, laser discs, radio and television are not considered. Modern viewers,

with access to the video store, the book and public television, have better access to Shakespeare than the Elizabethans did. The studies measure only per unit costs for a live performance, not per unit costs for how many performances are consumed by the entire audience. The value of a performance is measured as a private good, when in fact performance has become an (excludable) public good through electronic reproduction.

Fourth, cost-disease studies usually select performing arts that are in a stage of relative decline. Opera, for instance, is largely an art form of the 18th and 19th centuries, theater has lost out to movies, and the symphony orchestra has lost favor to jazz, rock and roll, and country music. Proponents of the cost-disease do not measure per unit costs for the numerous areas that have grown rapidly in the 20th century.

Live performance has not declined in general, even though specific kinds of live performance have fallen out of favor. Concert performances of rock, jazz and other modern musical forms continue to flourish. Comedy clubs are popular, book readings are held frequently in book superstores, and sports attendance is booming. Some commentators may not like the new kinds of live performance as much as the old, but this judgment is irrelevant to the truth of the cost-disease argument, which takes consumer preferences as given.¹⁹

We conduct some alternate tests of the cost-disease argument. Consistent with our theoretical approach, these tests consider whether cultural production has become less desirable from the artist's point of view. These tests show that the number of artists has been increasing as a percentage of the population and total labor force, artists' earnings have been rising faster than the national average, and artists are achieving superior educational opportunities over time (which may be a proxy for greater human capital).

We test the applicability of the cost-disease to the arts rather than the cost-disease per se. As discussed above, measuring the labor-intensity of the arts is difficult. Since we propose no satisfactory operational measure for the relevant concept of capital-intensity (i.e. the potential for technological improvements over time, as discussed in section IV), we cannot distinguish between the following two possibilities: (a) the cost-disease argument is empirically falsified; and (b) the cost-disease argument is not necessarily false but simply does not apply to the arts. Under either possibility, however, the arts do not suffer from a cost-disease.

Our data are taken from a recent study by the National Endowment for the Arts, entitled *Trends in Artist Occupations: 1970–1990* (1994).

The data cover American artists only, and are restricted to the 1970–90 period.

The evidence shows that artists have established themselves as an increasing share of the population in the last 20 years (see Figure 1). In every region of the US, the number of artists has grown faster than the labor force. In the US as a whole, the number of artists has increased by almost 127 percent, while the labor force has grown by only 54 percent. Thus, artists as a group have been increasing faster than non-artists. Artists also have grown as a percentage of the US labor force, rising from 0.92 to 1.4 percent over two decades (see Figure 2).

Artists also have been outpacing non-artists in wage increases. Figure 3 plots the percent changes in median household income for the labor force, artists and specific artistic occupations. As the figure illustrates, the household income of artists has increased by 14.8 percent, while the income of the labor force has increased by only 7.2 percent. Artistic income has not fallen absolutely or relatively over this 20-year period. Even arts which might appear to be relatively labor-intensive, such as music, composing and painting, have had wage increases that greatly surpass that of the labor force.

The data also show that artists have increased their acquisitions of

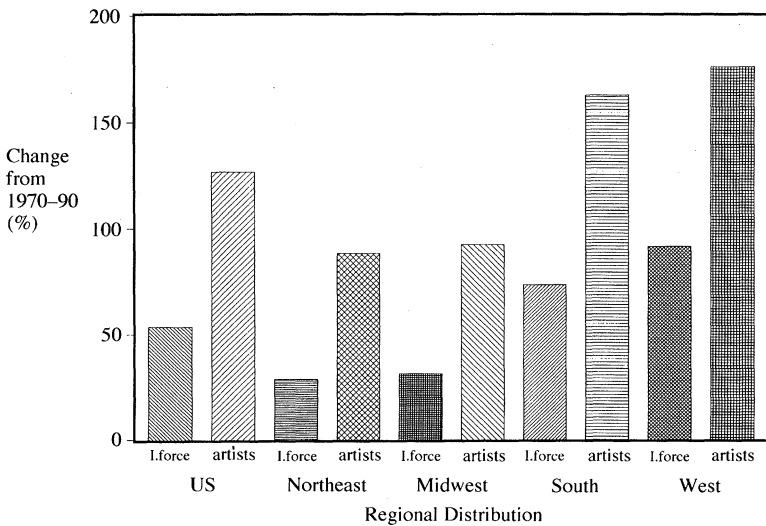


Figure 1. Growth in the number of artists compared with labor force growth in the US and by region, 1970–90

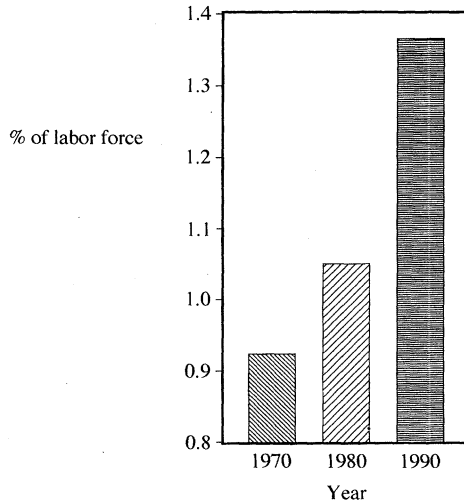


Figure 2. Artists as a percent of the total labor force, 1970–90

human capital, at least if we take education as a proxy for human capital. As discussed in section III above, the presence of human capital

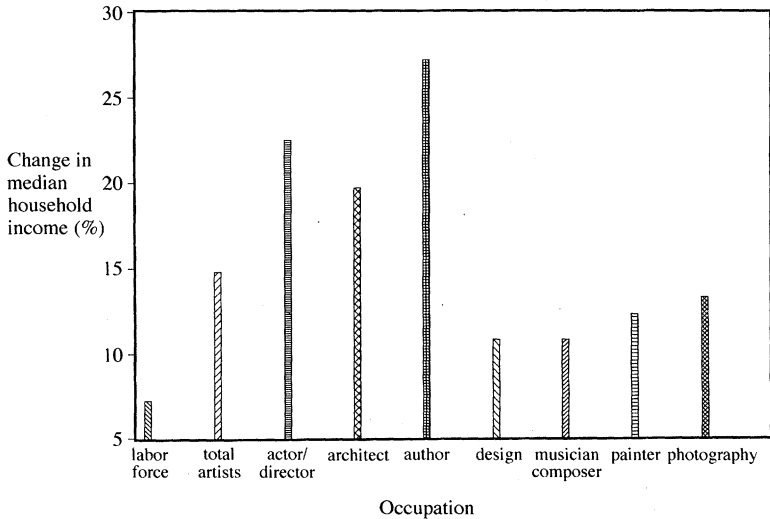


Figure 3. Percent change in median household income 1979–89, by occupation

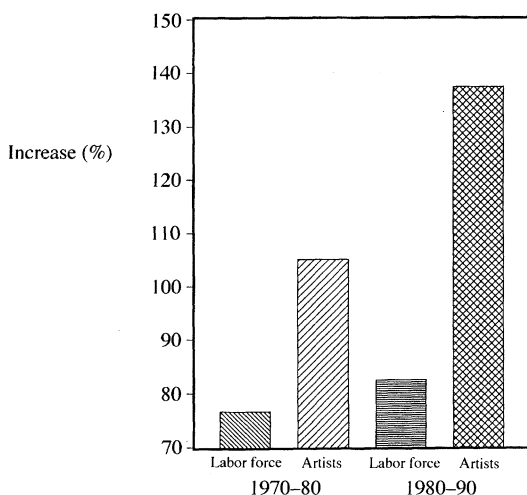


Figure 4. Percent increase of artists and labor force with college degree (1970-90)

may break the link between the arts and labor-intensity. Figure 4 shows that the percentage of artists with college degrees has increased far more rapidly in the last 20 years than the percentage of college graduates in the labor force. Between 1970 and 1990, the proportion of artists with college degrees rose by 386.4 percent, a percentage far greater than the increase in college graduates in the labor force, which was 222.6 percent. Figures 5 and 6 portray artistic occupations that are commonly assumed to be labor-intensive: dancers, painters, sculptors, actors and directors, and musicians and composers. The figures show that the education levels of the artists in these groups have increased rapidly in the last few decades. Each group shows a marked increase in the percentage having completed 16 years of school.

The restrictive nature of the data sample implies we can draw only limited conclusions from the above figures. Nonetheless we see no obvious evidence for the general applicability of the cost-disease; the limited evidence available shows quite the contrary. Artists, and the arts, have prospered as America has grown more wealthy.

A more general examination of casual evidence also militates against the applicability of the cost-disease argument. The wealthier countries—France, England, Germany and the United States—have the strongest reputations in music, the visual arts and letters over the last several centuries. The Renaissance was led by the Italian city-states, the

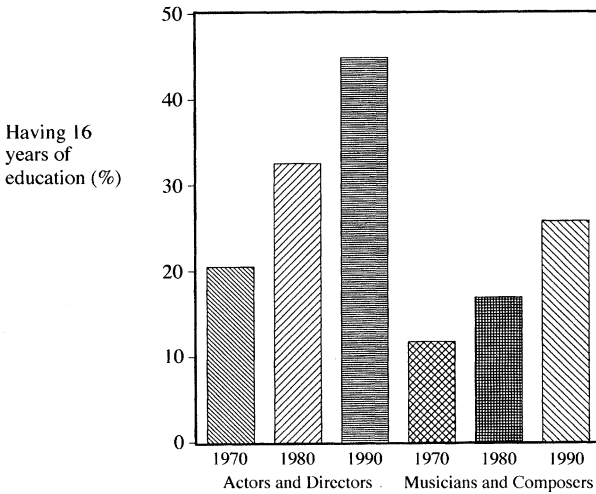


Figure 5. Percent of artists having completed 16 years of education, by occupation (1970-90)

richest part of the western world in their day. Periclean Athens was a relatively wealthy trading city. The great cultural eras of the eastern

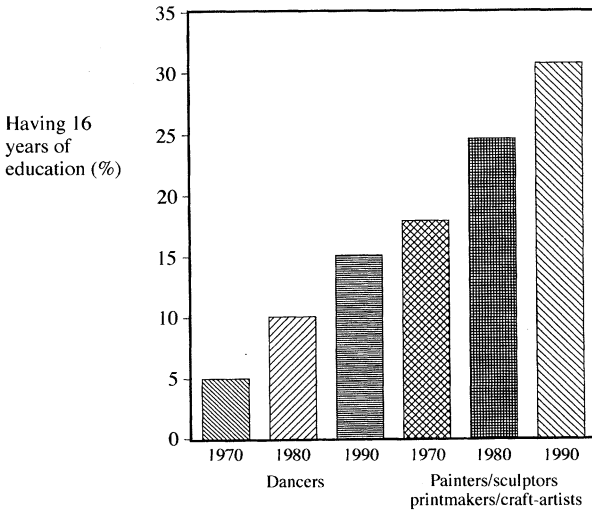


Figure 6. Percent of artists having completed 16 years of education, by occupation (1970-90)

powers, China and Japan, also correspond roughly to the relative economic supremacy of these territories. Conversely, low-wage countries usually do not become cultural leaders. Twentieth-century India and China, while accounting for almost half of the world's population, have not achieved a comparable position as cultural leaders.²⁰

VI. Concluding Remarks

We have explicitly examined the cost-disease argument from the point of view of the artist, and find that in a growing market economy the incentives to create art do not diminish and probably increase. Both casual empiricism and the more systematic statistical evidence support this conclusion.

Three differing kinds of theoretical arguments led us to the relatively optimistic conclusion we present. First, countervailing factors may check or limit the operation of the cost-disease; these arguments have received most of the attention in the critical literature to date. Second, the creativity of human labor implies that all productivity increases—whether in the arts or in industry—come from the pursuit of new ideas by human beings. The productivity problem does not fundamentally differ across sectors. Third, the cost-disease argument does not apply to the arts if the arts are not in fact labor-intensive.

Baumol and Bowen have produced a stimulating and provocative hypothesis, but we have no particular reason to fear for the future of the arts in a growing economy.

NOTES

The author wishes to thank Daniel Sutter, Alex Tabarrok, Katarina Zajc, the editor and three anonymous referees for useful comments.

1. For a survey of these views, see Cowen (1995).
2. Baumol and Bowen (1966) originated the cost-disease argument; Baumol, Blackman and Wolff (1985; 1989, Ch. 6) offer two later statements; see also Baumol and Baumol (1984a). Blaug (1976), Grampp (1989), Frey and Pommerehne (1989), and Towse and Khakee (1992) offer good introductions to the economics of the arts. For additional essays on aspects of the cost-disease argument, see Grant, Hendon and Owen (1987), Hendon, Shaw and Grant (1984), and Netzer (1978). Heilbrun and Gray (1993, Ch. 8) and Throsby (1994b) survey the cost-disease debate; see also the essays in Hendon, Shaw and Grant (1984). Many of the specific points made in these articles are presented in more detail later. For a related argument about the increased difficulty of enjoying leisure in a growing economy, see Staffan Linder (1970), and

the symposium in the *Quarterly Journal of Economics*; e.g. Baumol (1973) and Wolf (1973). These writings focus on whether consuming artistic products is labor-intensive from the demand side.

3. We discuss the benefits of recording and other capital-intensive innovations in more detail later. Cost-disease proponents do offer a counter to the claim that recording makes the quartet more productive.
4. Baumol and Bowen's neglect of income effects has been cited by Peacock (1976, 75), Heilbrun and Gray (1993, 133–4), Throsby and Withers (1979, 51–2, 170–1, 291), and Throsby (1994a, 1994b).
5. Throsby (1994a, 1994b) cites survey evidence that most artists have given up more lucrative opportunities to pursue their desired projects. We never hear of individuals who work at art to support a side interest in bookkeeping, but we often hear of the contrary.
6. Data from the 1990 census report suggest that only 55.7 percent of all American artists worked full time as such during the 1989 year; see *Trends in Artist Occupations: 1970–1990* (1994).
7. For documentation of the role of day jobs and family wealth in supporting famous artistic creators, see Cowen (1995, Ch. 1).
8. The importance of the wealth buffer decreases to the extent that consumers know exactly what kinds of art they wish to buy. The preferred art is immediately commercially viable and requires no financial cushion.
9. On the early application of the theory of division of labor to the arts, see Adam Ferguson (1980 [1767], 171–9), and Samuel Johnson, cited in Boswell (1935 [1786], 272; 1966, 514). For a more formal treatment of the incentives for artistic diversification, see Cowen and Tabarrok (1995).
10. On the brain-drain argument, see Bhagwati and Hamada (1982), and Baumol (1982). For a survey of empirical work on the benefits of international trade, see Gould, Ruffin and Woodbridge (1993).
11. This point is implicit in most contemporary models of endogenous growth; see, for instance, Romer (1986).
12. For data on the geographic agglomeration of artists, see Heilbrun and Gray (1993, 304–9).
13. Jean Renoir quoted his father Auguste as saying: 'Without paints in tubes, there would have been no Cézanne, no Monet, no Sisley or Pissarro, nothing of what the journalists were later to call Impressionism.' On the role of artistic materials in Impressionism, see Bomford et al. (1990, 21–6, 30, 34–7, 39–41, 51–2, 55–6). The Jean Renoir quotation is from p. 41.
14. The citation of recording and radio is one of the most common criticisms of the cost-disease argument. See, for instance, the survey piece on the arts by Throsby (1994b, 15). These writings, however, do not rebut Baumol's subsequent responses; see below.
15. Heilbrun and Gray (1993, 136) endorse this response as well. See also Baumol and Baumol (1984b).
16. Recording, of course, does change the nature of received musical services to some degree. A recording, for instance, may have greater accuracy but less spontaneity than a live performance. Many economists who write about the arts adopt a curiously sentimental attitude towards live performance, defined narrowly. Heilbrun and Gray (1993, 16), for instance, claim: 'No one who has developed a taste for live ballet is likely to find ballet on television an adequate substitute for the real thing.' Economists

- are unlikely to make comparable statements about a Mercedes-Benz and a Volkswagen. Furthermore, many consumers (and some performers, like Glenn Gould) prefer electronic reproduction to live concerts. A recording can be started, stopped and paused at will, and consumers can choose a superior recording easily by using guides and expert opinion.
17. For other studies, see Baumol and Baumol (1984a), Gapinski (1980, 1984) and Felton (1987). Peacock, Shoesmith and Millner (1982) is one study of this nature which does not support Baumol's prediction of stagnation.
 18. On the difficulties in measuring productivity in the arts, see Schwartz (1987).
 19. It is even subject to question whether the live performance of the classics has stagnated. From 1965 to 1990 America grew from having 58 symphony orchestras to having nearly 300, from 27 opera companies to more than 150, and from 22 non-profit regional theaters to 500. See Bolton (1992, 266). Admittedly, some of this expansion has been financed by government funds, but private giving far exceeds government grants.
 20. On the general link between prosperity and the arts, see Cowen (1995). Kavolis (1989) surveys numerous historical studies that have a strong link between economic prosperity and cultural achievements. See also Simonton (1984, 142).

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