



Valuing the Wales Millennium Centre

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Executive Summary

1. The Welsh Assembly Government, along with spending authorities around the world, has chosen to provide public financial support for the arts. The principal purpose of this report is to provide a rationale for the amount of support appropriate for the Wales Millennium Centre.
2. Despite clear guidance from HM Treasury as to the conditions under which public spending may be judged efficient, arts administrators in Britain persist in producing misleading 'economic impacts of the arts' studies to justify public subsidies. These studies fail to take into account displacement of other economic activity and do not consider alternative means of achieving economic development objectives, as they should if this were the true objective of arts subsidies. In fact it is apparent that the purpose of arts subsidies is to encourage the arts and their appreciation, rather than economic development.
3. There are a number of good reasons why art subsidies can be warranted. These include that appreciation of the arts is desirable in itself and generally encourages creativity and wellbeing, but requires experience. Many people are too impatient to invest in that experience and are worse off as a result. A subsidy to offset their inordinately high time preference and encourage cultivation of tastes for the arts can be justified.
4. The high proportion of fixed costs in total costs for many arts organisations, and for the Wales Millennium Centre (WMC) in particular, may be a second reason for arts subsidies. The lack of opportunities for pricing so as to capture the full audience benefit, as measured by willingness to pay, can mean that arts activities that are warranted on cost grounds, are nonetheless unable to generate sufficient revenue to cover their costs without a subsidy.
5. A third reason is that in countries conducting the experiment, the taxpaying electorate have shown themselves willing to subsidise arts facilities that individually they do not use. This is either so that they have the option of doing so or because they obtain some benefit from other people using the facilities. Assuming a common human nature, and in the absence of similar experiments in this country, it is reasonable to assume the principle applies here as well.
6. Few attempts have been made to assess the quantitative significance of these reasons. But decentralisation of arts funding administration and use of performance indicators measuring arts participation has

lead to a burgeoning of arts activity in recent years. This is consistent with the first rationale above for arts subsidies; public policy is concerned to widen arts appreciation. It follows that, in the absence of more appropriate measures, a useful index is the subsidy per arts participant. The more appreciators of the arts from a given subsidy, the more effective is the subsidy, other things being equal (admittedly a huge qualification). These figures are difficult to calculate because audience or participant numbers are not always available from funding bodies. But taking a figure from the Arts Council of Wales report for 2004/5 suggests an average subsidy of almost £8 a head in that year. Numbers from England in the late 1990s are considerably higher for music and opera. Applying the £8 per head subsidy rate to WMC implies a payment of around £4.7 million in 2004/5, very substantially more than received at present.

7. An illustrative application of travel distance as a means of assessing audience valuation of the WMC plausibly arrives at a larger maximum socially efficient subsidy, if necessary to cover fixed costs. Although the calculation is sensitive to participants' full travel costs, the estimate used seems close to a lower bound, so that the maximum justifiable WMC subsidy presented in Appendix A is approaching the lower limit as well.
8. Although the long run relationship between artistic activity and economic development is largely conjectural, there is some evidence that they are associated. Certainly the demand for the arts may be expected to rise with income. But at the city level perhaps too artistic activity attracts or retains types of people who are likely to create economic growth. Across a sample of British cities, there is a significant association between the density of theatres and affluence (Appendix B). Cardiff would not score well in this cultural comparison, were it not for the Wales Millennium Centre. As it is, there is no doubt that the Centre has become a symbol for what is innovative and attractive about Wales, so the current funding shortfall is extremely ironic.

Valuing the Wales Millennium Centre

'A country like Britain today survives and prospers by the talent and ability of its people. [Their] breadth of mind is enormously enhanced by interaction with art and culture.'
Tony Blair, *Tate Modern speech* 6 March 2007

'Praise the Lord! We are a musical nation' Rev Eli Jenkins, *Under Milk Wood* Dylan Thomas

What is the WMC worth to Wales – and the wider world? Policy makers need to know so as to establish what taxpayers and users should be willing to pay for it. The question cannot simply be answered by revenue generated, or revenue that could be earned, at the point of service. For WMC services are often not charged for – with good reason, as will be shown below. Yet viability of the Centre requires covering costs. This means that un-priced services must either be cross-subsidised by other, priced, services, or directly subsidised, if they are to continue.

Allocation of state arts subsidies in the UK has been notorious until recently. The greater part was directed to London and they principally benefited affluent social groups, who were more likely to be art appreciators (Peacock 2000). Two recent developments have transformed this pattern. One is the decentralisation of fund distribution with devolution, instanced by the creation of the Arts Council for Wales. The other is a shift towards widening arts participation as a condition for payment of subsidies. The logic of this policy shift is broadly stated in the Prime Minister's speech quoted above.

To justify arts subsidies, a popular method of appraisal focuses on 'jobs generated'. This report will show the approach is largely misconceived and in practice contrary to Treasury guidelines for public spending. Instead it is appropriate to consider policy makers' objectives and the most efficient ways of attaining them. Arts subsidies are not intended to generate jobs or regenerate inner cities, nor is it likely that they are the most effective ways of achieving these two outcomes. A proper understanding of the aims of Arts policy helps an appreciation of both why a larger subsidy for the WMC policy

is warranted, in particular, and what constitutes an appropriate distribution of arts subsidies in general.

1. Policy Objectives and Treasury Guidance

H M Treasury provides guidance on 'policy and programme development' in 'the Green Book'. This document was prepared and revised in consultation with other government departments and with the devolved administrations. The guidance has also been adopted by the Welsh Assembly Government. The purpose of the Green Book is to ensure that no policy, programme or project is adopted without first having established whether there are better ways to achieve the policy objective/s and whether the resources required could be employed more efficiently elsewhere (H M Treasury 2003 Para 1.1). Elected policy makers establish policy objectives, but the means of achieving those objectives should be efficient so as to minimise the burden on the taxpayer.

Policy makers subsidise the Arts primarily for educational reasons, in a very broad sense. There is some evidence of health and learning benefits from certain types of music, and art therapy has a long history (Rauscher et al 1993; Hughes et al 1998). But governments finance education primarily because until a person has received education they are unlikely to know its true value, which is high. The same applies to (some) arts. This is why the Assembly's policy statement, *Creative Future: Cymru Greadigol* (2002) espoused free entry to national museums and galleries, as well as improving access to cultural facilities and activities for audiences and participants. Moreover the memorandum of agreement between the Assembly and the WMC recognized both the WMC's role in improving access and the willingness of the Assembly to subsidise the process.

The arts may serve a number of purposes, including achieving another Assembly objective in the *Creative Future* document;

'using Wales' distinct culture and its achievements to raise its international profile'.

As the home of the (touring) Welsh National Opera, the WMC contributes to this goal. In addition, by putting on self-financing performances that attract visitors from outside Wales as well as favourable international media coverage, WMC enhances Wales' image in the wider world (for 'we are a musical nation').

2. The Current Practice of Economic Impact Appraisal of the Arts

Despite these objectives, it is common for lobbyists for arts subsidies to focus on the 'economic impacts' of the arts (Myerscough 1988; Bryan et al 2000¹; Reeves 2002; Shellard 2004²). These impacts are typically boosted principally by multiplier analysis³. Indeed the process has become so routine in the United States that it is possible to visit the 'Americans for the Arts' website, and type into an 'Arts and Economic Prosperity Calculator' the population of a community, the arts spend and the numbers of the audiences. The calculator will then create figures for FTE jobs generated, as well as the boost to household income and state and local tax revenues. These will allow the visitor to 'make the case for arts support in your community'. Alternatively for the same purpose, the lobbyist may cull extracts from the 170 page document on the same site extolling the GDP-enhancing impact of the arts (Americans for the Arts 2003).

Turning to one of the most recent British exercises, Shellard's (2004) theatre study defines economic impact as

'the total economic activity generated by a theatre (in other words, what economic activity an area would lose in total if the theatre was not there)'.¹

Rather extraordinarily, the preferred formula for estimating this impact engages in double counting. Not only is theatre expenditure on wages and

¹ Note that Bryan et al (2000) discreetly comment that their analysis does not take into account (the critical) supply side effects.

² '...the arts sector has recognised the value of being able to quantify its economic impact for, among other things, the justification for continued public funding.' (Shellard 2004).

³ 'Multipliers are used in impact studies to take into account the knock-on effect of spending by the theatre throughout the local economy. To ensure that this study produces a viable but cautious result, a multiplier of 1.5 has been used..' (Shellard 2004). Analysis of the economic impact of the Brecon Jazz Festival in 2000 yielded a similar multiplier value for output but from an input-output model. An important caveat, considering that the Festival is run by volunteers, as the authors observed, is that their estimates are gross of displacement effects-see below (Jones and Munday 2004).

salaries and goods and services included as well as additional visitor spending in the locality, but also, ideally the reader is told, theatre turnover (formula 2). Yet, as terms are conventionally defined, the turnover of a business consists of receipts which are then spent on the items listed above. Fortunately the less preferred formula 1, used in practice, does not double count in this manner. But nor does it take into account critical elements of appraisal, prescribed in the Treasury manual, which would vitally affect the overall assessment.

When correctly undertaken, a full impact analysis must address non-additionality and displacement (which reduce impact) as well as linkage and multiplier effects (which may increase impact).

An outcome is non-additional when targeted behaviour is unchanged by the policy. An instance would be when an arts subsidy assists an organisation to do something which they would have done anyway. Displacement arises when support for an arts supplier boosts its activity, but at the cost of reduced activity elsewhere. Displacement cannot be assessed by asking subsidy beneficiaries themselves.

There is a linkage effect when arts organisations increase their activity, and consequently their purchases, some of which may be supplied by local firms (Such a consequence is sometimes called an input–output multiplier or inter-industry multiplier effect). Using local or regional input-output tables, the value of supplies which correspond to £1 extra of added value can be estimated. The strength of the linkage effect depends on purchases per pound of added value, and on the proportion of local sourcing. Hence, an arts organisation which buys a great deal per pound of added value, much of which can be sourced locally, will have a strong linkage effect. But when local businesses are already operating close to full capacity the extra demand will simply displace other customers. For instance additional visitor spending is the second largest component of expenditure in Shellard's table 1. It consists of expenditure on transport, food and drink, and childcare, incurred by audience members as a result of a visit to the theatre. In London it is

reasonably clear that such extra spending is more likely to drive up prices, to ration out the scarce restaurant, transport and child care resources, than to increase their supply. Elsewhere it is probable that, without a theatre, restaurant spending for example, would take place in another location, but would not necessarily diminish in total.

The multiplier effect arises when unemployed people find work and so acquire higher disposable incomes. The rise in spending then supports extra economic activity, part of which will be in the local economy, mainly in the service sector. The extent of the expenditure increase will depend on conditions prior to gaining a job and on earnings afterwards. To estimate the proportion of this increase that will be spent locally, allowance must be made for imports to the area, for taxes and for savings. With appropriate corrections for these deductions, local impacts are likely to be small, as well as smaller the more circumscribed the area.

A theatre subsidy may create a demand for more cleaning and maintenance that 'creates jobs' in one sense. If these jobs were genuinely 'additional' there would be other multiplier 'rounds', as new employment created further demand for labour, such as in retailing to serve the greater demand of the newly employed. But in practice the total number of jobs may not be increased, instead employment may merely be diverted, with miniscule upward pressure on wages. In this case there are no employment multiplier effects. Another possibility is that the jobs are filled by commuters or by migrants to the region – as for example the inflow of EU accession state workers to Wales. Then if the spending that brought them in was additional, the region would be economically bigger. But if the spending was not, the regional economy is only larger when the outlays support more employment in its new use. Traditionally actors have been subject to higher unemployment rates of any group, and wages of arts workers have been low (as Reeves 2002 acknowledges). These are not the properties of employment that appeal to advocates of local economic development. And then there is a policy question about the desired trade-off between more, and higher paid, jobs.

Local or regional supply might expand as demand increases when there are large numbers of people available to work but unable to find jobs. However registered unemployment in Wales is now low (equal to, or lower than, the UK average) - and employment has been increasing. Also low by comparison with the UK average is labour force participation, partly because of high numbers of invalidity benefit claimants. Increased demand for labour- from subsidised arts or other organisations - are unlikely to affect these totals. There will be no multiplier effect because of displacement. Indeed an eminent economist of the arts has expressed his concern that the current practice of economic impact studies was capable of demonstrating the economic development advantages of an earthquake (Blaug 2001). By completely neglecting the supply side of the economy (such as the destruction caused by an earthquake) and measuring only spending, (in the earthquake case on reconstruction) the economic impact of an earthquake that induced the expenditure would look most beneficial.

This is not to deny that cultural activities have an impact on the economy (for a survey see OECD 2005 and a critical summary Seaman 2003). It is simply that the principle effect in the short run of larger cultural industries is likely to be a change in the composition, rather than in the level, of economic activity. A qualification to this conclusion would be if the cultural activity were timed to improve capacity utilization - for example by increasing the demand for off-season hotel accommodation. It also true that 'cultural tourism' (along with ordinary tourism) constitutes an export for a locality that in principle supports more non-tradeable service industry such as retailing. This is the supply side analogy to the demand multiplier, and also requires resources if there is to be an effect net of displacement. When existing export industries are declining, such tourism might fill the gap. Or increased labour force participation could allow a growing export industry and therefore higher incomes. But in practice these qualifications are unlikely to affect the conclusion that more artistic activity may affect the quality of life but in the short run the net economic impact on the level of incomes and employment activity will be minimal.

In *Wales a Vibrant Economy*, the Assembly government set out objectives, to increase employment still further, and to raise the quality of jobs. But it did not propose to achieve these objectives with arts subsidies. This is entirely appropriate because there is no reason to expect that arts subsidies are the best way directly to attain these goals. 'Economic impact of the arts' studies never compare the costs of alternative ways of achieving supposed employment and income effects, for obvious reasons. Yet this justification for arts subsidies requires such a comparison, according to Treasury guidance.

More sensibly, when government wants to subsidise arts, they do so for reasons other than stimulating the local economy. So the focus should be on the cogent and relevant reasons that warrant arts subsidies in general and subsidies to WMC in particular.

3. Market Failure

A core concept in the Treasury manual, that may provide a justification for government intervention such as an arts subsidy, is 'market failure'. This occurs when the market under- or over- supplies a service or good (such as performing arts). The optimum is defined in terms of what individuals and families would choose, given their incomes, and the costs of production, if 'imperfections' were not present. The underlying principle is that a person's choices in markets reflect what they value.

How much they can afford to pay depends upon their income and circumstances but progressive taxes and a redistributive welfare system are for appraisal purposes generally assumed to address adequately the pre-tax and benefit income distribution. When public sector projects pursue equity objectives, the measures of wellbeing should be adjusted with weights that increase the lower is personal or family income. In practice, for arts subsidies, this may mean a simpler but often less accurate solution of especially targeting low income groups.

What people might pay for a service is critically important in this scheme, and this is not identical with prices or total spending. The missing component is

that a person who buys a ticket for a concert may have been willing if necessary to pay more than actually charged. The difference between the maximum they would have been willing to pay, reflecting their valuation of the concert, and what they actually pay, is this person's consumer surplus. Or put another way, willingness to pay equals actual payment plus consumer's surplus. These ideas can be central to an intellectually sound basis for arts subsidies in particular cases.

Willingness to pay is a measure of social value, when public resources are to be committed. It can be estimated either from behaviour ('revealed preference'), or from what is said ('stated preference').

4. Learning and the formation of tastes

Economics and Treasury appraisal has difficulty with arts policy because of their (above) normative assumption of consumer sovereignty. If most people do not value the arts sufficiently to pay their costs why should democratic government impose taxes to subsidise minority tastes? As already indicated, the source of market failure that justifies a subsidy is related to education and learning. The arts are not unique in being a cultivated taste; babies are not born with a taste for tea, it is acquired by familiarity. Childhood experience of the arts increases adult demand (McCain 2003). The cultivation of tastes implies that preferences are transformed by the experience. But then why do adults not choose to cultivate a sufficient taste for the arts, if they can manage to do so for, say, spectator sport?

One answer is that the majority of the population is not exposed to the experience of arts, as against the experience of spectator sport (simply as measured by media time and space for instance). When people do have certain 'cultural experiences' their valuations of it are subsequently higher. Getzner and Oberlercher (2003) used a visitors' survey to value the museum experience measured by visitors' willingness to pay an admission fee (in Austria). While visitors actually paid 1.1 euros on average for the admission fee, after having seen the exhibition, they would have been willing to pay up to 7.8 euros. Econometric estimation shows that willingness to pay (WTP) is

strongly correlated with the respondent's income, the perception of the quality of the museum and the admission fee already paid. This implies that there would be more visitors, if experience was wider.

Another response is that a longer investment in taste cultivation for the arts is necessary than to appreciate, say, a cup of tea. Then impatience, coupled with a considered public opinion that impatience is undesirable, is a form of failure that might warrant state intervention. The rate at which present benefits are preferred to future benefits is a quantitative measure of impatience. If this rate is high then individuals may choose not to invest now in experiences (especially performing arts) that will make them better off in the future. Instead they will prefer instant gratification, such as may be had out of a bottle, perhaps helped by advertising.

What evidence is there for impatience? First of all some discounting of the future might be thought entirely reasonable; we may not be here tomorrow, technology may solve this generation's problems in the next generation and anyway investment opportunities mean money this year can be converted into more next year⁴. But questionnaire evidence suggests personal time discount rates of young people are much higher than these considerations warrant. A sample of Cardiff young people (mean age 22.6 years SD 5.37) showed on average a time preference of more than 15 percent a month⁵. This makes credit card rates appear good value by comparison, and explains why young people are liable to accumulate large credit card debts. Public policy to offset this high time preference could be warranted for some experience goods, (such as some performing arts).

Another condition for intervention is that there must be a judgment that the arts are a taste worth acquiring. The Assembly has made such a judgment, in common with spending authorities throughout the world.

⁴ The public sector discount rate of the Treasury Green Book is 3.5 percent per annum.

⁵ 68 respondents were asked 'what would you sell £120 in 30 days for now' and 'what would you pay for £120 in 30 days'. The mean responses were respectively £102.9 (sd 28.9) and £76.7 (sd 34.9).

5. Pricing and Cost Recovery

The high proportion of fixed to variable costs for the performing arts in general, and for the WMC in particular (7:3), can mean that socially valuable activities (as measured by the excess of individuals' willingness to pay over costs) might nonetheless not be viable in the market (discussed further in Appendix A). A pricing policy that captures sufficient revenue could be impossible to achieve - even though a theoretically perfect pricing scheme would provide enough to recover costs. There could be a market failure. Suppliers of electricity and gas, who also have high fixed relative to variable costs, address the problem with a rental charge (to cover the fixed costs) and a separate per unit price (to cover the variable costs), often graduated according to volume consumed. In the performing arts, the nearest approximation to this approach is with season tickets or special arrangements for paying 'Friends' of the organization. But the heterogeneity of the arts and preferences for them renders this a far less complete solution.

This is especially so for the WMC casual visitors and the foyer performances, a critical element of WMC strategy to widen the experience of the arts. These visits can only take place if the fixed costs of WMC are covered. One theoretical pricing solution is to recover fixed costs by marking up prices on marginal costs, and according to the price-responsiveness of demands for particular services - so for highly responsive demands the markup would be low⁶. The casual visitor programme is deliberately not priced to avoid deterring visitors, who anyway incur travel costs, (high price responsiveness). Moreover the short-run marginal cost of a casual visitor is close to zero. A proportionate markup on zero yields a zero price. So the only way the casual visitor programme could be financed, without a subsidy, would be by somehow loading all the fixed costs on to the ticketed performances. That is, one group of arts audience would be paying to subsidise another group's participation. This would be inconsistent with Assembly policy to widen participation in the Arts, for some ticket buyers would be deterred by the higher prices.

⁶ This is the principle of Ramsey pricing, which maximises well-being subject to a minimum profit constraint (and in the case considered above, where the demands are independent).

The problem of covering fixed costs is exacerbated for the WMC by the position of the resident companies and the WNO. These impose fixed costs but the revenue contributions are less than proportionate to the space they utilise.

The fixed cost recovery problem above applies to rugby matches and sports stadia as much as to arts performances and the WMC. The difference is that the greater interest in spectator sport – coupled with sale of television rights - means much higher chances of covering fixed costs by feasible market pricing. Logically the question of whether there is a market or other failure that warrants a subsidy devolves to whether the relatively low willingness to pay for art compared with, for example, spectator sport, reflects a failure. The suggestion of the previous section was that the sources of failure are not in the market but in experience and individuals' time preference rates.

There is nonetheless a strong demand for the WMC that does not translate into WMC revenue, as signalled by the distance travelled to visit. Those who travel a longer distance generally incur higher costs to attend a performance. These time and money costs can substantially exceed the price of a ticket. The demand for the performance or facility can be calculated as a visitor rate from a given location, which depends upon the distance of that location and individual characteristics, in particular income, education and age. In Appendix A an estimate is presented of the value of the WMC implied by some of the audience travel evidence of Table 1. The Appendix shows that, at a conservative reckoning, this demand data indicates a subsidy of up to £6.75 million could be justified to help WMC cover its fixed costs.

Without utilising the individual level data necessary to estimate a travel cost demand function, it can be demonstrated that the demand for WMC's performance of the Ring Cycle was strong (ticket prices would show the same). For the largest single group came from Greater London rather than Cardiff, say 150 miles or 240 kilometres.

For total WMC visitors in 2006 their proportion of the regional population is given in table 1 below, (assuming each only visited once and that the rest of the world was just the UK). Considering almost half the population of Wales lives in the South East it is notable that (on the above assumption) the proportion visiting WMC is so high. From table 1 it is obvious that the chances of visiting decline with distance. But the fact that from the South West there is a ten percent probability of a visit is striking, considering Swansea is 40 miles from Cardiff and Pembroke 100 miles⁷.

Socio-economic characteristics of the audience shows the extent to which WMC serves an audience of 'moderate means' and 'hard pressed' – 22 percent of the total. This falls to 13 percent for WNO audiences. As expected in view of travel costs, these groups are more likely to come from SE Wales than the more affluent categories.

The explanation for the widespread and unusual socioeconomic mix of visitors is partly the pull of the casual visitor programme. Half were going to visit, or had visited, somewhere else in the Bay area. 28 percent of visitors were unaware of the Donald Gordon Theatre, the core of the WMC. This reflects both the number of visitors with minimal understanding of WMC and what it did, and those who saw the Centre as a visitor attraction, rather than as an arts centre.

Table 1 Proportion of Regional Population Visiting the Wales Millenium Centre in 2006

SE Wales	0.339
SW Wales	0.101
Mid-Wales	0.058
North	
Wales	0.009
Outside	0.001

⁷ 79 percent of casual visitors to WMC were from Wales, with 19 percent travelling from other parts of the UK. 1.5 percent of respondents were international visitors. Of those Welsh visitors, the vast majority lived reasonably locally, with just 4 percent coming from Mid or North Wales. This is reinforced by the travel times cited by respondents. 82 percent of visitors travelled for an hour or less.

Casual visitors are not looking for the same exposure as say a ticket buyer, yet the foyer performances, averaging two a day, mean that there is a high chance that they will experience a concert or other performance in the course of their visit. The logic of arts policy is that non-participants should be encouraged to learn the value of arts. Then non-ticket buyers are precisely the type which needs to be enticed in to the arts, and therefore warrant subsidy. Ticket buyers are more probably already committed. The initial (travel cost) valuations of casual visitors are likely to be lower than those of ticket buyers but their experience at the WMC is likely to raise their valuation in retrospect, as survey evidence suggests. 99 percent of respondents said that they would return to WMC. 36 percent of those who visited WMC between April 2005 and April 2006 were doing so for the first time. 12 percent had been over ten times. WMC attracted consistently high levels of first time visitors and did not rely on repeat visits. On the whole, casual visitors to WMC were already arts attenders. 90 percent had experienced a theatre event in their lifetime and 83 percent had attended a music event. However, two percent had never been to arts event or museum before in their lifetime.

6. Option Demands

A third market failure idea that underwrites the justification for arts subsidies, and that can be quantified is that people want some art facilities to be available even if they themselves do not intend to use them at present- they have an 'option demand'. Perhaps also there is a belief in an 'external benefit'; that those utilising the arts facilities confers a benefit upon others, worth paying for. In both cases it not usually possible to price the service in the market by conventional means, so that the pay-off is reflected in the revenue.

There are a number of ways to elicit how much these pay-offs are worth⁸. With the appropriate constitutional arrangements, plausible valuations over and above market prices can be established. Switzerland's use of referenda

⁸ The OECD (2005 pp52-56) discusses some of the challenges of estimating them accurately.

provides a convincing example that people are prepared to vote for specific art subsidies of a particular size, knowing that it has tax or other spending implications for themselves. A well-documented instance is the 1973 and 1974 proposals to increase the public subsidy to the municipal theatre in Basle. Econometric analysis showed that the lower the expected increase in the tax burden (and therefore increase in the subsidy) the higher the proportion that would vote 'yes'. The model very accurately predicted the proportion voting 'yes' in the second referendum that was actually passed – with a reduced subsidy compared with that proposed in 1973 (Frey and Pommerehne 1989).

It is unnecessary to embrace Swiss constitutional procedures to acknowledge a potential public willingness to pay other than at the point of service. But an accurate assessment of the size of the option demand-warranted subsidy in Wales would require some investment in procedures for eliciting the information.

7. The Political Economy of Subsidies

The discussion so far has been about why arts subsidies might be justified in the context of Treasury guidelines. Various forms of market and other failures have been considered. The fact that the arts require experience of them for their appreciation renders them similar to education. So similar considerations warrant state subsidies for arts as for education. The observation that many people are extremely impatient and therefore will not invest in worthwhile experiences provides another reason to subsidise arts, as an offset; this is the justification for free admission to museums and galleries and for the foyer programme of the WMC.

Whether or not the recovery of fixed costs when these constitute a high proportion of the total constitutes a market failure, it is a major problem for an industry that has little scope for multipart pricing. The root of the difficulties is still the weakness of demand stemming from the learning necessary to enjoy the arts, but the fixed costs exacerbate the management challenges.

Evidence that individuals are willing to pay either or both for the option and for others to enjoy the arts, creates another possibility of market failure; that is, for revenues that can be earned at the point of sale to be less than would be earned with an ideal charging system. Hence option demand and external benefit offer another possible reason for subsidies. If these principles were accepted, the size and distribution of subsidies between suppliers to achieve Assembly objectives should reflect extent of market failure, including the level of the activity. One possible approach is to assume this is so and infer the extent of market failures from the distribution of subsidies. This has the merit of avoiding the extreme difficulty of measuring the market failures, which has not yet been undertaken. On the other hand it does not permit an evaluation of current practice. Such an evaluation is desirable because the same principles that underpin Treasury guidance predict that in practice subsidies may be determined and distributed in an altogether different fashion.

Politicians and administrators who make decisions about the size and distribution of subsidies are lobbied by pressure groups, with specialized information. Consequently they may be inclined to favour those who are better organized for this purpose, concentrating funds on a few, large, well-established suppliers (Frey 2003). The more money at stake, the more it is worth investing in lobbying. On the other hand concessions for the large components of expenditure are more expensive than for the small.

The arts are small beer in the total of government spending on education, health and even economic development. For the Welsh Assembly Government, culture, Welsh language and sport accounted for about one percent of expenditure. The size and distribution of subsidies between suppliers to achieve Assembly objectives must be influenced by the costs of arts organisations. These costs may not be independent of the funding; their general performance could be influenced by the financial arrangements. Free access to museums and galleries may have the drawback of relieving pressure on these organisations to satisfy the general public by competing for their custom, unless visitor numbers becomes a performance indicator which carries revenue consequences. But if there is no possibility of the facility

closing, then management must be accountable for performance and measures of performance must be agreed- as for UK government departments in their public service agreements. This incentive is desirable for the supplier because the funder 'principal' is likely to know less than the arts supplier 'agent' about the costs and possibilities available. It does provide a reason for the art supplier agent to find about the options and their costs, which an unconditional cheque does not.

There is no guarantee that an increase in subsidy will elicit a minimum cost increase in services. Of course, any such suggestion of anything else would always be strongly denied by the subsidised organisation. The converse proposals to limit costs will normally be met by claims that any reduction in subsidy will lower the quality of output.

The funder then faces a dilemma. Should they reward success, increase the subsidy of organisations successful at generating revenue, or penalize it? Should they instead reward (and thereby encourage) failure to generate revenue, on the grounds that the public needs the service? There is evidence from a panel of UK museums funded by central government, that increases in non-grant income reduce future government subsidies (Maddison 2004). Whether these reductions are sufficient to offset entirely the financial benefits from charging or the pursuit of private benefactors, is unfortunately unclear. Changes in visitor numbers do not appear to cause changes in government grants, despite the policy objective of widening access to museums. The management incentive is clear on widening access; do not be concerned with visitors. Where revenue is concerned, in this instance the jury is still out on the incentive from the implicit tax rate stemming from subsidy withdrawal.

The WMC has been extremely successful in obtaining funding from ticket sales and for fixed costs from a wide variety of other sources, including sponsorship, to finance a very wide programme of activities that has achieved international acclaim. Comparison with other organisations indicates low costs of delivery. Yet as a result of an imprecise and inadequate initial financial

agreement with the Welsh Assembly, there is now no chance of the budget being balanced.

Given the objective of widening access to the arts, one measure of the effectiveness of subsidies is the subsidy cost per visitor or participant. Estimated grant per visitor shows British Library a very expensive outlier in 2001-2 (£159.6) compared with national museums, the National Gallery and English Heritage- but then the nature of the activities are different (books and documents consulted) (Peacock 2000). Subsidies to music per client (£19.1) in 1997/8 were higher than to drama (£7.5). Probably greater support was provided for national companies than local, as is apparent for WNO relative to other Welsh companies.

In 2004/5 the Arts Council Wales (ACW) received about £23.8 million in grant from the Welsh Assembly and spent about £4.4 million on administering its awards (from the Lottery as well) (Arts Council of Wales 2005). The Council states that through subsidized organizations this subsidy has allowed access to the arts for (more than) 3.5 million people. On top of the WAG income in 2004/5 ACW spent £13.5 million from Lottery money, with a total expenditure net of operating costs of £36.7 million. Capital expenditure offers amounted to £8.9m. So revenue programme expenditure was £27.8 million. Divided by 3.5 million arts attendees, this averages almost £8 per head⁹.

At this rate WMC's 255,000 uncharged visitors would warrant a £2 million subsidy. But many of the ticketed performances could not be expected to cover their costs by charging, if the wider access agenda is to be pursued. If these performances were subsidized at the same rate, their subsidy would be

⁹ Compare with this the Arts Council for England music subsidy per capita 1997-8 of £19.1, for dance, £25.9 and for drama, £7.5. The British Museum subsidy was forecasted at £6.5 per visitor 2001/2 (Peacock 2000). The value of money has of course declined in the ensuing years, so that after 9 years, with 2.5 percent inflation a year, an extra 25 percent subsidy would be needed to buy in 2007 what could have been bought in 1998. In this context, a subsidy of £8 per participant by 2007 looks good value.

another £2.7 million, a total of £4.7 million, for 2004/5, considerably less than the WMC actually received¹⁰.

8. Economic Development and the Arts in the Long Term

Section 2 demonstrated the conditions that must be satisfied for most economic impacts of the arts studies to show the true economic effects are unlikely to be fulfilled. The mere fact that the arts employ people, and thereby constitute an industry, does not in itself boost economic development or warrant a subsidy.

In the long term prosperity has traditionally brought an increasing demand for the performing arts and other cultural pursuits. Cities, such as Cardiff, based on newer economies in the march of British history, may be less well endowed with cultural facilities, because eighteenth and nineteenth century wealthy private benefactors were far less abundant. Unless their local economies have proved buoyant throughout the twentieth century, this can then create a gap in the twenty first century between older and newer cities, to the detriment of artistic and cultural life in the newer.

Such a gap matters in its own right, but does it influence subsequent economic development? Do regions or cities with a richer range of cultural facilities grow faster, attract more people both possessing highly marketable skills and being more entrepreneurial? Quantitative research along these lines, largely stimulated by Richard Florida's *Rise of the Creative Class*, is still in its infancy. An entire number of *Local Economy* (2004, 4) was devoted to cultural policy and urban regeneration. Some research has shown that diversity in US cities appears to boost productivity of US Citizens (Ottaviano and Peri 2006). But that is some way from the 'artistic spinoffs' element of the Florida thesis. This facet has been vigorously contested on the reasonable grounds that artists are different sorts of people from say computer

¹⁰ Arts subsidies nominally earmarked 'Wales Millennium Centre' are not paid to the WMC management in entirety as a revenue subsidy. The Assembly £2 million with this heading is distributed £0.75 million as revenue to the Centre as such, £0.45 million as a sinking fund for the capital costs of the building and the remainder as revenue subsidies for six of the seven (independent) resident organizations, including the Welsh National Opera. Urdd Gobaith Cymru, as the seventh resident, receives no revenue subsidy from this earmarked £2 million.

programmers, with different incomes (Markusen 2006). Yet the idea that footloose entrepreneurs and firms will locate where the facilities provide the life style that decision makers and highly skilled workers enjoy, is entirely plausible.

Unfortunately the data to test and quantify such an effect is not readily available. The cross-European Urban Audit project (<http://www.urbandaudit.org/>) yields some data but not yet on a consistent basis across Europe, and with massive gaps simply as far as the British sample (that includes Cardiff) is concerned (see Appendix B for tables and analysis).

The few cultural facts available, such as theatres, libraries, museums (left blank for Cardiff) are suggestive that older cities are better endowed with this type of cultural capital, so that they are now often associated with declining populations. But even declining populations can be an artefact of city boundaries, and shifts towards lower density living. Bristol is recorded as having experienced a falling population, to a level of 380.6 thousand, compared with Cardiff's 305.3 thousand and increasing population. As expected Bristol rents exceed those of Cardiff.

On theatres and museums Cardiff compares very unfavourably with Bristol, possibly partly because of different geographies of conurbations. But Cardiff also looks culturally poor in comparison with the much smaller Cambridge and with Scotland's capital. In fact Cardiff is close to the sample average in population size- perhaps reflecting inappropriate urban boundaries- slightly above in rents, library borrowing per head and percentage of finance and business service employment, and substantially below in numbers of theatres, libraries and (assuming Cardiff has three) museums (see Appendix B table).

Cities with higher rents are presumably more prosperous because higher earners (or inheritors) bid up the price of housing. British cities in the sample with more theatres per head of population are more likely to have higher rents, consistent with 'culture' creating prosperity. But no less plausible is the

reverse explanation; that better off cities will demand more theatre performances.. When the proportion of the workforce in finance and business services is included in the regression model (Appendix B), the theatres variable is still statistically significantly different from zero. The coefficient implies that one more theatre per 100,000 of population is associated with rents that are 10 percent higher than the sample average. So these results are consistent with more performing arts, either or both of, causing or being an effect of greater prosperity at the city level in Britain, as the Florida thesis maintains. On the other hand it is possible that changing the city sample and definition will change the results.

A rich artistic city life may, in commercial parlance promote a city's 'brand image'. WMC's striking architecture has already proved its worth in a variety of advertising media, from tourism through to politics. But what is general 'image' worth? It is pertinent that UKTI, Britain's official organisation for promoting trade and investment, has been collecting material on what aspects of their promotional activity are effective. Case study evidence indicates that UK image ('Cool Britannia') is not generally helpful - and sometimes counterproductive - for winning contracts for individual businesses. Less general and abstract notions typically sway business decisions.

WMC is fine for promoting cultural tourism, but probably not more generally. Yet, as already discussed, an export justification for an arts subsidy is highly questionable. If the policy objective is to promote exports earnings, the arts have not been demonstrated the most effective way of doing it. The point of the arts is not economic, a means to an end; they are an end in themselves. Arts policy is primarily concerned to ensure the end is more widely shared, not to encourage economic development, even though this may be a spin-off.

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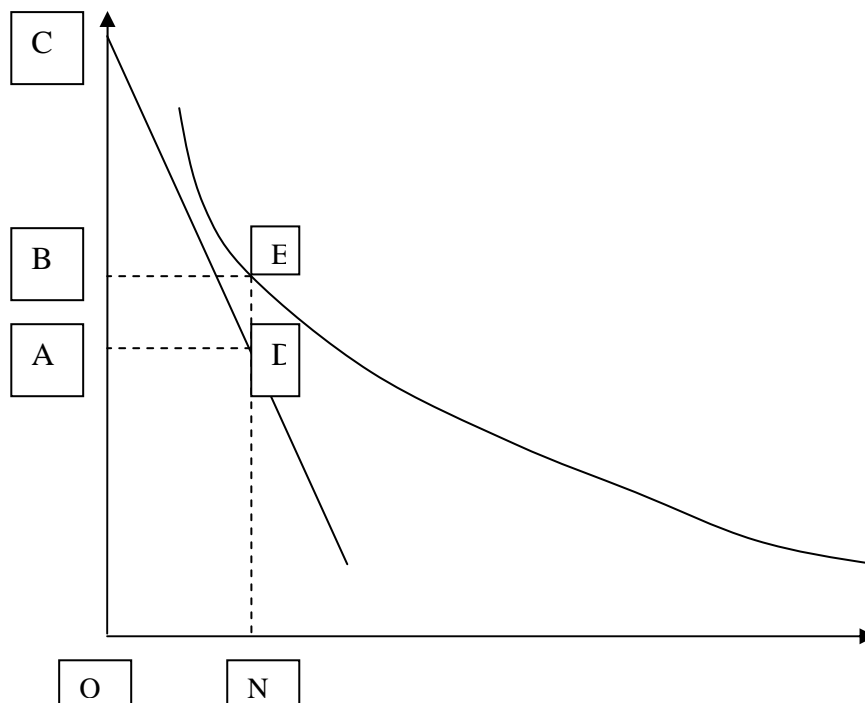
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Appendix A. Willingness to Pay, Consumers' Surplus and Subsidies for the Performing Arts

In section 5 the possibility is discussed that high fixed costs could render a performing arts enterprise unviable even when it was socially desirable; that is, when the willingness to pay for performances exceeds the costs. Figure 1 demonstrates this possibility. The horizontal axis measures number of performances and the vertical axis, money values. The downward sloping line nearest the vertical axis is the demand curve, the price all are prepared to pay for a given number of performances. The other curve is the average cost of a performance which falls as more are undertaken, because of the fixed costs. The average cost of a performance when the number of performances is N , is B . The maximum single price the audience is willing to pay for each of N performances is A . But the consumers' surplus is the triangle ADC which is greater than the subsidy necessary to finance N performances, the rectangle $AB \times N$. That is, if the enterprise could charge for each performance the maximum willingness to pay, the revenue would substantially exceed the costs. The demand curve is below the average cost curve for all levels of concert, opera or theatre performance. (willingness to pay for an extra performance is less than the average cost of that extra performance). But the total satisfaction that audiences obtain includes the maximum each would be willing to pay for each performance, the area $OCDN$, And this exceeds costs $OBEN$.

Figure A1

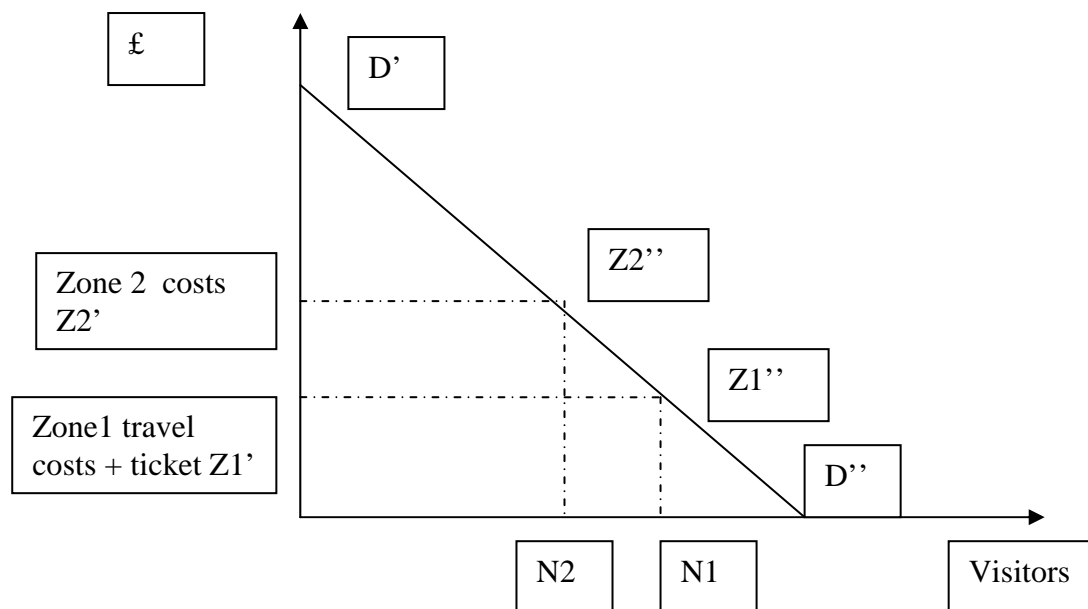


Forrest Grime and Woods (2000) adapt this idea to justifying a subsidy for the Manchester Royal Exchange Theatre's performance of the Brothers Karamazov in February 1993. They estimated the parameters of a demand function in which the price was the distance traveled to get to the performance. They then calculated the consumers' surplus for each zone or

location, in distance units. At the sample mean a distance of 2.66 km was equivalent to a £1 increase in ticket price. The largest apparent consumers' surplus was in the zone at a mean distance of 19 kms. Their best estimate of total consumers' surplus indicated that the social return to a subsidy of £1.5 million was one third greater than the outlay.

The principle of estimating how consumers' surplus varies with distance can be demonstrated as follows. Assume that in two adjacent 'travel to WMC' zones (ordered by distance from WMC) the valuation distributions of those interested in visiting in the two zones are the same. Then ordering these valuations from highest to lowest willingness to pay, constructs the demand curve D'D'' in figure A2. Numbers visiting fall from N1 to N2 as travel costs rise between zone 1 and the more distant zone 2.

Figure A2



Assuming further that D'D'' is linear as drawn, the fall off in numbers in response to the rise in costs (using for example official travel cost data) allows the calculation of the vertical distance Z1'D', and therefore of the consumers' surplus triangle D'Z1'Z1''. The area of the triangle is calculated as $0.5[Z1'N1 \times N1 \times (Z2' - Z1') / (N2 - N1)]$.

To see how the model works, suppose Zone1 is SE Wales and Zone 2 SW Wales, that the (average) distance between them is 40 miles and that the time and money costs of traveling that distance to visit the WMC is £10. Table 1 gives the fall in the proportion of the population visiting as a result of this higher cost, from 0.339 to 0.101. This implies that, if the population of SE Wales were obliged to pay the costs paid by SW Wales, the numbers visiting from SE Wales would fall by 0.238 of the population of SE Wales, or by about two thirds. To simplify the annual visitor figures for illustrative purposes, suppose that the total each year is 600,000 and 400,000 are from Zone 1 (SE Wales). Only one third (0.101/0.339) of SE Wales' 400,000 would visit the WMC when subjected to the higher travel costs, but the remaining 200,000 from elsewhere would continue visiting. So the reduction in visitors would be about 266,000. Then at the same rate of fall-off (each 1p rise in costs loses WMC 266 visitors), another £12.5 (3340/266) rise in travel costs would be sufficient to eliminate the remaining 334,000.

In terms of figure A2 the vertical distance, Z1'D', is £22.5 and the horizontal distance, Z1'N1, is 600,000. The consumers' surplus of visitors to WMC, the triangle D'Z1'Z1'', is then $0.5 \times £22.5 \times 600,000 = £6.75$ million. Simply for the benefit of current visitors, at their pre-visit valuations, it would be socially worthwhile subsidizing the WMC by up to this figure (say £11 per visit), if it was necessary to keep the Centre open.

The size of the consumers' surplus depends critically upon the estimated costs of the average visitor from SW Wales. The figure of £10 has been chosen as a conservative (downward-biased) estimate. Double these costs and the consumers' surplus doubles.

Appendix B : British Cities, Prosperity and Culture

Table B1

Urban area	Total resid. popn.	Total annual popn. change over 5 years	Number of theatres	Number of museums	Number of public libraries	Total book and other media loans per resident	Average price per m2 for a house (euros)	Proportion of employment in financial intermediation and business activities
Aberdeen	212125	0.5768	3	5	17	7.67	1408.15	18.24
Belfast	277391	0.7832	4	7	29	6.31	1360.98	18.72
Birmingham	977087	0.4266	8	7	44	5.14	1318.43	19.61
Bradford	467657	0.0488	3	13	34	5.43	1041.59	14.78
Bristol	380616	0.1613	8	9	27	5.89	1532.85	26.01
Cambridge	108856	0.158	6	8			2536.23	23.36
Cardiff	305353	0.2344	3	(?3)	22	7.06	1489.10	19.41
Derry	105066	0.2812	2	3	7	3.51	950.98	10.18
Edinburgh	448624	0.1664	10	31	30	7.75	2014.39	29.33
Exeter	111080	0.8457	2	5			1553.38	16.13
Glasgow	577869	0.7104	11	19	36	5.99	1321.40	21.59
Gravesham	95739	0.5174		0			1937.48	11.55
Leeds	715399	0.028	7	11	64	5.97	1335.93	21.77
Leicester	279915	0.6024	2	9	23	6.15	1084.36	13.50
Lincoln	85579	0.2778	2	5			1015.82	11.56
Liverpool	439476	0.8353	7	13	25	7.07	992.20	17.82
Manchester	418600	0.5933	10	11	27	6.21	1306.95	25.33
Newcastle upon Tyne	259531	1.1871	7	10	23	7.54	1188.78	19.69
Portsmouth	186699	0.1388	1	7	9	7.42	1570.66	15.31
Sheffield	513231	0.1578	7	8	33	5.74	1136.05	15.60
Stevenage	79734	0.8844	1	1			1762.39	21.23
Worcester	93372	0.649	1	6			1549.44	13.15
Wrexham	128464	0.3881	1		14	5.37	1179.20	8.48
Average	315977	-0.03	4.82	8.95	27.29	6.25	1416.81	17.93

Source: Urban Audit Project

The outlier in the above bivariate association of figure B1 is Cambridge. The association improves substantially from 32 percent explained variance in rents to 47 percent explained when the financial and business proportion of the city workforce is included in the regression model (Table B2). The

coefficient on theatres per 100,000 population in the multiple regression below implies that a city with one more theatre per 100,000 has higher rents of 139 euros per square metre for a house, (about 10 percent of the mean), controlling for the consequences of finance and business service employment on rents. The theatres coefficient is significant at the 3.9 percent level, while the coefficient on finance is significantly different from zero at the 3.4 percent level.

Figure B1

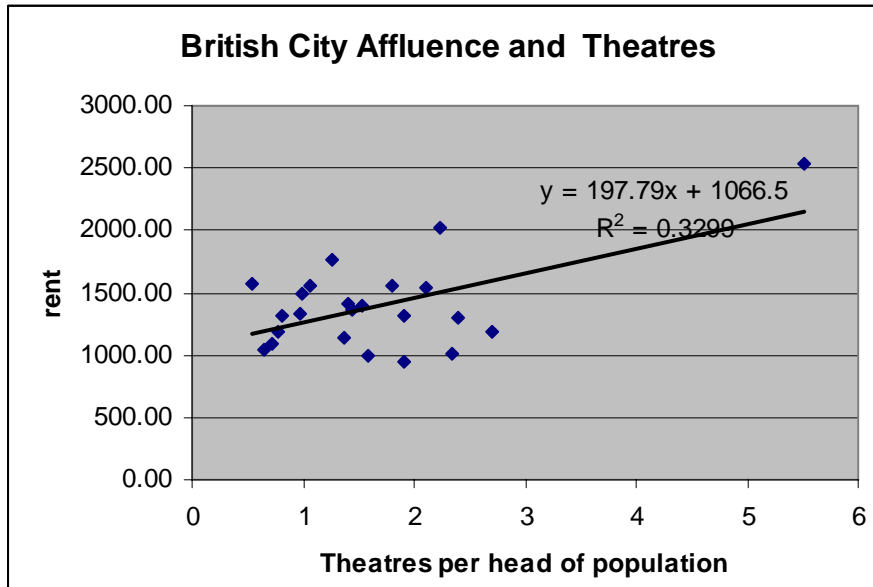


Table B2

<i>OLS Regression</i>					
Dependent variable	Rent				
R Square		0.47			
Adjusted R Square		0.42			
Observations		22			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	634.317	219.721	2.89	0.009	
theatres per 100,000	139.420	62.794	2.22	0.039	
Finance	28.967	12.703	2.28	0.034	