

EXPLORATIONS IN FINANCIAL CONTROL

Essays in Honour of John Perrin

Edited by
Irvine Lapsley
University of Edinburgh

and

Richard M S Wilson
Loughborough University and Sheffield Hallam University



INTERNATIONAL THOMSON BUSINESS PRESS
An International Thomson Publishing Company

London • Bonn • Boston • Johannesburg • Madrid • Melbourne • Mexico City • New York • Paris
Singapore • Tokyo • Toronto • Albany, NY • Belmont, CA • Cincinnati, OH • Detroit, MI

ACCOUNTING AND ACCOUNTABILITY FOR INFRASTRUCTURE

David A. Heald

Professor of Accountancy, University of Aberdeen

INTRODUCTION*

The term 'infrastructure' is often used, though rarely defined in a way which is sufficiently precise as to facilitate measurement. Moreover, there have been marked changes through time in what would be understood as infrastructure in public debate.¹ The UK public sector, as constituted in, say, 1951, encompassed much of that infrastructure, though both a changing economy and privatization have exerted profound impacts over the last two decades. Public concerns are frequently voiced that the United Kingdom's infrastructure has deteriorated, or at least has failed to keep up with modern aspirations.² It would be easy to gain the

* This research has been financed by the ESRC Local Governance programme.

1 The idea is that of 'underlying fabric'. Helpful definitions of 'infrastructure' and of 'social overhead capital' have been provided by Diamond (1990: pp. 77–8, italics in original):

No single definition of infrastructure seems to be generally accepted, but the term is usually associated with the diverse collection of public assets that underpins the economy – however provided and managed – and possesses three basic elements:

- they are a *collective* input into production by local, regional or national state authorities because private and exclusive use by any individual firm would be either uneconomic or the benefits indivisible;
- large investments are involved, into *mainly physical but also human capital*, from which a long-term stream of benefits may be expected;
- they are *integrative* because economic agents are linked together, through transport and telecommunication networks and transactions between them.

The term 'social overhead capital' is often also used because it covers social infrastructure such as public health and human capital investment facilities, including training and education, in addition to the assets traditionally regarded as infrastructure such as transport and communication networks, the public utilities and basic public services such as the police and the judiciary (p. 84).

2 The available evidence is like patchwork, though it does cumulate. A necessary caveat is that a considerable proportion of the published material emanates either from pressure groups favouring higher public expenditure or from those with provider interests. Serious problems are widely acknowledged to exist in the public sector housing stock, notably in urban areas: 'Investment in council stock renovations actually increased

impression from much newspaper coverage that London, in particular, had reached an advanced state of disintegration (e.g. Sudjic, 1995).

The reasons why such concerns should be expressed are complex, though the principal factors are conveniently discussed in three groups. First, there is a hysterical tone to much current UK political debate, as manifested in the controversies on sleaze and misconduct in public life and about social inequality (e.g. the reception of the report (Barclay, 1995) of the Joseph Rowntree Foundation inquiry into income and wealth). It suits opposition parties well to claim that, after 16 years of Conservative government, the fabric of society is falling apart. Yet there is also the apocalyptic tone of the all-party Public Accounts Committee's (1994) report, *The Proper Conduct of Public Business* (stating that standards in public life are falling below those established 140 years ago), and the view expressed to the Nolan Committee by Lord Blake, a constitutional historian and Conservative peer, that the United Kingdom is experiencing its most corrupt period since Edwardian times (Wintour, 1995). The view of the present author is that much of this is extravagant hype; most of the cases of corruption are petty in relation to experience in other countries; most of the cited cases are not ones of corruption but of management failure; and many of the cases derive their political salience as vehicles for developing attacks upon changing systems of governance, notably upon the role of 'quangos' (Dynes and Walker, 1995; Gay, 1994; Palmer, 1995).

Second, the quality of infrastructure is perceived to be relevant to the quality of life of citizens, with deteriorating infrastructure threatening to offset growth in living standards as measured by such indicators as GDP per capita or personal incomes per capita. Whether or not this is true, this concern is recurrent in UK public debates. Infrastructure capacity is one issue, with capacity requirements being shaped in part by pricing policies. Congestion may be a product not of inadequate capacity but of a failure to manage demand growth. Less closely connected to physical capacity are

throughout the 1980s . . . but there nonetheless remains a substantial backlog of disrepair for many councils to tackle if they are to provide reasonable standard housing for their tenants. For all English authorities this backlog has been recently estimated at £8.5 billion (at 1991 prices) by the Audit Commission' (Wilcox et al., 1993, p. 30). The National Audit Office (1991) castigated the state of the school building stock; parks and open spaces are becoming run-down (London Boroughs' Association, 1995); earlier underinvestment in sewerage when water was in the public sector has led to large positive K factors being included in the price control formulae set for the privatized water (and sewerage) companies, thereby allowing price increases considerably above the rate of inflation; the road network is said to be deteriorating in condition (though that might be attributable to the lack of road pricing); and underinvestment in rail is alleged (though that might be because of non-viability). A spectacular row has broken out concerning the Forth rail bridge, due to Railtrack having stopped the legendary continuous painting: there is much dispute as to whether the bridge is rotting or whether the deterioration in appearance is superficial (Holme, 1995).

constraints upon use or quality deriving from social phenomena such as crime. Residents may undertake 'defensive' expenditure, such as on household and car security, and may avoid threats to personal safety by travelling only by private vehicle. In extreme manifestations, infrastructure which, from a physical perspective, is perfectly functional may be rendered worthless, as in the case of the virtual abandonment of tracts of land in the centre of some US cities. However, there is a much more general problem, concerning the ways in which employment and residential decentralization within urban areas can render infrastructure redundant or cause it to exhibit excess capacity (Parr, 1993).

Third, there has been an explosion of interest in economics literature, notably in the United States, in the links between public capital investment and private sector productivity growth. The work of Aschauer (1989a;b) has been extensively cited: in brief, he attributed the slowdown in US private sector productivity growth over the period 1973–85 to reductions in public capital investment. There are difficult econometric issues here, making empirical validation or refutation difficult. The assessment of the results is rendered more problematic by the enthusiastic reception given to them by those advocating higher public capital investment and their dismissal by those holding opposite views: Munnell (1992) noted the obstacles to objective interpretation arising from the obvious political sensitivity of this literature. Whereas Aschauer contended that reduced public infrastructure investment caused falling private sector productivity growth, his critics have countered that there may be reverse causation: falling private sector productivity growth caused falling public infrastructure investment, due to there being less need for such spending or less ability to finance it (Ford and Poret, 1991). The kernel of the idea is that some types of public investment improve the return on private investment (e.g. improved highways reduce transport costs) and thus the equilibrium level of private investment will be higher than otherwise. Other types of public investment substitute directly for private investment (e.g. public investment in health reduces private investment). Naturally, there is an offsetting effect in that government requires to secure the necessary resources: taxes will reduce the demand for private outputs (and hence reduce private investment in sectors where demand falls below what it otherwise would be) and public borrowing may lead to higher interest rates. What matters is the net effect. Aschauer (1989b, pp. 185–6) also drew attention to composition effects: cutting defence capital expenditure and increasing highways expenditure by the same amount will not have exactly offsetting effects on the rest of the economy. Likewise, the economic effects of public capital investment will be different from those of current expenditure, as when teachers' salaries are substituted for school building.

The word 'public' has become increasingly difficult to interpret and great care is required to be sure of context. Infrastructure can be 'public' because it is – singularly or in combinations – publicly owned, publicly financed, publicly operated or the public has 'access'. There is also the question of whether 'tolls' are levied or whether use is free of charge at the point of consumption. If tolls are used, are they designed to ration use or are they simply conceived as a means of financing? The question frequently ought to arise as to whether a new piece of infrastructure is actually 'needed' or whether pricing to ration capacity might eliminate the need for additional investment (e.g. by shifting the time-pattern of usage). Rees (1987) proposed a scheme of peak/off-peak pricing for the Severn bridge, and was roundly abused ('Madcap of the month' award) in the South Wales and South West England media. Quite apart from such media reactions, there is frequently a reluctance to toll, partly for distributional reasons, though such concerns ought to be set against the substantial danger that facilities will be unnecessarily duplicated to deal with rush-hour or seasonal peaks. An important technical – as opposed to political – constraint on tolling may be the difficulties in controlling traffic diversion when the ordinary road network is not tolled and where there may be heavy social costs arising from such diversion.³

The preceding paragraphs have demonstrated the practical importance and policy relevance of accounting and accountability for infrastructure. This essay is structured in a form which has been shaped by John Perrin's (1984) paper on accounting for public sector assets, one of the occasions when he moved from his primary concerns with accounting in the National Health Service (NHS) to a broader public sector canvas. In that survey paper, Perrin established a research and policy agenda which he focused by posing four questions and then offering provisional answers. This essay both reflects upon developments in the subsequent eleven years, and widens the canvas to infrastructure which is (now) located beyond the (formal) boundaries of the public sector.

Perrin's questions were:

- Is 'opportunity value' acted upon?
- Is capital expenditure wisely decided and controlled?

³ Since 1 April 1992, the Severn bridge has been tolled only in a westbound direction. Untolled eastbound traffic is now about 5 per cent higher than tolled westbound traffic. 'Rat-runners cross the Severn at Gloucester before heading into Wales along the A40, then go down either the A48 to join the M4 or through the Forest of Dean on the meandering A4136 and down the Wye Valley, an Area of Outstanding Natural Beauty. . . . David Foice, the Severn bridge manager, insists that one-way tolling has dramatically reduced queues . . . ' (Dunn, 1995). This example neatly illustrates both second-best problems (tolling some parts of a network may impose serious costs elsewhere in the network) and potential conflicts between third-party and user benefits.

- Is [the] capital stock being maintained?
- Is the cost of maintaining [the] capital stock [intertemporally] equitably shared?

Before tackling these questions, attention needs to be directed to how the infrastructure has been changing, in ways which would not have been fully foreseen in 1984.

HOW THE INFRASTRUCTURE IS CHANGING

The infrastructure has been changing in four principal ways, conveniently labelled in shorthand as ownership, financing, composition and access. Concerning *ownership*, general government and public corporations are becoming much less important as principal providers: public utilities (telecommunications, gas, electricity, and water in England and Wales) have been privatized, with rail (in process) and posts (temporarily delayed) following them. Concerning *financing*, the privatized utilities are responsible for the financing of their own investment programmes and the use of concession arrangements is spreading, both for facilities outside the public sector (e.g. the second Severn crossing) and services still inside (e.g. '15 major water projects around Scotland' at a capital cost of £1,000 million (Scottish Office Finance Group, 1994)). Concerning *composition*, much greater emphasis is placed in public debate upon the non-physical infrastructure: there is less attention on concrete, more on human capital, social capital and environmental assets. The infrastructure may be wearing out faster, or becoming obsolete or redundant faster. For some types of infrastructure and in some locations such as inner cities, an additional problem may be harsher use by the public, as a separate issue from faults in its care by the infrastructure owner/operator. Concerning *access*, there has been a far-reaching challenge to the orthodoxy that the owner of the infrastructure should be the sole user: rights of common carriage are being established over public utility and rail networks, extending the vehicle/infrastructure separation long ago established in the case of the road network. Access pricing has thus become a major issue in economic regulation (Laffont and Tirole, 1994).

Many of these changes can be viewed as part of the process of 'hollowing out' the state (Dunleavy and Hood, 1994; Rhodes, 1994). There is an international trend for governments to abandon their traditional role as producer, refocusing their role as purchaser and regulator (OECD, 1993; 1994). There is greater belief in the market (total privatization of public enterprises in competitive sectors); a view that public regulation is more efficient than public ownership has reshaped public policy towards utilities; and there is growing confidence in the use of quasi-market mechanisms for core public service delivery (e.g. health,

education and housing). The motivations for these changes are complex, extending beyond concern with value for money (their standard justification) to wider considerations of the political strategy of governing parties (Dobeck, 1993). Though impossible to confirm or deny, the suggestion should be noted that quasi-markets are only a half-way house – the most which is currently politically feasible – and which by their success (or failure) will create opportunities for full privatization (Davis, 1994; Glennerster and Le Grand, 1994; Mather, 1994). Irrespective of eventual institutional destinations and market evolution, the transition from integrated public service bodies to providers within a framework of purchaser-provider separation constitutes a move from being budget-financed organizations to self-sustaining organizations (Rutherford, 1983), dependent for survival upon their own capacity to generate revenues. A prediction is that these changed managerial incentives will concentrate attention on benefits which are appropriable as revenues.

Whereas some of the quasi-market providers remain part of the UK public sector (e.g. Next Steps Agencies remain part of central government and NHS trusts are public corporations), many are constituted as private sector organizations (higher education institutions, further education institutions, grant maintained schools, and training and enterprise councils). If quasi-markets are seen to work, it is likely to be argued that there is no continuing reason to keep such providers within the public sector. A practical consequence of such developments is that most assets transfer out of the public sector and that public expenditure is converted into a huge purchasing budget. If markets were seen as genuinely competitive, there would be less reason to investigate what is happening to the assets of the providers; in reality, there are reasons to believe that local monopoly is prevalent and to doubt whether bankruptcy and service dislocation are likely to be politically tolerable.⁴ If these concerns are well-founded, there will be media and political interest in what is going on 'outside'.

Paradoxically, such 'hollowing out' is accompanying a substantial move within UK government from cash to accruals accounting, implemented exactly at the time when government may cease to be a substantial owner of assets. There have been marked divergences in the accounting traditions of different parts of the UK public sector: central government (cash); local authorities (variants of the financing basis); and

⁴ There have been few examples of public or quasi-public bodies going into receivership. Grant Thornton have been appointed as receivers to South Thames TEC which owes £5–6 million, which is unlikely to be recovered in full. It seems likely that South Thames TEC's activities will be divided between South London Training and Enterprise Council (SOLOTEC) and Central London Training and Enterprise Council (CENTEC). Thus far, training providers who, as unsecured creditors may not receive anything, have received *ex gratia* payments from the Department for Education.

nationalized industries (UK GAAP plus Current Cost Accounting (CCA), long after the latter's abandonment by the private sector). The prominence given to the Treasury's (1994a) Green Paper on Resource Accounting and Budgeting may divert attention from the way in which accruals accounting has been spreading across central government alongside 'agencification' (Pendlebury et al., 1994).

Restructuring the traditional public sector into distanced, market-tested or quasi-public bodies, supposedly working within a market context, naturally raises issues concerning commercial confidentiality. When public bodies were insulated from competition, it was much easier to make the argument that their status implied that decision-making on investment ought to be transparent. Battiato (1993) argued that cost-benefit analysis could be viewed as a mechanism for exerting control over politicians, by enhancing transparency of costs and benefits and thus reducing asymmetry of information. In the new context, much information about investment decision-making may be excluded from the public domain on the grounds that these are private matters (when providers are private) or commercial-in-confidence (when providers are public). Similarly, information about guarantees or understandings may also be suppressed: for example, in the context of private roads, about approach roads built at public expense; about competing public roads not being upgraded; or about the withdrawal of government-controlled substitute facilities.⁵

The Private Finance Initiative (PFI) (Treasury, 1993) was the child of the retirement of the Ryrie Rules (Heald, 1994), which had since 1982 governed the use of private finance in the public sector. In practice, the PFI is partly grounded in the genuine conviction that the transfer of risk and responsibility to the private sector will lead to efficiency gains, but is also in part an attempt to circumvent the Public Sector Borrowing Requirement (PSBR) constraint. Despite the way it has at times become a totem, the PSBR is economically important, though its measurement raises certain complex technical issues (Ritchie and Lawton, 1993). The genuine problem relates not to the PSBR itself, but to the way in which arguments about the PSBR have been used. A fundamental source of the power of Treasury ministers and officials stems from control over definitions, from which flows control over how the policy problem is formulated, determining which 'answers' are acceptable. There is a substantial build-up of private borrowing by certain public and quasi-public providers, often under the auspices of the PFI. Such borrowing is only permitted when the government department or funding agency is willing to support such asset expansions. Unsurprisingly, local autho-

5 For example, Caledonian MacBrayne's Kyle of Lochalsh to Kyleakin ferry will be withdrawn when the privately financed Skye bridge opens.

rities and policy communities then invest their energies into canvassing mechanisms which would allow comparable treatment for their directly managed services.⁶ Control over definitions is not just a technical matter, but affords means by which central government can control policy and promote institutional developments such as privatization. Such deliberate departures from a level playing field can be reinforced by more direct methods: the Department of Transport explicitly instructed local authorities to dispose of their bus companies. A similar fate awaits local authority airports, which can be starved of new capital until privatization becomes irresistible.

ADDRESSING THE FOUR QUESTIONS

Question 1: Is opportunity value acted upon?

In essence, this question has two elements. First, there may be situations in which assets are being used for public service delivery which have alternative use values higher than their value in existing use. When this differential is sufficiently high to offset both the costs of alternative facilities and the transactions costs of relocation, the option of relocation should be chosen. Second, existing assets may either be functionally unsuitable or simply less efficient than those now available, thereby creating opportunities for cost reduction through asset replacement. Perrin's (1984, p. 64) concern was that public bodies might desist from desirable asset redeployments because of inertia, poor incentive structures and decision-makers' desire to avoid the 'hassle' of trade union, media and pressure group opposition to schemes involving facility closures and asset disposals.

Two accounting reforms were seen as mechanisms which would address such sources of inefficiency. First, a move to accruals accounting would necessitate the maintenance of asset registers, the

⁶ 'This report develops and evaluates new ideas in the search for arrangements for a viable future for council housing that would place it beyond public expenditure constraints and controls, while retaining a strong element of local control . . . The researchers look at the shortfall in resources for social housing investment and examine the scope and limitation of various ideas for increasing this investment . . . The researchers conclude that local housing companies with a substantial degree of local council involvement can be readily established within the existing framework of UK public expenditure conventions and local government legislation' (Wilcox et al., 1993, back cover). The vital question, however, is whether the government would permit such a development, or would redefine the rules or, more subtly, wait until the transfers had been made and then order disposal of these housing companies. The context for such proposals is obvious: central government and its quangos (Housing Corporation, Scottish Homes and Housing for Wales) have devised a system which treats that housing stock which is 'voluntarily' transferred to housing associations far more generously than that remaining in local authority ownership.

frequent neglect of which under cash accounting created the danger of asset hoarding. Proper capital accounting would enhance transparency. Second, there were readily available mechanisms which would improve the incentives facing managers, with partial retention of the proceeds of disposals being an obvious first step. More ambitiously, schemes of capital charging would end the present view of capital as a free good. Moreover, with greater attention paid to capital accounting, the incremental cost of capital charging schemes would be substantially reduced. The attention now being given to capital charging as a central component of Resource Accounting has brought into the public domain documents which had earlier been produced by the Treasury (1990, 1992) on asset registers and capital accounting. There are undoubted benefits in making managers aware of the capital assets which they control. In the case of the NHS, which has pioneered capital charging (Mayston, 1990), unnecessary costs and delays have arisen due to the mismanagement of software and software training. Beyond such implementation difficulties, Heald and Scott (1995) showed that NHS capital charging in practice suffers from a number of problems, arising in part from the adoption of the Depreciated Replacement Cost (DRC) valuation basis which may give false signals about both investment and pricing. Nevertheless, Heald and Scott (1994) found strong managerial support for capital charging which had not been shaken either by implementation problems or by reliance on DRC.

Perhaps the fundamental empirical question concerns how much control managers actually have over the assets which they use. The answer to this question is of practical relevance, since the conclusion that control is only partial would caution against rapid moves to full weighted capitation for the distribution of the funds which purchasers receive to pay capital charges. Managers who have limited access to capital and whose closure decisions are vetoed find themselves in an exposed position. There can be difficulty in establishing who really should take responsibility for earlier public investment decisions, and this has substantial implications for mechanisms such as capital charging. When politicians value the 'announcement' effect ('photo opportunities' and new facilities in particular constituencies), the problem may only materialize much later. The prospect of capital charging might constrain political decision-makers, but if they proceeded anyway such intervention might later destroy the financial viability of affected public providers. A further problem arises when some providers are able to locate assets outside the boundary of capital charging. The availability of donated assets avoids the payment of capital charges, and confers competitive advantage within the internal market. Privately financed assets may be cheaper, or more expensive, than assets financed from public funds and liable to capital charges.

These tensions originate from the Conservative Government's enthusiasm to supplement public funds (limiting the call on taxpayers) and to make use of commercial private finance (securing efficiency gains and taking pressure off public borrowing) at the same time as it emphasizes the construction of level playing fields as the generator of competition-induced efficiency gains.

A distinctive characteristic of many government assets is that they do not generate a revenue stream to the government owner. As Mautz (1981; 1988) observed, the Washington Monument not only fails to generate a revenue stream, but actually generates a cost stream. However, the Washington Monument provides a benefit stream to US citizens (pride in nationhood) and to foreigners (one of the world's tourist attractions). Mautz contended that the Washington Monument should be treated as a liability in US federal government accounts, a conclusion which was disputed by Pallot (1990). This distinction between revenue streams and benefit streams is one of the primary differentiating features between government and 'private' accounting. Some mitigation may be afforded by the establishment of quasi-markets in which providers become self-sustaining, though the implications of purchasing budgets originating in public expenditure programmes should not be overlooked.

A related issue figures prominently in the context of the Treasury's (1994a) Green Paper on *Resource Accounting and Budgeting*. The restructuring of public service delivery is accompanied by a substitution of assets owned by the private and quasi-public sectors for assets owned by general government. Schedule A to the Green Paper treats capital grants as a component of net operating costs; the assets financed by capital grants do not appear in the balance sheet (Schedule B) because ownership is located outside the departmental boundary. Capital grants might become very important as the expression of the public sector's wish to make a financial contribution to a privately financed infrastructure project in order to ensure that decision-makers internalize third-party benefits. A possible example would be a capital grant for the difference between the capital cost of an aesthetically pleasing bridge and that of an ugly bridge. Even though much of government capital expenditure might in future take this form, there would be no accounting recognition of this in departmental balance sheets. The public contribution to such privately controlled infrastructure development might be the transfer without payment of land and buildings, as when existing facilities are put into a concession (Heald, 1991; 1995).

Question 2: Is capital expenditure wisely decided and controlled?

This apparently simple question is much more complex than is evident at first sight, embracing a number of distinct sub-problems: whether public

investment is at the optimal level; whether the composition of investment is optimal; and whether chosen projects are efficiently implemented. On overall levels, there is undoubtedly a view that capital expenditure has been regularly squeezed relative to current expenditure during the harsher post-1975 climate for public expenditure decisions (e.g. Ward, 1994).⁷ On composition, there has been concern that some investments have been fundamentally misguided and wasteful, though such an outcome can arise either because of faulty decision processes or because the priorities of political decision-makers diverge from those which policy analysis perceive to be legitimate. The Humber bridge, certainly the most expensive by-election bribe in post-war UK history, illustrates the latter (Mayston, 1993a). In the case of the Pergau dam, an electricity-generation project in Malaysia partly financed by the UK aid programme, the 'linkage' between aid and defence exports prevailed over the results of project appraisal.⁸ Whereas faulty appraisal suggests that more attention should be paid to criteria of evaluation, the use of capital projects for party advantage can only be countered either by rendering such transactions transparent or by removing the political component of decision-making. Faulty implementation of projects raises the issue of project management: a nightmare case of mismanagement on site is the new British Library at St Pancras, about which the National Heritage Committee (1994) expressed outrage.⁹

7 'In July 1993 the Chancellor [Kenneth Clarke] remarked to us: "It is too easy to make cuts in capital government spending, which is what the Labour Government did after 1976, mainly because bricks and mortar do not belong to a trade union and they do not walk about and do not complain, so you cut your capital spending before you move on to current if you are not careful". *'We believe that the reduction in the level of capital expenditure announced in the November 1993 Budget reflects the relative ease with which such cuts can be made'* (Treasury and Civil Service Committee, 1994a, para. 90, emphasis in original).

8 Words do not always mean what they seem to mean, as evasive drafting is a valued talent in government. The following passage shows how little remorse there has been for the illegal tying of aid to Malaysian arms purchases: 'The proposed aid was for a valid development project which would produce much-needed peak-time power in an environmentally-friendly and sustainable way' (Government observations in Foreign Affairs Committee, 1994, para. 8). This project had been denounced by the then Permanent Secretary of the Overseas Development Administration who, having been overruled by ministers, reported the matter to the Public Accounts Committee in his capacity as Accounting Officer.

9 'The saga of the new British Library is a sorry story. What governments (of both main parties) set out to provide was a suitable headquarters for one of the greatest libraries in the world. It should have been an example to the world of how a great project can be achieved at acceptable cost, can be appropriate for its purpose, and can moreover be an adornment to the capital city in which it is situated. Instead, more than sixteen years after the project was launched and twelve years after construction was started, there sprawls next to St Pancras station a messy building site in which there lurks an edifice which resembles a Babylonian ziggurat seen through a fun-fair distorting mirror. No-one – Ministers, library staff, building contractors, anyone at all – has more than the faintest idea when the building will be completed, when it will be open for use, or how much it will cost' (National Heritage Committee, 1994, p. v).

Verbeke (1988) stressed the distinction between formulating optimal investment criteria and devising a framework of incentives and sanctions which induces decision-makers to choose projects on such a basis, rather than simply using appraisals to rationalize project choices. The influence in the United Kingdom of the Treasury's (latest edition, 1991) standard methodology guide on public sector investment appraisal has varied across programmes, its implementation heavily influenced by the structure of government. It is relatively easy in hierarchical organizations to insist that the originators of capital projects jump through a series of formal hoops (e.g. Discounted Cash Flow (DCF) appraisals at a Test Discount Rate (TDR)) but much more difficult to ensure that such appraisals actually *determine* decisions rather than *legitimate* them. Although formal compliance with option appraisal procedures seems to have been high in the NHS, a widely held view is that the existence of 'financially free' capital – notwithstanding appraisal procedures using the TDR as a shadow discount rate – led to a bias in favour of new build rather than the less glamorous adaptation of the existing capital stock. Outside central government, adherence to the guide appears to have been patchy, with there being limited use of systematic project appraisal techniques over wide areas of local government activity (including education, and water and sewerage projects). However, a survey by Lapsley (1986, p. 148) found among public sector non-trading organizations 'considerably higher levels of sophistication and of *ex post* reviews of capital projects than expected'; that 'HM Treasury initiatives have been only partially successful'; and that 'the greater "commercial" orientation of [Regional Water Authorities] . . . has been accompanied by a high standard of options appraisals'.

The new institutional context of quasi-markets and distanced providers raises a number of new considerations. Within the internal market model – for which the NHS is acting as pioneer – there will be a new emphasis upon the financial profitability of providers, thus creating a tension between the cost-benefit criterion of option appraisal and the financial appraisal made essential by the profitability targets faced by the provider. Conflicting signals may occur: option appraisal may support a project which financial appraisal rejects, or vice versa. A significant problem will be the lumpiness of capital investment which will mean a sudden increase in capital charges. Given the decentralization of managerial authority and accountability, the difficulty will be that a major project will represent such a large chunk of assets relative to the existing asset base, whereas before fragmentation such an increment would have been much less significant. Even where the new capital facilities will enable the disposal of other assets, the effect will not be instantaneous as there may be an element of double running, thus affecting both revenue costs and capital charges. Moreover, capital

facilities are designed not just to meet requirements at commissioning date, but are built with an element of planned spare capacity to meet demand growth. However, under the internal market, revenue will be determined solely by current activities whereas capital charges will relate to *in-situ* facilities. The predicted effect is that providers will be extremely nervous about new capital developments, at least during the running-in period of internal markets and until the scope for improved utilization of existing buildings has been fully explored. Mayston (1993b) noted the potential importance of the fact that purchasers and providers are prevented from entering into long-term contracts.

There have been conflicting views in the literature as to how risk should be handled in public sector investment appraisals. One view has been that the public sector should adjust for risk in exactly the same way as the private sector, using the appropriate risk-adjusted cost of capital exactly as the private sector should. The other view, deriving from Arrow and Lind (1970), has been that under particular conditions, the public sector should be risk-neutral, thus treating as equivalent two projects with the same expected value but different standard deviations. Although surrounded by growing caveats, the clear thrust of Treasury guidance has continued to favour the risk-neutral position (O'Donnell and Rhodes, 1983); the caveats seem to have exerted little effect when actually determining discounting procedures and discount rates.

The theoretical underpinning for this position relies on risk being widely spread and there being a negligible (strictly, zero) correlation between the returns from public projects and national income (Lind, 1982). Variability risk is obviously easier to handle in the context of many similar projects. The greater decentralization there is in financial responsibility for capital programmes, the less convincing to decision-makers will be the argument for risk neutrality. Exactly the same tension arises in the private sector between the interests of undiversified managers and well-diversified shareholders, though there the threat of takeover through the capital market is a mechanism for disciplining managers who pay too much attention to unsystematic risk. There are no obvious substitute mechanisms in the public sector: either managers in comparatively strong situations may behave in strongly risk-averse ways which are seriously sub-optimal in aggregate; or managers in weak situations may be tempted by the gambler's last throw, staking everything upon a low probability that a highly favourable project outturn will come to their rescue. Within the framework of a private firm accountable to the capital market, the existence of shareholders as residual claimants should place some constraints upon such behaviour.

Capital charging in the context of purchaser/provider separation

raises two new sets of issues. First, the forward capital programme has to be managed by central government departments under circumstances when the old enthusiasm for new capital schemes has been tempered. Moreover, providers may oscillate between enthusiasm and lack of enthusiasm in response to financial developments which are short term at least in relation to capital planning timetables. Central departments may therefore find it much more difficult to schedule capital schemes in relationship to the Public Expenditure Survey (PES). Second, the question of who bears risk acquires a new salience. Looking at the sector as a whole, it might be reasonable to argue that decision-makers should be risk-neutral as the effects of variability will cancel out within the context of a capital programme consisting of many projects. Central departments would want the responsible managers to work hard at managing risk (e.g. eliminating downside risk by better project design and project management) but to bear unsystematic risk without attempting to shift it or to insure against it. The position looks very different from the viewpoint of those responsible for individual projects whose pay and careers depend upon the success of that project. There are strong personal incentives to worry a great deal about unsystematic risk, redesigning projects in ways which sacrifice returns in order to reduce it. In practice, central departments will find it immensely difficult to distinguish actions which reduce variability from those which sacrifice return for reductions in unsystematic risk.

Furthermore, there is the question of whether the public sector's capacity to borrow cheaply should be exploited or discarded. The capacity of a government to borrow cheaply does not originate from the quality of its projects, but from its access to tax revenues so as to fulfil its financial obligations, even when there is project failure. From one perspective, exploitation offers the opportunity of the same infrastructure at lower cost, or better infrastructure for the same cost. From the other, discarding the advantage of 'cheap' borrowing by imposing a shadow cost of capital equal to the relevant risk-adjusted market rate removes the danger of infrastructure overexpansion. If decisions are really being driven by economic criteria, higher discount rates imply a less capital-intensive infrastructure.

In summary, there is a range of questions, both strategic and tactical, to be addressed about investment decisions. These include: whether attention focuses on revenues or benefits; the approach to risk; the desirable extent of decentralization of investment decision-making (Muraro and Pola, 1990; Mayston and Muraro, 1993); the distinction between large one-off projects (the Channel Tunnel being an extreme example) and replicable investments in roads and schools; and the role of concessions and of private finance within services still provided by the public sector.

Question 3: Is the capital stock being maintained?

Conceptually, the distinction between Operating Capability Maintenance (OCM) and Financial Capital Maintenance (FCM) is clear (Tweedie and Whittington, 1985; Heald, 1989a). OCM refers to the maintenance of the productive capability of the entity, meaning that it is necessary to replace assets which wear out either by identical assets or by ones of equal productive capability. While falling real replacement costs for capital assets will make OCM easier to achieve, rising real replacement costs will make OCM more demanding. In principle, the use of Modern Equivalent Asset (MEA) methodology is necessary, but this is in practice troublesome, especially when technological change is rapid and relative prices change; a substantial degree of management discretion may be introduced, leading to problems with verifiability (Heald, 1989b). In contrast, FCM refers to the maintenance of the purchasing power of the shareholder, the owner external to the entity who has supplied the capital. For this to be achieved, the entity must be sufficiently profitable to maintain the real purchasing power of the shareholder's capital, as well as remunerating the shareholder at the relevant opportunity cost rate.¹⁰ It is easy to see why a finance ministry and its officials (Byatt, 1986; Spackman, 1991; Treasury, 1991) would see the link between project appraisal using a TDR and achievement of FCM as an *ex post* measure. While measurement of OCM becomes involved with specifics about particular sectors, attention to FCM redirects attention to the need for an efficient allocation of resources across sectors.

Provided that discussion is confined to the public enterprise sector, it is easy to conceive of the Treasury as the external shareholder (concerned with FCM) and the enterprise's management as being more concerned with OCM (e.g. maintenance of the existing British Rail network). Transfer of these concepts to the non-trading public sector encounters more difficulty. Much of the debate about infrastructure concerns third-party benefits as well as user benefits; though there may be considerable developments ahead in terms of charging users, it is usually impractical to charge third-party beneficiaries. In this context, OCM needs to embrace the generation not just of user benefits but also of third-party benefits, thus referring to the full range of benefits and not only those which are (partly) appropriable through pricing. Accordingly, a broad conception of the relevant domain is required when applying OCM to externality-generating infrastructure. Moreover, there has to be a great deal of care in specifying exactly what public policy objectives are, as it is possible for the discussion to become stranded between high-level

10 The form which this maintenance and remuneration of capital takes – dividends, distribution of capital or capital appreciation – is a subordinate issue.

objectives (desired goal) and the low-level objectives (implementation targets) in terms of which mission statements are often framed.¹¹ Taking a specific example, when the goal is public safety, prisons have a role to play in taking criminals out of circulation for specific periods and for their deterrent value. It should be possible to monitor OCM of the prison system. However, if there is substance in the cynical view that prisons are partly a training school for more effective criminals, maintaining OCM of the prison system is not necessarily connected in any positive way to the pursuit of public safety. Whereas the Treasury (as implied shareholder of public prisons) and the owners of private prisons may vigorously pursue FCM, its achievement is not helpful from a policy evaluation perspective.

The conclusion that everything is very complicated should come as no surprise. Despite ministerial rhetoric about the public sector adhering to the tried and trusted accounting solutions of the private sector, the formidable problems confronting private sector accounting are well known. Whittington (1988, p. 86) observed that, following the abandonment of CCA, asset valuation had become discretionary: 'current accounting standards offer the attractive opportunity of revaluation at the preparer's option, rather than rigorously applied historical cost'. Sir David Tweedie (1994), Chairman of the Accounting Standards Board (ASB), pictured the accounting standards-setting process as having been on the brink of collapse before the establishment of ASB in 1990.

ASB's (1993a; b) own pronouncements on the role of valuation in financial statements have confirmed the complexity of matters, even within its primary remit of companies unequivocally geared to profit as the criterion of performance. In contrast, the Treasury's (1994a) Green Paper gave a misleading impression that UK GAAP is largely unproblematic, and that any major valuation problems referred to the public sector's 'difficult' assets (such as military and heritage assets). ASB (1993a) emphasized the symmetry between the valuation concepts which are required to implement the 'value to the business' rule for assets and the corresponding 'relief value' rule for liabilities:

Value to the business

replacement cost
recoverable amount
value in use
net realizable value

Relief value

replacement loan
cost of discharge
present value of future payments
repurchase price

¹¹ Following the Fundamental Expenditure Review of the Treasury's running costs, the Treasury has one aim, broken down into three missions which are in turn broken down into 12 objectives. Objective 8 is 'promoting greater use of private finance in support of services currently provided by the public sector and the privatisation of those parts of the public sector which do not need to remain in public ownership' (Treasury, 1994b, p. 6). Such a formulation takes for granted that greater use of private finance is desirable.

Asset valuation in the public sector, and of public infrastructure, is made particularly complex by a number of features. There are severe aggregation problems when valuing networks (Edwards et al., 1987); asset longevity may result in there being marked differences between the asset being valued and its MEA; asset valuation may be extremely sensitive to assumptions about the market and public policy context (e.g. a private hospital in receivership); and price or profit regulation may profoundly affect valuation. Valuation of certain liabilities (e.g. storage and processing of nuclear waste) is probably even more difficult.

Thus far, there has been no discussion of whether the pursuit of capital maintenance is a desirable objective. A possible interpretation of post-1979 events is that the Conservative Government is in the process of effecting a one-off downsizing of the public sector, distributing surplus capital to the present generation. Moreover, it is claimed that a large discount on transfer is justified because the assets will be better used by the private sector or have more productive alternative uses. Successful transfer opens the way for these benefits. From this perspective, one advantage of valuing assets and preparing balance sheets is that such a process readily identifies what is still available for sale.

Although no definitive conclusion can be reached by monitoring levels of capital expenditure – essential maintenance of existing assets may be being displaced by wasteful new build – there is naturally interest in trends in public sector capital spending. However, it turns out to be very difficult to make comparisons over time. Hibberd et al. (1992) discussed trends in public sector capital spending, distinguishing four measures:

- *general government gross domestic fixed capital formation* (GDFCF) which is measured in the national accounts net of receipts from the sale of land and existing buildings
- *general government investment* which is defined as general government GDFCF excluding transactions in land and existing buildings, thus measuring additions to the nation's capital stock
- *general government capital spending* which is defined as the sum of GDFCF (net of receipts from asset sales), capital grants, net lending and changes in stocks held by government
- *public sector asset creation* which comprises: gross expenditure on investment in fixed assets by general government and public corporations; capital grants made by the public sector; and defence investment spending on the NATO definition.

Different series may convey different messages. Complications in the interpretation of trends arise from: privatizations (so that data are not directly comparable for the periods before and after ownership changes); reclassifications within general government and from general govern-

ment to public corporations; the size of asset sales proceeds (unless gross measures are used); and the particular circumstances of certain years (e.g. 1989–90 when capital expenditure was exceptionally high because of an impending change in the local authority capital control regime in England and Wales).

The latest figures contained in the 1995–6 Statistical Supplement (Treasury, 1995, table 1.7, p. 17) are on a fifth basis, *public sector capital spending*, which consists of: GDFCF (net of receipts); capital grants to the private sector; and the value of the physical increase in stocks. Expressed in real terms (i.e. cash adjusted by the GDP deflator, 1993–4 prices), there is a 23 per cent fall from £24,916 million in 1989–90 (outturn) to £19,300 million in 1997–8 (plan). Many factors will lie behind this fall: privatization of public corporations including nationalized industries; the spread of contractorization in forms where the contractor incurs the capital expenditure; and the PFI. In the absence of any quantification of these effects, these data are impossible to interpret. An additional problem arises from the concern that much expenditure which is in reality repair and backlog maintenance is now classified as capital expenditure because it comes out of a programme labelled as capital in PES. With this degree of non-comparability, it is a simple matter for ministers to explain away any change in capital expenditure. Concerned to counter criticisms that capital expenditure has suffered disproportionately, the Treasury has from time to time published special tables in the public expenditure summary documents, designed to put a more favourable gloss on trends in capital expenditure. Such ‘new’ series *may later disappear without explanation: data on public sector asset creation* were first published – under a different name – in 1988 and then abandoned in 1994.

Question 4: Is the cost of maintaining the capital stock intertemporally equitably shared?

Capital assets remain in use over considerable periods, raising the question as to how the cost is distributed over time:

If rates, taxes or charges are set too low either because accurate information on the real costs of capital maintenance is not available, or because political expediency ignores this information, then future generations will have to pay more than their fair share in order to restore the capital infrastructure of service provision. Of course, it can also work the other way: if depreciation is excessive and fully reflected in charges or rates, or if, for any other reason, charges and rates are high enough to permit self-financed capital investment in excess of current need, then current consumers will

be paying more than their fair share, to the benefit (presumably) of future generations (Perrin, 1984, p. 76).

These issues are complex to resolve, for a number of reasons. First, it may well be difficult to differentiate between infrastructure which will and which will not be valued by later generations: for example, the development of substitute services may render certain productive assets valueless. Second, while the present generation can vary the quantity and quality of assets and liabilities which it will pass on to future generations, the inheritors can have no say in the matter; intergenerational dialogue about equity is not feasible. Many of the same intractable issues which arise in the context of environmental assets also arise here. Moreover, fairness was defined in the above quotation as the absence of intertemporal redistribution, a proposition which could easily be challenged. In the context of reasonably steady economic growth, future generations will be richer than the present generation. Alternatively, they may be confronting environmental catastrophe, and facing economic collapse.

While even discussing the specification of an intergenerational social welfare function raises formidable difficulties, there is a strong ethical case for monitoring what is happening to both assets and liabilities. There could be biases in either direction. Political decision-makers are likely to be more sensitive to the interests of the existing generation (upon which they depend for votes) than to the interests of future generations, thereby creating an incentive to run down the capital stock and to run up liabilities. Alternatively, there is the possibility that, due to limited access to external finance, public bodies will resort to self-financing of investment to an excessive degree. Hills (1989) emphasized just how misleading a narrow focus upon the PSBR can be; inflation can significantly alter the real value of the public sector's assets and liabilities. At the time of zero or negative PSBRs, large reductions in the UK public sector's net worth can arise from the depletion of North Sea oil, growth of unfunded public sector pension liabilities and privatization discounts.¹² The information which is required in the public domain extends to data on private finance and quasi-government

12 Assets which are used to produce outputs whose price is regulated will be valued by the capital market in relation to the profits which can be earned from them by the privatized utility. National Audit Office (1992) set out an explanation of how the K factors had been determined for the water (and sewerage) companies: this involved treating assets as two groups (existing assets on which a real rate of return of 2 per cent would be allowed) and new assets (on which a real rate of return of 7 per cent is allowed, this being the estimated cost of capital). When price controls are redetermined, the regulator faces a dilemma in that this tiering of assets provides strong incentives to premature asset replacement whereas eliminating the tiering would lead to large price increases. In public debates at the time of utility privatization, ministers regularly denied the relevance of CCA values; the implications of low 'Market to Asset' ratios are discussed in Whittington (1994).

(Treasury and Civil Service Committee, 1994b). Jackson (1994, pp. 20–21) rejected the view that fiscal rectitude requires a zero PSBR: 'Some of the deficit reflects public expenditure on capital projects and it is right and proper to borrow in order to finance these.' Nevertheless, the balanced budget constitutional amendment, which narrowly failed to secure the necessary two-thirds majority in the US Senate in February 1995, would have required the US federal budget to balance in (largely) cash terms.

ACCOUNTABILITY FOR THE INFRASTRUCTURE

The infrastructure raises many issues of public policy, to which accounting information is potentially relevant. The landscape is rapidly changing, notably because of the increased delegation of infrastructure provision from government to the private or quasi-public sectors. The dilemmas identified by Likierman and Creasey (1985), concerning who could claim and then enforce entitlements to financial information about government, will be encountered in accentuated form. Writing about the water supply sector in France, Martin-Grenier (1994) observed that a lack of transparency has been a characteristic feature of concessions but one which is no longer acceptable, not least because of recent scandals in which corruption is alleged.

Mayston (1993b, p. 68) made the simple but telling point that 'accountability is not the only consideration we value'; there may be trade-offs between accountability and efficiency. Another 'objective' involving trade-offs will be equity, whether interpreted in its interpersonal, territorial or intergenerational senses. The pursuit of one objective may involve sacrifice of another. Accountability encounters the problem, highlighted by Chan and Rubin (1987), that citizens have incentives to be rationally ignorant about the financial reports of government. This situation means that, for accountability to be effective, a significant role must be played by intermediate users who act as information intermediaries (Mayston, 1992; Jones, 1992; Rutherford, 1992). Because it cannot be assumed that these are unbiased filters of information, it is important for pluralist debate to have a number of such information intermediaries. However, intermediate users are a fragile group, whose effectiveness can be enhanced or diminished by government as accounting regulator and accounts preparer. It is intriguing to watch how particular variants of public choice theory are used to justify public management reforms, whose architects then profess to be offended when the same theory is used to question their motives, notably about the various ways in which financial information has been rendered less accessible. When the issues are (perceived to be) complex, the often irresistible temptation for government to cloak data in favourable gloss and to shelter behind (manufactured) non-compar-

ability is highly destructive of accountability. Of particular contemporary concern is the accumulation of future burdens, notably in relation to the (implied) commitments which may be given to quasi-public and private providers. A crucial issue concerns the way in which regulatory instruments build in future increases in real charges. The tensions between the autonomy and accountability of utility regulators have become manifest, particularly when a significant part of the problem is the way in which the government had originally designed the market structure and regulatory system. The principal-agent relationships created by public management reforms are exceptionally complicated.

With regard to the public and quasi-public sectors, there is widespread agreement that there is scope for better decisions, both about management of the capital stock and about new investment. Therefore, there are genuine grounds for worrying about the level of capital expenditure, and about its quality. A particular concern arises when those responsible for the quality of public investment decisions are quick to attribute failure to secure value for money to the inherent deficiencies of the public sector, using managerial failures as evidence in support of various forms of privatization. Within the appraisal process, there is a difficult balance to strike, because, if the process becomes too technocratic, it is vulnerable to the kinds of satire levelled by Self (1975). Probably the most significant contribution from policy analysts is to establish certain modes of thought, which are themselves arguably as important as the numbers. Nash (1993) emphasized the limits of quantification, stemming both from the danger that the quantified drives out the non-quantified, and from the way in which quantification can be significantly affected by seemingly technical assumptions (e.g. the use of a national average value of time depresses returns from road projects in more affluent regions). The chapters on applications published in Williams and Giardini (1993) confirmed that optimization within a sector is on much safer ground than optimization across sectors. Heald (1994) demonstrated that the prior structuring of options fundamentally affects which projects pass the acceptability tests adopted for the PFI. While more high-powered incentives can be confidently expected to improve delivery of the chosen proxy, the difficult problem is to establish how the ultimate objective will fare. Effective design of the overall policy framework thus acquires vital importance, as otherwise unremunerated outputs will be neglected and substantial losses in consumer surplus may occur. Securing efficiency gains requires well-directed effort, including surveys of asset condition and *ex post* audits of projects. A serious obstacle to the implementation of such an approach is the confidence in simple truths which has been generated by the perceived success of privatization policies originating from conviction politics (Redwood, 1995), thereby changing questions (in which cases does private finance generate

efficiency gains greater than the increase in financing costs?) into assumptions.

Explicit controls over cash public expenditure will continue to have high priority. While Resource Accounting and Resource Budgeting may secure efficiency gains, cash will continue to be tightly controlled and evidence that capital maintenance is not being achieved will not necessarily release further resources. The future climate for public expenditure will be tough: paradoxically, any future government thought to be soft on public expenditure will have less discretion to tinker with definitions than one reputed to be tough. Opposition parties typically oppose almost every reduction in planned public expenditure levels, yet visibly shudder at the suggestion that rejection of such reductions would have cumulative implications for taxation.

This essay has directed attention to extensive policy innovations, considerable problems and many opportunities for further research in the tradition which John Perrin has encouraged both by his own work and by his stimulating and sympathetic editing of *Financial Accountability & Management*. Researchers contributing to that agenda should follow his admirable example in believing – notwithstanding some evidence to the contrary provided by an executive-dominated political system and a crisis-fixated media – that accounting researchers can help other social scientists to stimulate an intelligent debate about changing forms of governance. Quasi-markets, the accruals revolution in government and the spread of capital charging across government will certainly keep public sector accounting researchers busy for the rest of the century.

REFERENCES

- Accounting Standards Board (1993a), 'The Role of Valuation in Financial Reporting', Discussion Paper, London: Accounting Standards Board.
- Accounting Standards Board (1993b), 'Statement of Principles – Chapter 5: Measurement in Financial Statements', Discussion Draft, London: Accounting Standards Board.
- Arrow, K.J. and Lind, R.C. (1970), 'Uncertainty and the Evaluation of Public Investment Decisions', *American Economic Review*, 60, 364–78.
- Aschauer, D.A. (1989a), 'Is Public Expenditure Productive?', *Journal of Monetary Economics*, 23, 177–200.
- Aschauer, D.A. (1989b), 'Does Public Capital Crowd Out Private Capital?', *Journal of Monetary Economics*, 24, 171–88.
- Barclay, Sir Peter (chair) (1995), *Report of the Inquiry into Income and Wealth*, Vol. I. York: Joseph Rowntree Foundation.
- Battiatto, S.E. (1993), 'Cost-benefit Analysis and the Theory of Resource Allocation', in Williams, A. and Giardini, E. (eds) *Efficiency in the Public Sector: The Theory and Practice of Cost-Benefit Analysis*. Aldershot: Edward Elgar, pp. 26–42.
- Byatt, I.C.R. (chair) (1986), *Accounting for Economic Costs and Changing Prices: A Report to HM Treasury by an Advisory Group*, Vols I and II. London: HMSO.

- Chan, J.L. and Rubin, M.A. (1987), 'The Role of Information in a Democracy and in Government Operations: The Public Choice Methodology', *Research in Governmental and Non-Profit Accounting*, 3, 3–27.
- Davis, E. (1994), 'Using Resource Accounting to Improve the Effective Management of Resources', AIC Conference on Resource Accounting in Central Government, Hyde Park Hotel, 26–27 September, London, mimeo.
- Diamond, D. (1990), 'Infrastructure and Economic Development', in Jackson, P.M. and Terry, F. (eds), *Public Domain: The Public Services Yearbook 1990*, London: Public Finance Foundation, pp. 77–84.
- Dobeck, M.M. (1993), 'Privatization as a Political Priority: The British Experience', *Political Studies*, 41(1), 24–40.
- Dunleavy, P. and Hood, C. (1994), 'From Old Public Administration to New Public Management', *Public Money and Management*, 14(3), 9–16.
- Dunn, P. (1995), 'Drivers Dodge a Toll Too Far', *Observer*, 8 January.
- Dynes, M. and Walker, D. (1995), *The Times Guide to the New British State: The Government Machine in the 1990s*. London: Times Books.
- Edwards, J., Kay, J.A. and Mayer, C.P. (1987), *The Economic Analysis of Accounting Profitability*. Oxford: Clarendon Press.
- Ford, R. and Poret, P. (1991), *Infrastructure and Private-Sector Productivity*, Working Paper No. 91, Department of Economics and Statistics, OCDE/GD(91)3. Paris: OECD.
- Foreign Affairs Committee (1994), *Public Expenditure: The Pergau Hydro-Electric Project, Malaysia, the Aid and Trade Provision and Related Matters – Observations by the Government*, Cm 2672. London: HMSO.
- Gay, O. (1994), *Quangos and Non-Departmental Public Bodies*, Research paper 94/67. London, House of Commons Library.
- Glennerster, H. and Le Grand, J. (1994). 'The Development of Quasi-markets in Welfare Provision', Presented at Anglo-French Conference on 'Comparing Social Welfare Systems in Europe', Oxford, May.
- Heald, D.A. (1989a), 'Performance Measurements of Public Enterprises: Resolving Conceptual Issues', in Neumann, M. and Roskamp, K. (eds) *Public Finance and the Performance of Enterprises*. Detroit: Wayne State University Press, pp 307–24.
- Heald, D.A. (1989b), 'The Valuation of Power Stations by the Modern Equivalent Asset Method', *Fiscal Studies*, 10(2), 86–108.
- Heald, D.A. (1991), 'Accounting for the Severn Bridge', *Financial Accountability & Management*, 7(4), 267–307.
- Heald, D.A. (1994), 'Privately Financed Capital in Public Services', Paper presented at IFS/ESRC Local Governance programme seminar, 23 November, forthcoming.
- Heald, D.A. (1995), 'An Evaluation of French Concession Accounting', *European Accounting Review*, 4(2), 325–49.
- Heald, D.A. and Scott, D.A. (1994), 'Capital Charging in the NHS: A Survey of Implementation in Scotland', Paper presented to the ESRC Quasi-Markets Seminar, London School of Economics, 16 September 1994. (Revised as 'Assessing Capital Charging in the National Health Service', *Financial Accountability & Management*, 12(3), 225–44, 1996.)
- Heald, D.A. and Scott, D.A. (1995), 'Charging for Capital in the National Health Service in Scotland', *Financial Accountability & Management*, 11(1), 57–74.
- Hibberd, J., Taylor, I. and Weedon, R. (1992), 'Trends in Public Sector Capital Spending', *Treasury Bulletin*, 3(1), 55–77.
- Hills, J. (1989), 'Counting the Family Silver: The Public Sector's Balance Sheet 1957 to 1987', *Fiscal Studies*, 10(2), 66–85.

- Holme, C. (1995), 'Forth Bridge Rot Enquiry Urged', *Herald*, 9 March.
- Jackson, P.M. (1994), 'Managing the UK Economy Beyond the Quick Fix', in Jackson, P.M. and Lavender, M., *The Public Services Yearbook 1994*. London: Chapman & Hall, for the Public Finance Foundation, pp. 7-49.
- Jones, R. (1992), 'The Development of Conceptual Frameworks of Accounting for the Public Sector', *Financial Accountability & Management*, 8(4), 249-64.
- Laffont, J.-J. and Tirole, J. (1994), 'Access Pricing and Competition', *European Economic Review*, 38(9), 1673-710.
- Lapsley, I. (1986), 'Investment Appraisal in UK Non-trading Organisations', *Financial Accountability & Management*, 2(2), 135-51.
- Likierman, A. and Creasey, P. (1985), 'Objectives and Entitlements to Rights in Government Financial Information', *Financial Accountability & Management*, 1(1), 33-50.
- Lind, R.C. (1982), 'A Primer on the Major Issues Relating to the Discount Rate for Evaluating National Energy Options', in Lind, R.C. (ed.) *Discounting for Time and Risk in Energy Policy*. Washington, DC: Resources for the Future, pp. 21-94.
- London Boroughs' Association (1995), *Watch this Space!* London: London Boroughs' Association.
- Martin-Grenier, P. (1994), 'Eau potable: de l'opacité à la transparence', *Le Monde*, 22 November.
- Mather, G. (1994), 'The Market, Accountability and the Civil Service', Frank Stacey Memorial Lecture to the Public Administration Committee conference, University of York, 5 September.
- Mautz, R.K. (1981), 'Financial Reporting: Should Government Emulate Business?' *Journal of Accountancy*, August, 53-60.
- Mautz, R.K. (1988), 'Monuments, Mistakes and Opportunities', *Accounting Horizons*, 2(2), 123-8.
- Mayston, D. (1990), 'Managing Capital Resources in the NHS', in Culyer, A.J., Maynard, A. and Posnett, J. (eds) *Competition in Health Care: Reforming the NHS*. Basingstoke: Macmillan, pp. 138-77.
- Mayston, D. (1992), 'Capital Accounting, User Needs and the Foundations of a Conceptual Framework for Public Sector Financial Reporting', *Financial Accountability & Management*, 8(4), 227-48.
- Mayston, D. (1993a), 'Public and Private Sector Project Appraisal: A Comparative Evaluation', in Williams, A. and Giardini E. (eds) *Efficiency in the Public Sector: The Theory and Practice of Cost-Benefit Analysis*. Aldershot: Edward Elgar, pp. 3-25.
- Mayston, D. (1993b), 'Principals, Agents and the Economics of Accountability in the New Public Sector', *Accounting, Auditing & Accountability Journal*, 6(3), 68-96.
- Mayston, D. and Muraro, G. (1993), 'Project Finance and Decentralization in Public Investment', in Williams, A. and Giardini, E. (eds) *Efficiency in the Public Sector: The Theory and Practice of Cost-Benefit Analysis*. Aldershot: Edward Elgar, 129-45.
- Munnell, A. (1992), 'Infrastructure Investment and Economic Growth', *Journal of Economic Perspectives*, 6(4), 189-98.
- Muraro, G. and Pola, G. (1990), 'Planning Public Investment in a Multi-government Setting', in Krause-Junk, G. (ed.) *Public Finance and Steady Economic Growth*. The Hague: Foundation Journal Public Finance, pp. 250-76.
- Nash, C.A. (1993), 'Cost-benefit Analysis of Transport Projects', in Williams, A. and Giardini, E. (eds) *Efficiency in the Public Sector: The Theory and Practice of Cost-Benefit Analysis*. Aldershot: Edward Elgar, pp. 83-105.
- National Audit Office (1991), *The Repair and Maintenance of School Buildings*, HC 648 of Session 1990-91. London: HMSO.

- National Audit Office (1992), *Department of the Environment: Sale of the Water Authorities in England and Wales*, HC 256 of Session 1981–82. London: HMSO.
- National Heritage Committee (1994), *The British Library*, Fifth Report of 1993–94, HC 550. London: HMSO.
- O'Donnell, A.T. and Rhodes, T.E. (1983), *Risk, Uncertainty and Public Sector Investment Appraisal*, Government Economic Service Working Paper No. 63. London: Treasury.
- OECD (1993), *Managing with Market-type Mechanisms*. Paris: OECD.
- OECD (1994), *New Ways of Managing Infrastructure Provision*. Paris: OECD.
- Pallot, J. (1990), 'The Nature of Public Assets: A Response to Mautz', *Accounting Horizons*, 4(2), 79–85.
- Palmer, A. (1995), 'Quangos to the Left, Quangos to the Right', *The Times*, 12 January.
- Parr, J.B. (1993), 'The Metropolitan Area in its Wider Setting', in Summers, A.A., Cheshire, P.C. and Senn, L. (eds) *Urban Change in the United States and Western Europe: Comparative Analysis and Policy*. Washington, DC: Urban Institute Press, pp. 217–24.
- Pendlebury, M., Jones, R. and Karbhari, Y. (1994), 'Developments in the Accountability and Financial Reporting Practices of Executive Agencies', *Financial Accountability & Management*, 11(1), 33–46.
- Perrin, J. (1984), 'Accounting for Public Sector Assets', in Hopwood, A. and Tomkins, C. (eds) *Issues in Public Sector Accounting*. Oxford: Philip Allan, pp. 61–84.
- Public Accounts Committee (1994), *The Proper Conduct of Public Business*, Eighth Report of Session 1993–94, HC 154. London: HMSO.
- Redwood, J. (1995), 'The Flame that Will Not Die: Margaret Thatcher Released Some Angels from the Marble – There are More to be Hewn from the Stone', *The Guardian*, 16 January.
- Rees, R. (1987), 'Bridge Tolls in Theory and Practice', *Economic Review*, 4(3), 2–6.
- Rhodes, R.A.W. (1994), 'The Hollowing out of the State: The Changing Nature of the Public Services in Britain', *Political Quarterly*, 65(2), 138–51.
- Ritchie, A. and Lawton, D. (1993), *The Public Sector Borrowing Requirement – Definition and Measurement*, Government Economic Service Working Paper No. 119. London: Treasury.
- Rutherford, B.A. (1983), *Financial Reporting in the Public Sector*. London: Butterworths.
- Rutherford, B.A. (1992), 'Developing a Conceptual Framework for Central Government Financial Reporting: Intermediate Users and Indirect Control', *Financial Accountability & Management*, 8(4), 265–80.
- Scottish Office Finance Group (1994), 'Private Finance Initiative: Scottish Projects', September, Edinburgh, mimeo.
- Self, P. (1975), *Econocrats and the Policy Process: The Politics and Philosophy of Cost-Benefit Analysis*. London: Macmillan.
- Spackman, M. (1991), *Discount Rates and Rates of Return in the Public Sector: Economic Issues*, Government Economic Service Working Paper No. 113. London: Treasury.
- Sudjic, D. (1995), 'Running Down the Capital', *The Guardian*, 3 March.
- Treasury (1990), *Working Group on Capital Assets Information Systems Report*. London: Treasury.
- Treasury (1991), *Economic Appraisal in Central Government: A Technical Guide for Government Departments*. London: Treasury.
- Treasury (1992), *Accounting for Capital Assets: A Working Draft of Guidance*. London: Treasury.

ACCOUNTING AND ACCOUNTABILITY FOR INFRASTRUCTURE

- Treasury (1993), *The Private Finance Initiative: Breaking New Ground – Towards a New Partnership Between the Public and Private Sectors*. London: Treasury.
- Treasury (1994a), *Better Accounting for the Taxpayer's Money: Resource Accounting and Budgeting in Government*, Cm 2626. London: HMSO.
- Treasury (1994b), *Improving the Treasury: Initial Decisions on the Fundamental Review of Running Costs*. London: Treasury.
- Treasury (1995), *Public Expenditure: Statistical Supplement to the Financial Statement and Budget Report, 1995–96*, Cm 2821. London: HMSO.
- Treasury and Civil Service Committee (1994a), *The November 1993 Budget*, Second Report, Session 1993–94, HC 87. London: HMSO.
- Treasury and Civil Service Committee (1994b), *The Form of the Estimates*, Third Report, Session 1993–94, HC 192. London: HMSO.
- Tweedie, Sir David (1994), Oral presentation of 'Regulating change – the role of the conceptual statement in standard setting', 75th Anniversary Conference of the Department of Accounting and Business Method, University of Edinburgh, 12 September, mimeo.
- Tweedie, D.P. and Whittington, G. (1985), *Capital Maintenance Concepts: The Choice*. London: Accounting Standards Committee.
- Verbeke, A. (1988), 'The Managerial Analysis of Public Infrastructure Investment', in van den Broeck, J. (ed.) *Public Choice*. Dordrecht: Kluwer, pp. 105–44.
- Ward, T.S. (1994), 'The 1993 Budget and Public Expenditure Cuts', in Treasury and Civil Service Committee, *The November 1993 Budget*, Second Report of Session 1993–94, HC 87. London: HMSO, Appendix, pp. 103–5.
- Whittington, G. (1988), 'The Byatt Report: A Review Essay', *British Accounting Review*, 20(1), 77–87.
- Whittington, G. (1994), 'Current Cost Accounting: Its Role in Regulated Utilities', *Fiscal Studies*, 15(4), 88–101.
- Wilcox, S. with Bramley, G., Ferguson A., Perry, J. and Woods, C. (1993), *Local Housing Companies: New Opportunities for Council Housing*. York: Joseph Rowntree Foundation.
- Williams, A. and Giardini, E. (eds) (1993), *Efficiency in the Public Sector: The Theory and Practice of Cost-Benefit Analysis*. Aldershot: Edward Elgar.
- Wintour, P. (1995), 'Nolan Witnesses Stress Need for Independent Scrutiny of MPs' Conduct', *The Guardian*, 18 January.