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Urban Infrastructure Finance Issues in Australia: *A Review in the Context of International Experience*

David Wilmoth

Abstract: Whether one sees a crisis in urban infrastructure finance depends more on theoretical perspective than empirical evidence. Urban infrastructure issues in Australia differ in emphasis from those in North America and Asia but the finance options are basically the same. Reform in Australia is best directed at state capital budgeting, a national infrastructure fund, clearer accountabilities for provision, user fees reflecting real cuts and experimentation with joint public-private provision.

Key words: Urban management, capital finance, infrastructure co-ordination

Introduction

Urban infrastructure financing has become a major issue in Australia and remains near the top of the chart for cities around the world. This paper attempts to provide a context for discussion of the problem of financing urban infrastructure in Australia. It discusses some of the urban infrastructure issues of other countries, indicates what forces have brought the issue to its prominence in Australia, and comments on future directions for policy and practice.

Infrastructure was first used by the French to mean what literally underlay fixed installations, but has come to mean long-lasting fixed physical public capital (Prud'homme 1987) and to replace such terms as social overhead capital

(Hirschman 1958). Some forms of infrastructure are provided publicly in some states, privately in others (e.g. gas and power), and with continued privatisation in its various forms the boundaries are becoming harder to define. The definition excludes recurrently-funded services, even though some of the key problems of infrastructure provision arise from mismatches between recurrent and capital financing, and it excludes housing essentially because of its scale and its private consumption.

Urban infrastructure excludes such items as inter-urban roads and, for convenience, small settlements such as those that are in state-wide works programs or that were (and in some states still are) the focus of infrastructure policies for major resource development projects (see, e.g., ACIR 1982). Some analysts make a distinction between network infrastructure and infrastructure at a point, but as they are integrated - e.g. telephone cables and exchanges - neither is excluded here. Thus urban infrastructure includes roads, railways and tramways, water supply systems, sewerage, drainage, power supply, energy distribution, telecommunications networks, gas supply, airports, ports, ferry terminals, waste disposal facilities, schools, universities, hospitals and other public and community facilities. Reflecting Australia's conditions, the emphasis in this paper is on infrastructure for urban expansion rather than urban development, and for new infrastructure rather than replacement or refurbishment.

Whether one sees a crisis in financing urban infrastructure, or merely some major problems, or a self-adjusting system, depends on what theoretical perspective one takes. Neoclassical analysts argue that, though there are market imperfections and a consequential need for regulation and reform from time to time, the supply of urban infrastructure can be determined by the market and by a transparent system of allocating public goods. Thus the problems of financing urban infrastructure can be addressed through a strategy of leaving markets alone (including financial markets) rejecting the concept of merit goods (i.e. goods socially deemed to be desirable irrespective of whether, technically, they are beneficiary or public goods), displacing public allocation of beneficiary goods (i.e. goods whose benefits are rival in their consumption) to private sector allocation where it is by definition more efficient and, for public goods, emulating a private market within the public sector as far as possible through shadow pricing and efficient resource allocation (Musgrave and Musgrave 1973). For publicly provided goods, as far as possible, user-charging and debt-financing at market rates over the useful life of the asset are preferred (see e.g. Hanke 1988 : 129-139).

Marxist analysts stand on very different ground, tending to see the problems of financing urban infrastructure as part of a larger fiscal crisis of the state in which inherent tendencies towards economic crisis are expressed through the socialisation of costs and private appropriation of profits and magnified by inter-jurisdictional disparities between local demands for urban services and sub-national governments' abilities to pay for these services (see O'Connor 1973). Infrastructure is needed for capital accumulation (e.g. ports), for reproduction of labour (e.g. infrastructure for housing) and to maintain the legitimacy of the state (e.g. for the delivery of welfare services). What is for capital accumulation and what is for social legitimacy are not always clear - e.g. public transport systems have generally been defended in Australia, at least until recent feminist critiques of its gender bias, as supportive of social reproduction, but metropolitan transit systems in the USA have long been seen as devices to extend the reach of a CBD-centred form of capital accumulation. Either way, the hegemony of the capitalist state is preserved, though its inherent tendencies towards fiscal crisis are heightened. Evidence of urban infrastructure shortfalls - be they for production or reproduction - all too easily confirm the theoretical standpoint. At worst, such reasoning can be tautological; at best, theories of crisis can explain long-term trends and cycles in urban development (see e.g. Tabb and Sawers 1978).

A third standpoint is one that recognises that we can indeed face a crisis in financing urban infrastructure, but one that can be resolved by institutional and financial means without

threatening the economy or the legitimacy of the state, even if particular contradictions are indeed displaced from one part of the political economy to another. Such a position would reject neoclassical economic equilibrium as a model for providing urban infrastructure and would argue that, since social needs are culturally and politically determined, since urban development is by its nature spatially monopolistic and inflexible, and since organisations and elites are more useful analytical entities than atomised individuals or abstract social classes, their satisfaction should be organised through institutional means that can be effective without being Pareto-optimal (see e.g. Alford 1975).

Crisis or not, the problems of financing urban infrastructure have assumed a prominent place among Australian political issues. Urban development issues are back on the agenda, with recent government electoral defeats in the suburbs, concerns about the urban impacts of immigration and public finance crises in at least one state. The rise of urban issue groups and the environmental movement have brought demands for higher service standards to many areas (e.g. water and air quality, safety from hazards) at the very time when, in Sydney and perhaps Melbourne at least, metropolitan planning strategies have been forced into areas with high costs and environmental risks. Worse, capital construction in Australia has dropped sharply - 5.6 percent of GDP and falling - simultaneous with a general economic downturn, as eloquently if self-interestedly shown by the Australian Federation of Construction Contractors (AFCC 1989).

Industry calls for countercyclical public spending on urban infrastructure, such as that by the AFCC for another \$7 billion a year to mitigate the private sector construction downturn, have a long pedigree, but the breadth of concern among other groups can be seen in the membership of the new National Infrastructure Committee, which includes housing and welfare groups.

Debates about financing urban infrastructure in other countries have not made a large impact on Australian thinking. The debate in Australia has focused on suburban expansion and housing provision rather than industrial and commercial infrastructure. That the housing crisis - or whatever one calls the growing proportion of households unable to purchase housing in the large capital cities - is a product of high interest rates and rationalisation of public housing expenditure was largely ignored by the federal government when it sought through its 1989 Special Premiers' Conference a concentration on planning regulations and land supply for housing, matters for which state and local governments have responsibility. Some economic policy makers believe that massive spending on urban infrastructure for housing is incompatible with the development in Australia of a

productive, export-based culture. Without realising the contribution that efficient cities can make to national productivity, or environmentally planned cities to our long-term survival, there is a prevailing view among economic rationalists that Australia is over-housed, over-serviced and over-indulged by pleasant suburban lifestyles and excessively high environmental standards. Could this be a view from the comfort of Canberra?

International Experience

Urban infrastructure issues vary according to level of economic development, overall political system and role of the state, extent of planning and co-ordination, relative scope of the public and private sectors, pattern of urbanisation and age of cities, intergovernmental distribution of powers and many other factors. The enormous body of experience has not been comprehensively reviewed (but see OECD 1987), and the review of experience in North America and Asia cannot do justice to the subject.

North America

Urban infrastructure financing in North America has for over a decade been dominated by efforts to address a deteriorating, undermaintained, obsolete stock of urban infrastructure (see Peterson 1971-81, Choate and Walker 1981, Patton 1984). Unlike Australian usage, 'urban' is more likely to be defined as inner urban and not suburban jurisdictions. During the 1980s, more than a dozen national studies examined infrastructure needs with estimates of annual capital investment requirements ranging from US \$52 billion to \$118 billion for transport, water supply, sewerage and drainage alone (USA 1988 : 38). Estimates of the US backlog of repairs and maintenance made in the 1980s were indeed alarming. These backlogs and shortfalls are by no means confined to the 'rustbelt', the older cities of the northeast and midwest, but include inadequate systems built for, and gaps left in, the newer cities in the sunbelt. With a wider recognition that many of the shortfalls are a result of artificially low rates and user charges, and with better methods of comparing standards, financial data, growth forecasts and inventories of capital stock, it now appears as if some of those concerns were exaggerated (Kaplan 1984). Attention to the issues by federal, state and local governments has helped reduce some of the funding problems. For example, there has been a marked increase in funding trends for urban roads, with improvements to relative capacities and overall pavement conditions (Pisarsky 1987). Nevertheless, serious problems remain, with recent calls to double annual public capital spending (e.g. USA 1988 : 2). Deteriorating urban infrastructure has been an issue in

Canada too, with one estimate of the infrastructure deficiency being Ca \$16 billion over four years (Sonnen 1987 : 88). However, better initial urban planning and programming, stronger metropolitan-wide governance, and higher levels of maintenance have avoided generally problems of the scale of most US cities.

The problems of financing infrastructure for new urban expansion have caused less concern in the USA than in Australia because US cities tend to be older and more prone to obsolescence - notwithstanding some disturbing evidence to the contrary (see Australia 1987) - and because the process of suburban expansion is more privatised and less the focus of public policy than in Australia. Financing systems for new urban infrastructure in North America are complex, but some common elements are different from Australia. First, general purpose local governments have much wider powers than in Australia, with greater protection in state constitutions. Thus financing systems for education, public housing, police, fire protection and other services are local matters, with much wider geographical disparities, in contrast with state responsibility in Australia. Often funds for infrastructure are raised by special assessments - hypothecated, in another word - and this has become a means of avoiding constitutional or legislative limitations on general revenue raising (Kirwan 1989 : 290). Many suburban local governments have been the creation of private developers, starting as private corporations and only later becoming general-purpose local governments incorporation or annexation. Private infrastructure financial arrangements are thus taken over as on-going public utilities, sometimes with inadequate physical integration across jurisdictions.

County governments that include many cities and towns may be responsible for a range of urban services, but for network infrastructure such as water supply and sewerage or human services such as schools and health, special-purpose governments are often formed - over 28,000 of them (USA 1988 : 64) - with area coverage and rate bases that overlap with general-purpose local governments. Unlike, say, Australian water boards or county councils, special districts typically do not cover metropolitan regions. This makes metropolitan infrastructure co-ordination very difficult but does enable clear financing arrangements and direct political accountability for particular services.

Private provision of infrastructure, on the other hand, is very widespread, either as part of planned urban development or as an outcome of privatisation, and the private sector dominates the supply of electricity, gas and telephone services. Efforts to co-ordinate complex patterns of jurisdiction and to restrain new local agency formation have not been highly successful. Partly as a result, there are few successful

examples of efforts to link land development with infrastructure co-ordination. Metropolitan-wide but voluntary Councils of government have been required to 'sign off' on metropolitan-scale infrastructure projects that bid for federal funds so as to encourage compliance with metropolitan plans, but this nexus has not resulted in strong linkages between infrastructure programs and metropolitan general plans (which also tend to be broken into discrete 'elements') (see Patton *et al* 1976).

Infrastructure borrowing by state and local governments is not constrained by superimposed limits like the Loan Council in Australia, but by local voting requirements for raising tax-exempt bonds. With growing concerns for levels of taxation and the size of US public sector debt, infrastructure borrowing has been caught up in a patchwork of new general limits on public finance, but there are now moves to relax these limits for urban infrastructure and to reduce the intergovernmental complexity of capital transfer programs. Municipal bond and other finance markets for urban infrastructure are exposed to wide fluctuations and to the vagaries of the big banks, with occasional fiscal crises bringing in virtual municipal receiverships by financial institutions (e.g. New York and Cleveland during the 1970s - see USA 1973, Aulleta 1980, Alcalá and Mermelstein 1977 and Tabb and Sawers 1978). There is a continuing debate about the establishment of a national urban development bank with an urban infrastructure window for interest rate subsidies and guarantees (see Haar and Lewis 1970, Rohatyn 1981) and about other national infrastructure finance initiatives.

Asia

Likewise, the urban infrastructure financing problems of Asia defy accurate generalisation. They range from a desperate scramble to cope with the massive poverty and environmental breakdown of huge primate cities, through the expensive efforts to upgrade living standards and replace infrastructure in newly-prosperous cities, to centrally financed infrastructure for regional growth poles and new cities. The four newly industrialised countries - Korea, Taiwan, Hong Kong and Singapore - have financed very rapid development of new towns, assisted by huge pools of savings. But as democratic processes take hold, for example in South Korea, the methods of financing increasingly turn to municipal and provincial sources and to a development process improved, if slowed down, by public consultation (Hwang 1988). The land adjustment process, so important to urban expansion in such cities as Tokyo and Seoul, is tied into the infrastructure financing process.

In many Asian countries an over-reliance on central loan funds and intergovernmental transfers have led to a search for more locally-reliant funding mechanisms. For example, the World Bank is supporting Indonesian efforts to develop municipal finance institutions for infrastructure development so as to lessen conventional reliance on central and international financial resources. One benefit of international aid is a relatively sophisticated understanding of metropolitan infrastructure needs, basic as these might be, through multi-sector pre-loan studies such as for Shanghai, Liaoning and Tianjin in China, and through real urban infrastructure co-ordination exercises such as Jakarta's Integrated Urban Infrastructure Development Program (Zaris *et al* 1988). But as international development assistance tends to focus on user-funded infrastructure projects, it is in danger of neglecting the finance of true public goods for the very poor. In the poorest cities in Asia, appropriate financing arrangements are as necessary as appropriate technologies, as demonstrated by urban infrastructure financing arrangements for Colombo that increasingly stress the savings from local downstream maintenance on capital projects and the role of local authorities in this (Cotton and Franceys 1988). Where housing development agencies greatly underprice residential land, such as in Karachi, their access to local finance for infrastructure is extremely limited (Dowall 1989).

Some of the best-documented arrangements for urban infrastructure financing are in Japan, where massive efforts to modernise urban living standards and overcome backlogs from previously unserved urban developments are under way. Local government accounts for a large share of government expenditure - in 1981 63 percent (compared with 6.5 percent in Australia) - and a major pattern of borrowing through bonds and debentures controlled by central government (OECD 1986: 84-85). Special measures such as a city planning tax and a business establishments tax are also used by local governments for infrastructure funding. Private funding for local urban infrastructure is also raised through the use of a profits tax, a form of betterment levy for sewerage, public land banking and the less restricted use of public development corporations (OECD 1986: 86). A key central source of finance for infrastructure is the well-known fiscal investment and loan program, a huge government-consolidated pool of savings made available for national purposes.

But it is a paradox that, despite being capital-rich, Japan's investment in urban infrastructure has fallen well below any measure of national affordability, with infrastructure spending declining sharply during the 1980s as a share of GDP. Indeed, increasing spending on urban infrastructure by a

massive amount during the 1990s has become a key negotiation objective for the Structural Impediments Initiative with USA (Ries 1990). The huge loss of capitalisation in Japanese financial markets occasioned by the Middle East crisis may reduce Japan's urge to invest, but it is still no exaggeration to say that the improvement of Japan's urban infrastructure has, through the stimulation of domestic demand, international economic implications.

Australia

Even within Australia, demand and supply conditions for urban development and institutional and financial arrangements for urban infrastructure vary widely. Problems are often specific to urban regions (e.g. Sydney, where land supply is extremely constrained) or to particular systems (e.g. sewerage in Perth, where 40 per cent of households are not sewered and water supply is from local aquifers), rather than generally prevalent. It is useful to review Australian urban infrastructure problems broadly according to Kirwan's (1989) classification of the means by which governments have sought to maintain adequate investment in urban infrastructure: managing demand, improving supply, raising public revenue, seeking private capital contributions and direct private sector participation.

Managing Demand

The task of managing demand for urban infrastructure by means other than pricing is difficult. Underlying demand for urban infrastructure for the metropolitan regions has been historically high, at least for housing, over the past decade. Among contributing factors have been high migration, smaller household sizes, high service standards, attempts to address backlogs and growing concerns for the replacement and repair of ageing infrastructure. Australia's recent immigration levels have been higher than the historical trend, affecting Sydney and Melbourne particularly, though indirect demand on new housing appears to be lagged two years (Neilson 1982), and immigration's harmful effect on urban areas exaggerated (Wilmoth 1988). Internal migration by retirees and job searchers has eased underlying demand in Sydney and Melbourne and put infrastructure pressures on destination regions such as southeastern Queensland, New South Wales North Coast and Perth. Demographic pressures on housing demand can be expected to abate during the 1990s if, as seems likely, the size of the immigration program is scaled back, as recent changes in migrant composition take longer to affect housing demand, as rates of natural increase remain low, and as median household size bottoms out for economic reasons and perhaps even rises. Effective demand for housing-related infrastructure has been held back over recent

years by high interest rates and general economic uncertainty. The current recession may relieve interest rate pressures but will keep strong affordability limits on housing demand. On balance, housing demand can be expected to abate as underlying demand weakens and economic conditions fail to improve at a commensurate rate.

The demand outlook for non-residential development, though varying regionally, is also weak, with public sector capital programs cut back substantially, falling private demand and oversupply in the office, hotel, industrial development and other sectors. Some growth in engineering construction will be overshadowed by a huge drop in non-residential building (AFCC 1989).

Rising environmental standards are contributing substantially to demand for infrastructure funding, as indicated by acceleration of sewerage works in Sydney funded through hypothecated environmental levies. Such pressures can be expected to increase as urban environmental quality is recognised more widely as a regional competitive advantage as well as for its own sake. Other infrastructure standards may fall, especially where this is sought by the development industry and targeted by government policy (e.g. residential lot size, road pavement thickness, road width, parking requirements). Urban consolidation policies, district centres policy and other urban strategies have been responses to the shortage of infrastructure funding [Alexander 1990] but have still failed to address the accumulating problem of urban infrastructure backlogs. Governments facing huge deficits in some services, especially public transport, are loath to extend service areas to new suburbs. Urban co-ordination systems have addressed large-scale priority issues for urban infrastructure with some success but have not made a substantial difference to local service quality or historical backlogs. For reasons of capital funding constraints state governments have knowingly adopted urban development programs well below levels recommended through the co-ordination systems. The rates at which previous backlogs of infrastructure provision (e.g. sewerage connections in Perth or community facilities in Sydney pre-section 94 - a clause that makes developer contributions on exactions legal, and the replacement and refurbishment of older capital stock,) will result in higher demands for urban infrastructure depend on political interpretations of the problems. For example, interest in inter-urban road infrastructure has been greatly raised by recent road disasters, and in inter-urban rail systems by the recent prime ministerial mission to define a new federal distribution of powers. The equivalent political demands for urban infrastructure are perhaps not as clearly expressed, but as city form and density are shaped to minimise new infrastructure, particularly to raise residential densities above present unsustainable levels, urban planners find themselves at the forefront of infrastructure demand management.

Improving Supply

Much of the focus on the urban infrastructure debate has been on improving the efficiency of provision. Supply authorities seem to be undergoing constant review and reorganisation to improve their management of infrastructure provision, with attention to asset management, project appraisal, strategic planning, performance planning and work practices, but with too little attention to inter-agency and intergovernmental co-ordination. The potential for improvements in productivity through technological change is enormous, but is constrained by institutional commitments to current systems and by high capital start-up costs. Evidence on the productivity of public sector organisations is mixed, with general government agencies being weaker than public enterprises. The productivity of Australia's utilities, by labour or capital measure, is less than half the weighted average productivity of fourteen developed countries [Shann 1990]. Current federal government pressures to accelerate micro-economic reform - a popular term in Australia for institutional change targeted to particular industries - are being transferred onto state agencies and regulatory systems as severe limits on borrowings and federal government cuts in transfer payments take hold, but progress has been slow so far. One 1988-89 estimate by the Industries Assistance Commission of contributions to productivity improvements was 2.5 percent from federal government activities and 2.2 percent from the states, the latter being bulk commodity handling, rail transport, road transport and electricity supply (Shann 1990).

The issue of whether too little infrastructure is provided in Australia (see AFCC 1989, and, more moderately, Australia 1987), or too much, rests more on questions of political preferences standards, disputed capital project evaluation criteria and other factors than on the technical difficulties of measuring the quanta of infrastructure provision. The supply of urban infrastructure to Australian cities is certainly misallocated with respect to mix of services (human services generally lagging network services), location (inter-urban and intra-urban), timing (medium-term staging, long-term and intergenerational impact), levels of government provision, and relationship to recurrent service programs. Many key service providers face huge investment thresholds. One cannot blame urban managers for successfully deferring decisions for large investments by careful capital programming, but the deadlines for separate major threshold decisions are now coming together when the cost of capital is very high and the constraints on government finance extremely tight. Where residential land supply has not been well planned, a pattern of undersupply (often large-lot, upper income) and oversupply (often low-priced small lots) criss-crosses metropolitan areas, with servicing authorities reluctant to invest to meet submarket demand while other

submarkets are oversupplied with land and infrastructure. The costs of major misfits in infrastructure provision to the Australian economy - let alone the immediate quality of local peoples' lives - could be very high, higher than the proponents of uneven economic growth could justify (Hirshmann 1958).

Raising Public Revenue

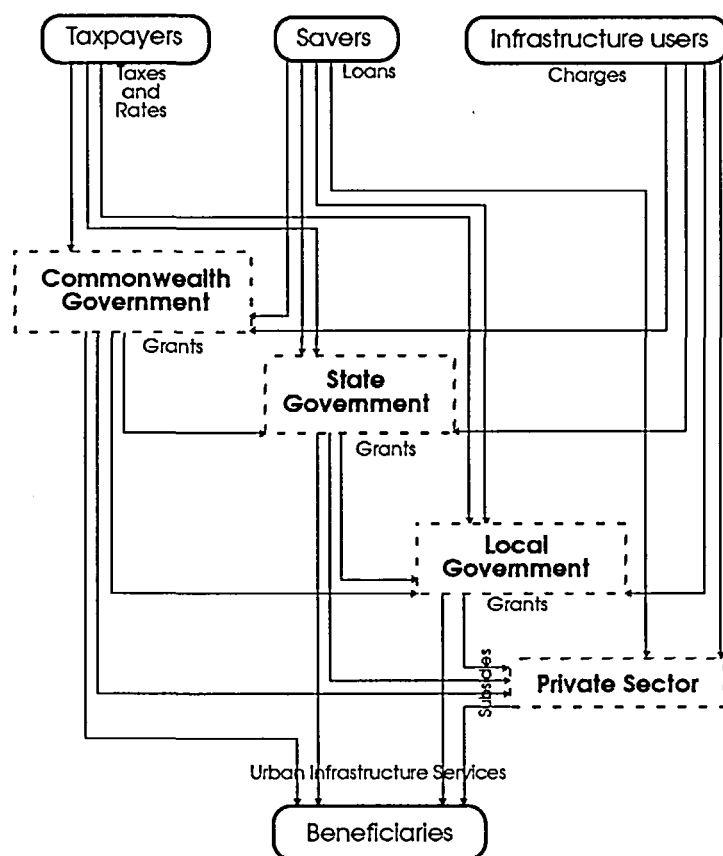
There are only a few ways in which finance for urban infrastructure can be raised, for example through charges, taxes, transfers, loans or profits (see Prud'homme 1987). It is not the purpose of this paper to discuss the merits of each. A highly generalised illustration of flows of finance is shown in Figure 1. The present constraints on finance for urban infrastructure in Australia are severe even by international standards. During the 1980s the anticipated resources and energy development projects diverted capital finance from urban infrastructure, and national urban policy waned after the initiatives of the 1970s. The federal government relaxed global limits on state borrowing and this encouraged the states to expand their borrowing even as the Commonwealth closed many of the loopholes used by the states to evade Loan Council limits. In turn, local governments were hemmed in by state limits on local rate-raising, constraints on business activities and inadequate recognition of growth forecasts in grant allocations. High foreign-sourced investment in commercial property development has not helped overcome infrastructure backlogs either, even if directly consequential infrastructure has been funded through developer contributions. Efforts to create a social dividend from urban development - e.g. by funding public housing from levies on private office development, or by placing betterment levies on land value increments - have generally failed.

Economic conditions and economic policy have contributed greatly to current shortfalls in urban infrastructure. Public capital formation as a proportion of GDP has generally been declining since the mid 1970s and particularly since 1981, while private capital formation's share has risen (Australia 1987). The productivity of this investment, measured as real gross product per person employed, has been rising only very slowly, a little over one percent compared with Japan's eight percent (Australia 1987 : 55).

It is indicative that the 1990-91 federal budget results in a zero net public sector borrowing requirement. Public sector investment is a victim of fierce demand constraint, with the high activity states, Victoria and South Australia, hit harder than Queensland and NSW (see Shann 1990). Victoria has dedicated the returns from all its asset sales to the reduction of its huge existing debt, rather than channeling the finance

to new assets. Very high interest rates (e.g. prime lending rates over 17 percent) have raised the real costs of capital, deferred investment and shortened infrastructure planning horizons and work programs.

Figure 1
Urban Infrastructure Finance Flows
(Adapted from Prud'homme 1987:1181)



A worrying and increasing share of state recurrent funding is dedicated to debt servicing. Federal government arrangements, as shown by the Langmore parliamentary committee, leave public investment as a residual after recurrent budget commitments are met. Indeed, there is no capital budget as such. Commonwealth accounting for capital expenditure, begun in the 1940s, was set up deliberately to disguise recurrent budget surpluses. The resulting apparent deficit has long misled overseas capital markets (Australia 1987). Loan Council borrowing limits - those placed jointly by federal and state governments to co-ordinate public sector borrowing - have relaxed somewhat but do not fully exclude commercial public-sector investment

despite Australia having the second lowest public debt/GNP ratio of OECD countries.

With deregulation the private overseas debt has ballooned, but even on that issue there is an open debate about how serious a problem this is (see e.g. Pitchford 1990). Though the Loan Council deals with long-term capital projects, it is not a capital planning group but a means of setting limits on loan-raising over the year ahead. That is one reason why state and local government have sought creative ways to get around inclusion in borrowing requirements and why the 1990 Premiers' conference was conducted in more of an atmosphere of crisis than usual. The Langmore committee recommended that 'the Loan Council should attempt at least some broad measure of priority-setting and co-ordination of major public investment proposals' (Australia 1987: 154). It should do more than this and become the focus of national infrastructure planning. A national urban infrastructure fund should be developed, perhaps through contributions from superannuation and other funds and through the proceeds from sale of public assets.

The use of grants for financing urban infrastructure has declined relatively and is likely to continue to do so. The high degree of intergovernmentalisation of urban infrastructure financing - within the roads, education, health and housing sectors particularly - separates revenue and expenditure responsibilities and diffuses political and managerial responsibility. The Prime Minister's 'new federalism' is to be welcomed if it reduces fiscal imbalance, by which states have spending responsibilities much greater than their revenue-raising capacity.

Local government's reliance on intergovernmental grants has increased too, as new functions such as housing and environmental protection are supported and as state and federal governments seek to address the narrow rate base of local government and pursue policies of horizontal equalisation or regional equity (Australia 1985). There are still gaps in agreed responsibility for infrastructure provision between state and local government - e.g. distributor roads and district community facilities in New South Wales. State recurrent budgets are channelled into infrastructure projects when debt finance might be more appropriate as it can be repaid over the useful life of the assets. Commonwealth payments to the states have been reduced to constrain state and local spending and to induce microeconomic reform.

Urban infrastructure spending has become the victim of an effort to flatten out the recent boom in private investment (a somewhat over-successful effort, as business investment is 16 percent down on 1989) which was sucking in imports from overseas, despite urban infrastructure having a much

lower import component than private capital investment. Cutbacks to urban infrastructure are seen by economic policy makers as unfortunate side effects of macroeconomic policy, or as a means of demonstrating that Australian people have been too well housed and serviced. The Commonwealth has long ceased to have an urban and regional budget and has retreated from funding some sectors such as urban sewerage. It finances its own direct activities with mixed effectiveness, with substantial infrastructure for Canberra, limitations on capital raising for telecommunications (at least pre-privatisation) and inadequate investment for airport and air traffic management, particularly in Sydney.

Much of the attention on financing infrastructure has shifted to user charges as a means of improving the efficiency and equity of provision. Combinations of fixed and variable charges (e.g. for water) and new methods of collection (e.g. for road use) have brought greater sophistication to charging. Within housing affordability limits, public tolerance of higher charges seems to be growing a little, provided that value for money is evident and that double charging is avoided - e.g. as between up-front capital contributions and charges by use. The power of geographically differentiated pricing - driven by differential real costs or by social justice - to support metropolitan planning is too little recognised and not put into practice. In Melbourne there would be great benefits from sectoral utility charges that reflect real local costs. The political justifiability of hypothecation is making inroads into the public finance arguments for consolidating revenue. Full-cost user charges for urban infrastructure are not necessarily inequitable - indeed by the criterion of equal incidence they are more equitable - but their social justice implications have not been dispassionately explored.

Private Participation

Private provision of or contribution to urban infrastructure are the main means of reducing claims on scarce public capital finance. Though developer contributions and direct infrastructure provision have long precedents in Australia, the practice is extending into infrastructure well off site and into purposes at the socially and politically defined - hence moving - limits of justifiable nexus. The various means by which this participation can occur - provision in kind, developer contributions, joint ventures, privately planned urban developments, public sector privatisation or corporatisation, interest rate subsidies, asset sales and leasebacks and so forth - are explored elsewhere (e.g. Kirwan 1990). There is no doubt that these methods of

addressing infrastructure finance shortfalls are growing within Australia as they are overseas, but their advantages and disadvantages from an urban planning point of view have, like user charging, been inadequately explored. The power of urban planners in Australia has rested to some extent on the potential denial of services, and this power has been used to provide infrastructure in a contiguous, sequential way. The privatisation of urban services, or even their altered staging to meet private opportunities, makes it necessary for planners to defend co-ordinated land release planning on new grounds. The prospect of a leapfrogged pattern of large, non-contiguous privately initiated and funded urban settlements may not appeal to most planners, who would call it urban sprawl, but freestanding ecologically near-self-contained ex-urban settlements are dear to planners' hearts. How different really are these models? It could even be that innovations in urban infrastructure financing could encourage more sustainable urban forms to evolve.

Conclusion

In summary, the current pressures on urban infrastructure financing in Australia - and there is no need to call it a crisis - are the rising costs of metropolitan expansion, higher environmental standards, continuing high underlying demand for housing, deferred expenditure on maintenance, low capital productivity and technological change in urban services, continuing and in some areas and for some functions growing backlogs of need, regulated limits on borrowing, continuing high real interest rates, hard but softening political limits to taxes and rates, federal government cutbacks to general payments to states and to infrastructure elements of specific payments, and a fetish with reducing what is in fact a relatively small public sector debt by historical and international standards.

The way ahead must consider better medium-term infrastructure planning and coordination, real state capital budgets including capital budgets for urban expansion, a national urban infrastructure fund or urban development bank, clearer accountabilities for infrastructure provision, a reconsideration of federal-state-local relations in this regard, a reduction of reliance on intergovernmental finance, user fees more closely reflecting real costs and therefore areally differentiated, more experimentation with public-private joint provision, a better understanding of how social justice is helped or hindered by new financing methods and, not least, a longer-term vision for Australia's cities and urban infrastructure.

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