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A Systemic Analysis of the City Link Project, Melbourne, Australia

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Abstract

Victoria's City Link initiative is reportedly the largest infrastructure project since the Snowy Mountains hydro-electric scheme. It has created, and will continue to create for the better part of the next two generations of Victorians, an enormous and potentially irreversible, change in the way in which previously publicly 'owned' assets are designed, funded, legislated, constructed, operated, marketed, and ultimately 'transferred' back to public ownership

The aim of this paper is to conduct an objective and systemic assessment of City Link. The assessment comprises an analysis of public policy-making processes underpinning the City Link project, a review of the official cost-benefit studies of City Link, and a brief assessment of the corporate governance processes employed by the primary stakeholders.

The paper concludes with a statement of our findings, together with an overall view on its systemic costs and benefits.

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Introduction

Victoria's City Link initiative is reportedly the largest infrastructure project since the Snowy Mountains hydro-electric scheme. It heralds a new era of both transport infrastructure funding and direct payment by freeway users in Victoria.

The aim of this paper is to conduct an objective and systemic assessment of this ground-breaking project. Its purpose is not to question the basic need for such major infrastructure projects, but rather to systemically analyze the specific 'solution path' which has been chosen in order to assess its overall, system-wide consequences.

A systemic analysis primarily entails the bringing together, and objective analysis, of what often are regarded as separate and distinct elements of a system. It therefore means that "we are encouraged to think about change in terms of loops rather than lines and to replace the idea of mechanical causality - e.g. that A causes B - with the idea of mutual causality which suggests that A and B may be codefined as a consequence of belonging to the same system of circular relations (Morgan, 1986: 247)." It then is conceptually the opposite of reductionist or isolationist analysis. Furthermore, a systems perspective is, we argue, clearly needed in such projects as City Link. Batty (1981), a transport planner, offers a most cogent observation:

> In short, our ability to define problems at all in any total sense, in the social domain, must be highly questionable, for it is extremely difficult to identify closed social systems at any level .... Economic, sociological, psychological, spatial, temporal and many other dimensions exist and in no way can these be separated from one another in seeking a comprehensive view. (Batty, 1981: 428).

This paper's systemic analysis therefore includes an analysis of a number of inter-related issues: the public policy-making processes underpinning the City Link project; an evaluation of the costs and benefit of City Link; an assessment of the corporate governance processes employed by primary co-venturers.

Project overview and assessment of public-policy making processes

The problems of traffic congestion in any major city are well known and documented. As early as 1929 a proposal for a southern bypass of the central business district was put forward as pat of the 1929 Transport Plan for Melbourne (Melbourne City Link Prospectus, 1996: 11). The growth of traffic after WW2 put increasing pressure on Melbourne's essentially radial road system. Peak hour congestion on radial roads encouraged the building of Melbourne's freeways in the 1960s and 1970s. However, the newly built freeways also exacerbated the problem of congestion in the inner city, and by the 1980s the push was on for solutions that alleviated congestion on major arterial roads such as Hoddle Street, and Queensway and King Street. During the 1980s Victorian governments — both conservative and labour — explored various ideas to

reduce congestion in the inner urban region. One proposal included traffic management treatments that incorporated upgrading existing roads and introducing one way street systems to increase capacity and volume. These low cost treatments were eventually rejected. A western bypass freeway around the CBD was also proposed to link into the existing Westgate freeway.

In the 1990s, various alternative strategic solutions were investigated: see the Victorian Auditor General (1996: 98-103) for a brief history of such strategies. Ultimately, it was concluded that the Links provided the best solution to the traffic problems that existed to the north, west South and south-east of Melbourne's central business district. (Victorian Auditor General, 1996: 102). Consequently, two short-listed construction consortia were invited by the current Victorian government in May 1994 to submit bids for the design, construction, financing and operation of the Southern and Western Bypasses, which incorporated an upgrading of the Tullamarine Freeway (Melbourne City Link Authority 1995-1996 Annual Report: 6). That upgrading was not part of the original plan first conceived in 1992 by the previous Victorian Labor Government.

On 29 May 1995, following receipt of submissions [by the two consortia] the State selected a preferred consortium (MCLA 1995): Transurban. The resultant Act of Parliament — the Melbourne City Link Act (MCLA: 1995) — is both very complex and demanding. However, its primary objectives were quite clear:

(a) to authorise and facilitate construction of the Melbourne City Link Project; and
(b) to authorise and facilitate the operation and management of the Link road and the tolling of the use of vehicles on the Link road by the Link corporation; and
(c) to grant a concession to Transurban City Link Limited A.C.N. 070 810 678 with the Agreement (MCLA 1995: 5).

The Project's eleven objectives from the State's perspective were detailed in the MCLA (1995) at Section 2 of Schedule 1. Of most relevance to this paper are:

"(iii) road and infrastructure programs be implemented on a competitive basis;
(vii) greater competitiveness in Victorian industry be promoted;
(viii) economic benefits be optimised and financial costs be minimised;
(xi) adverse environmental and social impacts along the Link and its feeder roads be minimised. (MCLA, 1995: 138)'.

From the Company and the Trustee's perspective, the MCLA (1995) declared that it was intended that:

(i) Project Debt be repaid in accordance with the Lending Documents; and
(ii) Equity Investors derive at least the Base Case Equity Return. (MCLA, 1995: 139).

The City Link project is a prime case of what has commonly been termed BOOT (Build, Own, Operate and Transfer) projects. Victoria, however, was not the first Australian State to embrace such a large, transport infrastructure joint arrangement. NSW had already undertaken three projects — the Sydney Harbour Tunnel (SHT), the M4 tollway, and the M5 tollway — the latter two of which are BOOT schemes. The substance of such BOOT schemes is advanced clearly by the NSW Auditor-General, Tony Harris (1994).

> ... a BOOT scheme may be viewed as comprising a flexibly structured joint arrangement between Government agencies and private sector parties for the joint provision of infrastructure in this State, based upon objectives and principles outlined in the Government's policy on such arrangements and as provided for in the *Public Authorities (Financial Arrangements) MCLA (1995) 1987* (Harris, 1994: 34)

The key findings of the NSW Auditor-General's report (Harris, 1994) are relevant to the Melbourne City Link project. In particular, Harris (1994) argues with conviction that where the risks are not born by the private sector, the private sector should not reap the returns for that risk. His observations are presented in detail.

> Assessing market risk is an attribute that the private sector claims as a comparative advantage. Indeed, the principal advantage of private sector equity in or ownership of a project is that the private sector has taken a market risk. Where that risk is evidently not assumed by the private sector, prima facie, it should not be the equity participant.
>
> Other advantages that the private sector might claim over the public sector (that is the more efficient designer, constructor, project manager, operator, maintenance provider) can be achieved by the Government through public sector ownership and the issue of contracts following a tender process.
> Although public sector ownership is not compatible with obtaining tax benefits, or with sidestepping Loan Council rules, private sector ownership cannot be justified on those factors alone.
>
> And if the private sector wishes to claim ownership in substance as well as form, it must also take the risks that are normally borne by proprietors (Harris, 1994: 24-5).

Admittedly, problems arise with implementing such BOOT schemes because it is neither simple nor necessarily commercially attractive for the private sector to take on large public infrastructure projects such as road projects. For example, road accidents on the constructed road could leave the BOOT operator open to legal action, unless the BOOT operator is afforded the same protection as a public agency. Future governments could change transport plans that might negatively affect the revenue stream. Without

some guarantees that these events would be minimised, banks and private consortia would be reluctant to risk large capital amounts. In order to overcome such problems the MCLA (1995) has effectively given the BOOT operator the same legal status as a government agency (Section 58 of the MCLA (1995). Although the intent of the BOOT scheme is to have an arms length relationship between Government and the operator, the enabling Victorian legislation — the MCLA (1995) — seems to have had difficulty in achieving such an intent. For example, take the following clauses from the MCLA (1995):

> If a provision of this Agreement is inconsistent with a provision of an enactment or any other law of Victoria, the provision of the enactment of other law of Victoria is, to the extent of the inconsistency, modified accordingly (MCLA 1995; 1998: 26; Clause 17)
>
> The Government, its Ministers and its public authorities, will do all things necessary and practicable to ensure the State and all its public authorities facilitate the implementation of the Agreement and to enable the State to discharge its obligations under the Agreement.
>
> Any amount that the State is required to pay under or arising out of the Agreement, or an agreement referred to in sub-section (2), is payable from the Consolidated Fund which is, to the necessary extent, appropriated accordingly (MCLA 1995, as amended 1998: 17).

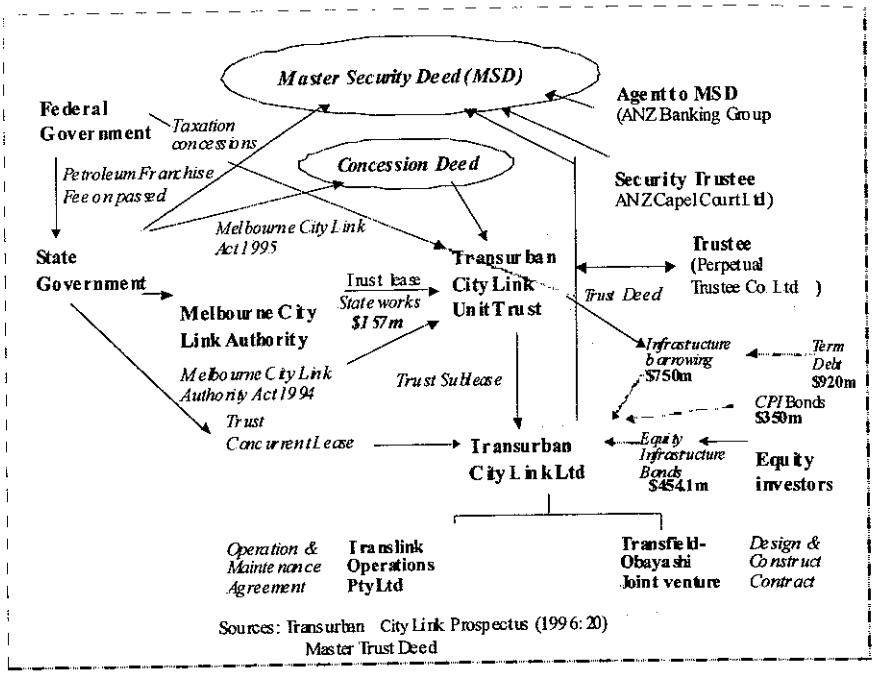
Similarly, The Recitals section of the Master Security Deed (MSD) clearly suggest that the financial aspects of this Debt contract are given precedence over the MCLA itself. Of particular concern is the following Clauses of the MSD:

> "1.4 Inconsistencies
>
> If there is an inconsistency between the provisions of this Deed and the Project Documents or between the provisions of the Deed and the Lending Documents, the provisions of this Deed will prevail to the extent of the inconsistency".

Additionally, this complex Security Deed (ie the Agreement) takes legal precedence over the MCLA (1995) itself, to the extent that any provision of the Agreement "is inconsistent with a provision of this Act -

> (1) (a) the provision of the Agreement, the Integration and Facilitation Agreement or the Extension Agreement (as the case requires) prevails; and
> (b) the application of this Act is modified accordingly
>
> (2) Nothing in this section derogates from the operation of sections 14 [Ratification of the Agreement] 15A [Ratification of the Integration and Facilitation Agreement], 15C [Ratification of the Extension Agreement] and 98 [Emergency Management](Master Security Deed, 1996)

Figure 1: Contractual & financial structure of City Link



BOOT schemes are attractive for government because they see them as a vehicle for constructing large capital intensive projects for the State but without incurring the necessary finance charges or risks associated with such projects. The belief is that the BOOT company or consortium raises the finance and takes all the consequent financial risks. The distribution of such financial risk in the City Link case is, however, difficult to ascertain clearly. This is so because of the highly complex set of contractual and financial relationships which underpin City Link. These are shown diagramatically in **Figure 1.** This figure indicates that there are ten separate legal 'persons' directly involved in bringing City Link to fruition. Both the Victorian and Federal governments are directly involved, as providers of funds for City link and as regulators and / or facilitators of the project. For its part, the Victorian government has sought to distance itself from City Link by establishing the Melbourne City Link Authority to both oversee and facilitate the project on the basis of a private sector build, own, operate and transfer undertaking (Melbourne City Link Authority Annual Report 1996/97: 6). The private sector's involvement covers both the actual undertaking of the project, as well as the bulk of the financing for City Link.

Whilst Transurban City Link Limited clearly bears the great majority of the costs of construction and the risks attached to the level of road usage after the City Link is opened, "the users of the City link via toll payments will, in substance, be the financiers of the project " (Victorian Auditor General, 1996: 96). Moreover, the MCLA (1995) itself appears to pass many other project risks onto the either the Victorian

Government, or City Link users, or the Victorian community overall. This is so in that the MCLA binds the Crown to compensate the operators for a wide range of "Material Adverse Effects". Such effects are defined as "a material adverse effect on (a) the ability of the Company or the Trustee to repay the project Debt in accordance with the amortisation schedule in the Lending documents (without regard to any acceleration of the obligation to repay); or (b) the level or timing or revenues or of outgoings incurred or paid in respect of the Project (1995: Schedule 1: 158)" They cover events such as alteration of traffic conditions, new roads or public transport that are perceived to adversely affect the project, changes in any State or Federal laws that might be adverse, industrial action or *force majeure* (Appendix, Clause 2.9, MCLA (1995): 644-658). Perhaps the most independent assessment of the sharing of risks in the City Link project is presented in the Victorian Auditor General's 1996 Report on Ministerial Portfolios. They are represented in detail.

> 'The key financing risks associated with the delivery and operation of City Link have been effectively transferred to Transurban.... However, the State has undertaken to assume responsibility for any outstanding project debt in the event that the arrangements are terminated as a result of any changes in State or Commonwealth laws or policies which absolutely prevent Transurban from delivering or operating City Link. (1996: 95)".
>
> '...the risks related to the stipulated events [ie Material Adverse Effects] are not to be borne by Transurban, but are to be mainly borne either by the users of City Link, ie. the motorists, or the State. (1996: 121)'
>
> The State government has accepted the risk associated with these circumstances [viz the possibility of Transurban being ultimately prevented either from either completing, operating , or collecting tolls from the project due to changes in either State or Commonwealth laws or requirements] and is required to provide redress to Transurban ... the compensation that will be received from the State may be less than the market value of their investment (Victorian Auditor General, 1996: 122)."
>
> "Under the established arrangements, Transurban will bear the risk of reductions in traffic volumes and associated toll revenue, brought about by various factors.... However, this risk is partly mitigated by State undertakings which are incorporated under the arrangements that the Link is intended to be part of Melbourne's freeway network and that associated freeways and principal traffic routes will be managed in a manner that affords the Link due status as a central part of the network (Victorian Auditor General,1996: 130; emphasis added)."

Another critical feature of the City Link legislation, as shown in **Figure 1,** is the concession period granted to Transurban, which is a legal right to the "Company" to charge a per use toll against each user of the City Link, for a period of thirty three and a half years after the date of financial closing, in early January 1996 (MCLA 1995, as

amended: Schedule 1:135). This time span is some three and a half years longer than the economic life of a road, usually taken to be about 30 years (Stanley, 1997: 10), and accordingly deserves scrutiny. During this period Transurban is liable to issue to the Victorian government annual concession fees of some $95 million over the first 25 years. The Victorian Auditor General (1996) offers a poignant observation.

> Transurban may, at its option, issue Concession Notes to the State in satisfaction of its obligations to pay concession fees. ... Under these circumstances , a risk exists for the State as to the timing of the actual concession fees, in the event that the project experiences financial difficulties (Victorian Auditor General, 1996: 131)'

The concession period may, however, end earlier if "(i) on that date the Equity return (..) is or exceeds 17.5% per annum : (ii) all debt comprising part of the project Debt at Completion of the last Section to be Completed (...) has been repaid (MCLA 1995; 1998: Schedule 1: 135)". Such an equity return is more than 3 times higher than both the current 10 year government bond rate, and the rate of interest charged by the Victorian Government as a Capital Asset Charge against its own departments for the last five years and paid in cash by them (see for instance Victorian Department of Treasury and Finance 1999-2000 Budget Estimates Budget Paper No. 3: 49, 97, 130, 176, 230, 271, 312, 347, and 373). However, this concession period may also be extended up to an additional 9 years. Furthermore, the Concession period could be for a maximum of 53.5 years should the State so "elect to make available as a method of redress, in the context of any particular Appendix event occurring after 33 years and 6 months from the Link Expected Completion Date (MCLA 1995: Schedule 1, Clause 2.11(b): 209-210).".

In sum, the City Link project is a potentially high risk project, both for the Government and ultimately the people of Victoria. The legal documentation pertaining to the financial relationships between the Government as a commercial entity, Transurban, and the financial institutions, clearly has far greater legal weight than the Act itself, and commits the government to make good any substantial losses incurred by the private sector. The next section evaluates appropriately therefore the economic viability of the project.

Assessment against standard economic criteria

The justification of the City Link project was provided by cost-benefit analyses performed by Allen Consulting Group (ACG) in 1995 and 1996. The later analysis formed the official economic justification for the City Link project (see Melbourne City Link Authority Annual Report, 1995-96: 12-13). The ACG studies estimated both the direct economic benefits, through the use of consumer surplus theory, and wider economic benefits to the community though the application of an economic modelling package. In this paper we discuss only the results and methods in the second or final paper.

The project life was taken as 36 years, starting in June 1995 with the commencement of the construction phase, scheduled to take some 45 months. In the first full year of operation (2001AD) ACG estimate the savings to the community of $118 million per annum. The initial outlay was stated as $1.7 billion construction costs with average annual operating costs of $10million. ACG did not cite a specific source for this construction cost estimate, instead noting that the data were provided by the client, Melbourne City Link Authority. The ACG consultants used a real discount rate of 8% per annum for evaluation, as recommended by the Department of Finance (1997) for public sector infrastructure project evaluation. Based on this methodology, the ACG (1996) was unequivocal in its support of the City Link BOOT project.

> Total benefits in 2000–1 in all these categories will be $228 million. The discounted future stream of City Link's benefits and costs implies a Net Present Value of $1,285 million and a benefit cost ratio of 2.04. (Allen Consulting Group, 1996)

To systemically assess the reliability and validity of any such complex analysis, it needs to be evaluated against, *inter alia,* the following criteria:

1. the extent of justification for the elemental assumptions used to derive the results; the appropriateness of the assumptions;
2. the quality and statistical reliability of the base data used;
3. the suitability of, and mathematical integrity of, the transformational
4. processes employed on the basic data; and
5. whether key sources of uncertainty have been adequately identified and dealt with.

In respect of criteria 1 and 2, the Department of Finance (1997), in highlighting several limitations of standard cost-benefit analysis, note that

> when the user's interest is naturally focused on the 'bottom line' of the analysis, it is easy for the analysis itself to be rather obscure. However, the analysis will only be as good as its assumptions and these should always be set out as clearly as possible (1997: xi; emphasis added)."

For economic cost-benefit studies such as the ones under review, several other criteria need to be met, as suggested by (The Department of Finance Handbook of Cost-benefit Analysis (1997):

6. (income) distributional analyses should be undertaken;
7. an assessment of externalities should be included; and
8. an attempt to consider the *intangible effects* of the infrastructure project ought to be made.

Our analysis now assesses the ACG study against these criteria.

1 & 2 Justification for the elemental assumptions and their appropriateness

ACG's cost benefit analysis relied heavily on four assumptions. The first is that daily vehicle hours throughout the Melbourne metropolitan area are neither specific to any day of the week, nor any time span within a given day. This assumption is neither explicitly stated, nor is whether the original data producer (Veitch Lister Pty Ltd for MCLA) specified the data as average, or median, or modal, or working day as opposed to working and non working days. The observable fact is that there are huge variations in travel volumes and compositions by time of day and day of week. This means that there is no representative "average" hourly traffic number.

The second implicit assumption made is that all freeway travellers of a particular 'type', as categorized by type of vehicle driven, place exactly the same monetary value on the travel time 'saved'. Even more fundamentally, ACG along with indeed most other transport economists, and engineers, seem to assume that the specific purpose of a vehicular journey — journey to/ from work, shopping trip, visiting a friend, attending school or university, the annual car & caravan trek to the coast etc — has no direct impact on the money value of time either consumed or saved by vehicular travel. Indeed the Department of Finance (1997) argues that "in the case of a commuting time reduction, they [commuters] may have less alternative use for time than over a long weekend (1997: 109)" and therefore place a lower imputed opportunity cost on such work-home travel time than purely recreational travel time. The Department of Finance favours the sue of the alternative approach — the direct behavioural assessment of how people value time where this is applicable (1997: 110). They note:

> There is considerable consistency across studies in the assessment that commuters value time savings in a range between 20 and 50 per cent of gross earnings. However, care needs to be exercised when applying such broad averages to particular groups. The time valuations of the latter may be significantly above or below the average. Clearly values which are specific to the relevant user group are always to be preferred (1997: 110).

The critical third assumption employed by ACG (1996) is the actual calculation of the value of time. The dollar value of travel time for each individual vehicle type, given in Taylor and Thorensen (1992), which aggregated to a value of time of $14.42, was combined with of "an average value of time of $21.50/ hour in the inner city area (Allen Consulting Group, 1995: 22)". These two figures were then combined as follows:

2/3*$21.50 + 1/3*14.42 = $19.14/hour

(Allen Consulting Group, 1995: 22)

The fractions employed were based on the unsubstantiated argument that "the travel time savings in the inner city area represents about two-thirds of the total" (Allen, 1995: 22)".

No justification was given for the fourth assumption used of an assumed 330 days per year to aggregate to annual values It could well be argued that at least for 'private' users of the City Link a more appropriate figure would have been 240 (working) days, under the assumption that there is no direct money value of travel time when they are not travelling for work-related purposes Indeed, the same could be applied to commercial users, under the assumption that the great bulk of lost travel time occurs during week days, and conventional business hours rather than at nights or on week ends

Allen's approach to deriving these critical time savings benefits lay at the heart of its study's limitations Using the dollar value of travel time for each individual vehicle type given in Taylor and Thorensen (1992) of $14 42 an hour, as opposed to the $19 15 per hour used by ACG (1996) *ceteris paribus* reduces the NPV of total travel time savings by some $403 million, or 32% of total net economic benefit (1993 dollars) claimed by ACG (1996). Using this lower time value rate, and 240 days instead of 330 days results in a reduction in project's total NPV of $829 million (or 64% of ACG's total NPV OF THE Link's net economic benefits)

3 & 4. Quality and statistical reliability of the base data used; suitability of, and mathematical integrity of, the transformational processes employed

Another limitation of Allen's studies is a factual one, involving the timing of estimated benefits. The estimated savings were shown to commence in 1997-98. This is despite the fact that the Western Link was not scheduled for completion until April 1999, and the Southern Link in December 1999. The effect of this single change is a reduction in the NPV of some $19 1 million, *ceteris paribus*

Another computational error is far more serious than this timing difference. It is the method used by Allen (1995, 1996) to compute 'off road benefits'. These benefits include such improvements to business activities "such as increased efficiency of warehousing operations, better links between the industrial zones of the Melbourne metropolitan areas and more flexible labour markets (Allen Consulting Group, 1996: 9)." The consultants themselves noted that these

> are the most difficult to calculate. We estimate that these amount to 20 per cent of the other benefits (in 2011), which is conservative. The resulting dollar estimate on this basis is $52 million. (Allen Consulting Group, 1996: 12).

However, this 20% estimate was applied to the total projected travel time savings estimate in each year. In our view, it should only have been applied to the projected 30% of the total time savings benefit accruing to 'commercial vehicles' (study (ACG, 1996, Table 2.1: 11), since time saved by private users of City Link has no direct connection with such business based 'off road benefits'. This reduces the size if this benefit in 2011 to $26 million, as compared to the ACG value of $51 million, and the total off road benefit from $1800 million to $956 million. Adjusting for this

methodological error reduces the NPV of the off road costs by some $ 203 million (in $1993), and total NPV of net economic benefit by $224 or 17%

5 *Whether key sources of uncertainty have been adequately identified and dealt with*

One of the most significant limitations to the usefulness of the Allen study is there was no reporting of any sensitivity analyses which were presumably undertaken Whatever the reason, and given the extremely large, highly complex and long-term nature of City Link, one would reasonably contend that such sensitivity analysis is vital to ensuring both the reliability and validity of such important, and publicly extolled findings.

A key source of uncertainty for any such capital intensive project as City Link is the effects of different discount rates on the resulting cost, benefits, and NPV AGC (1996) use of a real discount rate of 8%, although the Allen consultants felt that given the low risk profile of the project a lower rate may have been justified (Allen Consulting Group, 1996: fn 11: 12)

We would argue that the City Link project is quite clearly a private sector project, albeit with a strong government involvement Indeed, Allen Consulting Group itself categorically stated that "..... government financing of City Link is not a feasible option The only realistic option to achieve the project is through private sector financing: City Link will be financed through the collection of tolls. (Allen Consulting Group, 1996: 1)"

Accordingly the use of a private sector discount rate, or alternatively the use of the recommended low, medium and high discount rates (Department of Finance, 1997) would have provided a more valuable and conceptually defensible cost-benefit study. A critical question is therefore what discount rate should have been used? An obvious answer, to us, is that a discount rate equal to the rate of return to shareholders which underpins the Concession period: namely, "a real after tax internal rate of return on its equity investment in the Project equal to 10% per annum (Melbourne City Link Prospectus, 1996: 39)." is the most valid rate. Using this 10% discount rate *ceteris paribus,* yields a Net Present Value (in 1993 dollars) of net economic benefits of $730 million, or some $555 million lower than the consultant's estimate of $1285 million A variance of this magnitude — some 43 per cent — is both statistically large and worthy of public disclosure. Were the revised costs mentioned above used, the NPV with a 10% real return would be $468 million, or some 63% lower than Allen's estimate Should the figure of 240 days / year be used instead of 330 days/ annum, combined with the other amendments already discussed, this would result in a Net Present Value ($1993) of $0 (see **Table 1** below)

Table 1 Amended economic analysis of direct costs & benefits: City Link

Economic parameter	Stated Net Present Value ($1993) $000,000	Amended NPV #1 (1993) $000,000	Amended NPV #2 ($1993) $000,000
Real discount rate used	8.0%	8.0%	10.0%
Total direct construction costs	1149.2	1149.2	1149.2
Total periodic maintenance costs	89.0	89.0	89.0
Total direct project costs	**1238.1**	**1238.1**	**1238.1**
Total time savings benefits	1,486.1	1076.2	782.7
Total accident prevention savings	106.8	105.8	105.8
Total vehicle operating cost (VOC) benefits	32.8	$32.5	32.5
Fleet mix savings	477.5	$473.5	473.5
Direct 'off-road cost' reductions	413.9	$210.9	210.9
Total Benefits less costs ($1993 NPV)	**1285**	**651.8**	**0**

Another concern about the Allen cost-benefit study centres on its lack of *triangulation*. "We take as given the results of the modelling of those traffic flow effects, as provided to us by the Authority (Allen Consulting Group, 1996:emphasis added).

Put simply, the analysts seem to have made very little attempt at seeking data verification through the use of alternative data sources (Brewer & Hunter, 1989: Jick, 1979). From a data reliability and validity perspective, one must accordingly view their conclusions with some degree of circumspection. The final concern is that no requirement for a distributional impact assessment was either requested by the client or presented by the consultant. This is a major limitation of the study and will be discussed in detail in the next sub section.

6. Income distributional analyses should be undertaken

The Allen cost benefit analysis did not report any income distributional impacts. Given that ACG used the Department of Finance (1997) to justify the use of a real 8% discount factor, it is surprising that their consultants did not heed that authority in respect of this advice:

> "Distributional implications are easily obscured by the aggregating character of the cost-benefit process. So that decision-makers are fully aware both of the identity of the groups likely to gain and to lose as a result of project or program choices, and of the nature of size and the gains and losses, this information should be carefully presented, most usually in the form of a distributional incidence chart or matrix. (Department of Finance, 1997: xi)".

Arguably, the most significant income distribution issue is the extent to which the net economic benefits from City Link are at least roughly equal to the income re-distribution effects created directly out of the toll mechanism being employed. The concession period noted earlier in the **Project overview** section is one of the authors' major criticisms of this project, on two counts, the first of which has already been detailed. The second count is that the City Link project will, assuming the toll revenue projections are reliable, result in a total minimum return on equity to the subscribers to the Transurban prospectus of some $2,030 million on a minimum Equity Investment of $AU 455 million (MCLA, 1995, Schedule 1 Clause 14.6, p.256). One is forced to ask, from the Victorian community's point of view, whether indeed if the one of the key objectives of the Victorian government, viz that "economic benefits be [will be] optimised and [the] financial costs be minimised (MLCA, 1995: 138)". One is also entitled to ask whether a mixture of private and public sector transport enhancements may have lead to similar efficiencies but at far less cost and arguably externalisation of risks onto the Victorian community, about which more will be noted shortly.

A second major income distribution concern is that, based on figures provided in the 1996 Melbourne City Link Prospectus, using the 8% real discount rate, the Net Present Value of projected toll revenues over the expected concession period exceeds the Allen NPV figure by some $1277 million (in $1993), or an amount almost identical to the reported total net savings of $1285 million. The difference (or consumer deficit) between the NPV of toll revenues collected and net savings is indifferent to the discount rate used. Again, one is forced to ask, from the total Victorian community's point of view, whether indeed if the "economic benefits be [will be] optimised and [the] financial costs be minimised", as aspired to by the Victorian Government.

A third distributional question is whether the potential economic savings to the Victorian businesses of no less than $147 million implicitly stated by Allen Consulting Group (1996) are appropriately offset by the businesses' contributions to the projected toll revenues. Our analysis indicates that car drivers will contribute an estimated net present value of $1793 million (in 1993 dollars, 8% real discount rate) or 70% of the total toll revenue, against the estimated net present value time of total time savings for all vehicle types of $1486.1 (in 1993 dollars) calculated by Allen Consulting Group (1996). Of this estimated total time saving amount, private cars are attributed $1244 by Allen (1996). In other words, private users are cross-subsidising commercial and business users to the tune of $549 million (in 1993 dollars), or 44% of their hypothetical savings over the course of the toll period.

In an effort to test the validity of our analysis, an earlier draft of this paper was sent to both an independent transport economists, and to the senior finance officer of the Melbourne City Link Authority. Neither expert dismissed our analysis as invalid, nor was the latter able to strongly refute the facts presented, rather chose terming them as "differences of opinion". A representative from ACG was also contacted but unfortunately could not find time in his busy schedule to respond to our critique.

Corporate governance criteria

An increasingly discussed and highly significant issue in today's world is that of *corporate governance* : Micklethwait and Wooldridge (1996). Gettler (1999) notes that the OECD "these days sees principles of good corporate governance as crucial for building a robust global economy generating sustainable growth and prosperity." However, a key and as yet unresolved issue confronting the OECD, is that of "defining the rights of stakeholders (Gettler, 1999: 3)." Gettler himself observes : "corporate governance issues tend to arise out of conflicts of interest between the various parties of an organisation." We have just alluded to one such significant conflict of interest.

The corporate governance processes employed by both the Federal and State Government in respect of the City Link project are arguably not without blemish. The Federal government has directly financially supported City Link through the allowance of significant tax concessions. These tax concessions "helped Transurban to attract investors by offering tax exempt returns on their investments during the four year construction period before the project begins to earn toll money (Das, 1999: 10)." The Infrastructure Loan facility, the largest individual funding source, has been "certified by the Development Allowance Authority to qualify for concessional tax treatment under Division 16L of the Income Tax Assessment Act 1936 (Transurban City Link 1998 Annual Report: 32)". The legitimacy of this tax break however is still being challenged, with Justice Merkel of the Federal Court recently upholding the right of Mr Peter Allen, a near resident of the Tullamarine freeway, that he was an "affected person". Justice Merkel has "ordered the Administrative Appeals Tribunal (AAT) to decide if it was valid for Transurban to be awarded tax concessions by the Federal Development Allowance Authority (Das, (1999): 10). Should the AAT decide that these concessions were not valid, the entire financial structure of Transurban could quickly unravel.

The Victorian government's role and processes have been commented on in dêtail earlier in this paper However, one aspect not yet canvasses is the logic which underpinned the selection of a BOOT project rather than the more conventional public funding alternative. The Victorian Auditor General (1996) offers a salient finding.

> Based on the audit review of the short-listing of the preferred consortia and the determination of project financing, it was concluded that the selection processes were appropriate. However, it was identified that a detailed financial model had not been developed to compare project costings on the basis of private sector financing versus government borrowings (AG, 1996: 111).

Transurban's Board of Directors states its perspective on corporate governance: "The Board of Directors, together with the Company's management, has the responsibility to plan and run the Company for the benefit of shareholders (Transurban City Link 1998 Annual Report: 13)." This policy seems at odds with the following observation:

> "While acknowledging their accountabilities to a range of stakeholders, and particularly to shareholders, the boards of 'benchmark" companies appear to be putting a higher priority on their relationships with customers and employees...

While stressing the importance of customers and employees in corporate videos and speeches, many boards persist in linking remuneration and advancement to the achievement of narrow, and sometimes inappropriate financial targets rather than measures of customer satisfaction and employee involvement and satisfaction. Not surprisingly, the people of the organization take their cue from the actions of the board, and not from the words (Coulson-Thomas, 1994)

One significant failure of Transurban's corporate governance policies centres on the method used to compute the "diversion factors". This critical parameter was based on questionable research processes.

> Preparation of this model in a form suitable for application on the Melbourne road network necessitated specialist research in the form of a stated preference survey which involved a sample of approximately 280 households and 180 freight operators... The survey results enabled estimates to be made of the impact of the implementation of a toll for use of the Link segments and hence provided the ability to forecast tolled traffic volumes and projected revenues. *(The Melbourne City Prospectus,* 1996: 42)

Without delving deeply in statistical waters, one must surely question the validity and reliability of any survey of such a crucial kind being based (i) on one sample only; (ii) one such a small sample size, given the quite 'revolutionary' road usage scheme being investigated, and (iii) using only one research method (see Brewer and Hunter, 1986)

Overall conclusions and policy suggestions

This paper has analysed the public policy making processes, the economic justification, and the corporate government processes that underpin City Link

The public policy making processes employed are potentially to the detriment of the Victorian community for the next three decades. Our analysis shows that the substantial risks have not been totally passed to the private sector. Indeed, our results show that Victorians could easily be saving $1 for a trip that actually winds up costing $2. It also demonstrates that the questionable nature of the extent of the economic benefits of City Link The corporate governance processes used by all the key stakeholders are not consistent with international best practice.

In closing, we argue strongly that the model which underpins City Link should not unequivocally be hailed as the most effective alternative set of arrangements, nor should

its regulation and on-going monitoring be lost in the initial euphoria of the final completion of the Construction phase of this monumental and most pervasive attempt at an innovative, 'win-win' arrangement.

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