



An initial performance review of Melbourne's City Link toll road

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Abstract

Melbourne's City Link toll way has now been fully operational for almost two years. A primary aim of this BOOT road infrastructure initiative was to reduce traffic congestion in Melbourne's inner city area (Allen Consulting Group, 1995: Melbourne City Link Act 1995). Accordingly it is now both practicable and important to subject this major road infrastructure investment — costing in excess of \$2 billion, of which the Victorian community has directly funded a substantial amount — to a performance review of both its benefits and cost.

This will be done by exploring two questions:

1. have Melbourne's private transport users behaved in the way that Transurban forecast in its 1996 prospectus?
2. Has City Link delivered to the Victorian community the economic benefits that were forecast of it?

Key words: transport analysis, urban congestion, transport policy, economic analysis.

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INTRODUCTION

Melbourne's City Link is in many ways a groundbreaking project. It has converted the major freeway system that traverses Melbourne's inner and middle city from a publicly managed and collectively funded urban road system into a privately built, owned, operated and owned and managed motorway. In other words, the spine of Melbourne's urban road transport system has been effectively privatised. Unlike the design, build, finance and operate road contracts that have been undertaken in the United Kingdom under the Private Finance Initiative (PFI), City Link's tolls are not shadow tolls, but are direct, electronically determined, user pays tolls (see Bourn 1998). The project's engineering and technical challenges were and continue to be considerable. Its economic, business, transport policy and social impacts on Melbourne and the state of Victoria will be felt for at least the next three decades.

City Link officially became a government legislated Build, Own, Operate and Transfer (BOOT) project with the passing by the Victorian Parliament of the Melbourne City Link Act (MCLA) in December, 1995. This was some three and a half years after the previous Victorian Labor government called for expressions of interest to build, own and operate the Western and Southern by passes in May 1992. In September of that year, two consortia, Transurban and CHARTRoads were short listed by that government. It was a full two years later, however, that the incoming Coalition government issued a Project Brief to these two consortia. The evaluation of the resultant tenders took some four months and the selection process was appropriate (Baragwanath 1996). However, the lack of any attempt to compare project costings on the basis of private sector financing versus government borrowings was concerning (Baragwanath 1996).

A memorandum of understanding, followed by the signing of the Concession Deed between the State Government and Transurban, occurred months prior to the tabling and passage of the MCLA. The last official cost-benefit study of Melbourne City Link was presented to the Melbourne City Link Authority — established by an Act of Parliament in December 1994 to oversee and facilitate completion of City Link — by The Allen Consulting Group (ACG) and Cox in April 1996.

Construction commenced in May 1996, some two months after the financial close of the prospectus. The construction phase was virtually finished by June 2000. Tolling of the Western Link started on 3 January 2000; on 26 April 2000 for the Domain Tunnel and in-bound lanes of the Monash Freeway (formerly the South-eastern freeway); and on 1 July 2000 for the in bound lanes of the Exhibition Street extension. Tolling of all sections of City Link became effective on 28 December 2001 (Melbourne City Link Authority, 2001, p. 11).

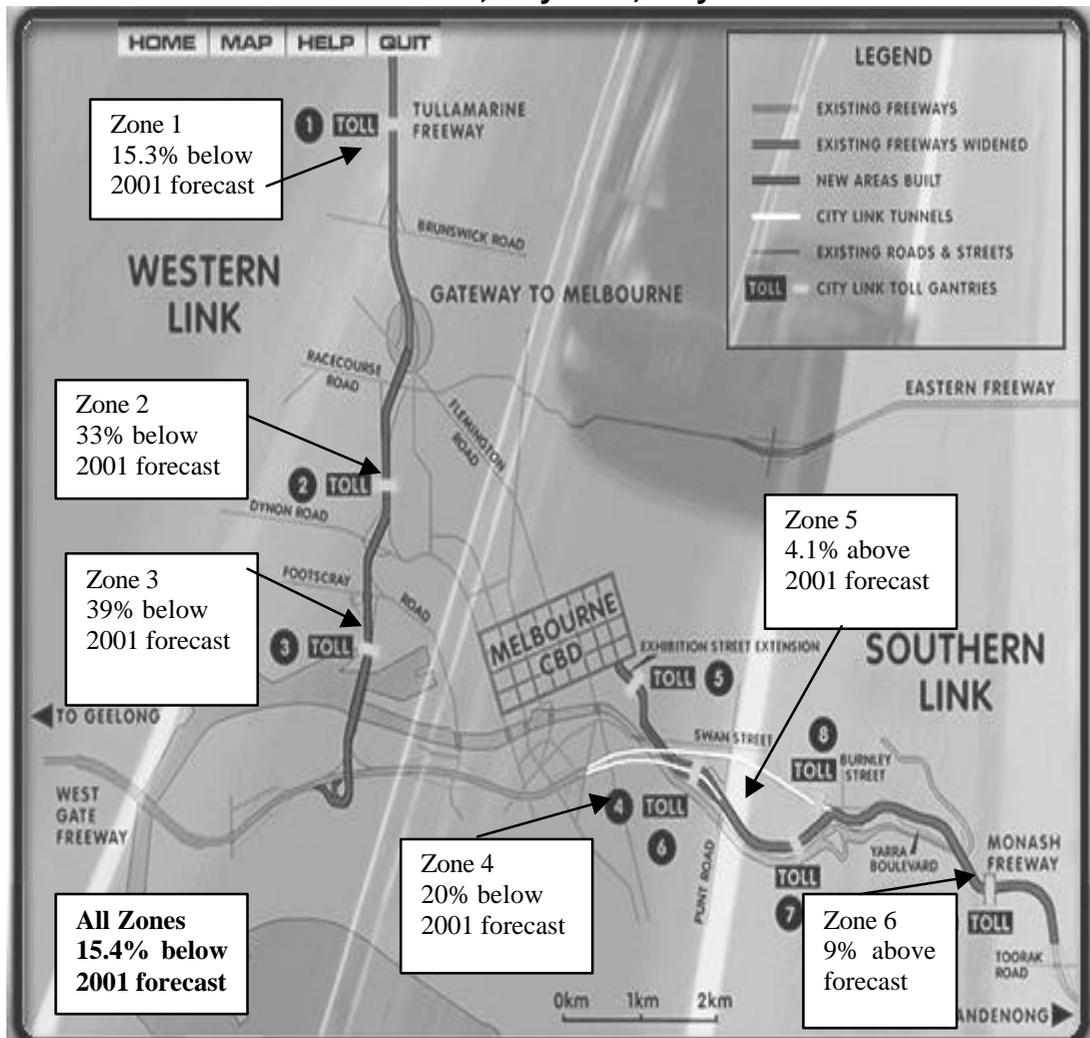
The rest of this paper examines the operating phase of City Link over the first full year of its post-construction period. It aims to explore two main questions:

3. have Melbourne's private transport users actually behaved in the way that Transurban forecast in its 1996 prospectus?
4. Has City Link delivered to the Victorian community the economic benefits that were forecast of it?

Actual usage versus prospectus forecast in 2001

The actual average weekday usage between July and December 2001 is set out in the following **Chart 1**. The last six months of 2001 were used since actual traffic usage in the first six months of 2001 was distorted by the major repair work that was required after the failure of a section of the Burnley tunnel in February 2001.

Chart 1: Actual versus forecast traffic, City Link, July-December 2001



Source: Map downloaded from www.cityLink.voc.gov.au; Transurban City Link Prospectus, Section 5.3, p. 42 (1996); company releases of monthly traffic data to the Australian Stock Exchange.

The key point that is shown in Chart 1 is the very different usage of City Link by motorists on the Western and Southern Links. The usage of the old Tullamarine Freeway (Zone 1) is some 15% below the volume that was projected in the 1996 Transurban prospectus. This amounts to some 20000 trips less per hour on an average weekday than were originally forecast. Clearly these toll avoiders are using alternative routes in preference to paying to use City Link. As reported in an earlier paper (Odgers 2001) this extra traffic is putting great pressure on two of northwestern Melbourne's major arterial routes. A second notable variance between the actual and projected traffic volumes on the Western Link is a major short fall in traffic in Zones 2 and Zone 3. In aggregate, some 76,600 vehicles — or the equivalent of 36% — less than the forecast number are by passing the Central Activity District. As at the end of June 2002, traffic usage on all three Western Link zones has increased by some 6000 vehicles per day. However, the Western Link in total is still some 28% below the projected 2001 average weekday traffic volume.

Chart 1 shows that the aggregate weekday traffic volume of City Link's Southern Link, on the other hand, is slightly above the 1996 projections. This is so for both sections of the Monash Freeway (Zones 7 and 8), but not for the Burnley tunnel section (Zone 4) that is some 20% below the 2001 prospectus projection.

The major reasons for such large difference in acceptance of City Link's user pays principle can only be surmised, until such time as rigorous, independent research is undertaken. Two reasons are, however, hypothesised. One is the greater existence of alternative, major private transport routes in the north and west of Melbourne, than in the east and the south. The second reason is based on the socio-economic demographics of greater Melbourne that show a substantially greater proportion of managerial/ executive people living in the east and south than in the north and west. It posits that private car users in the east and southern suburbs are more likely, on average, to either have their work related tolls either paid outright, or subsidised by their employer, or to be more willing and able to pay the toll, than are car travellers living in the north or west of Melbourne. This in itself virtually eliminates their need to find 'free' alternative routes. Such a hypothesis finds support in the research of (Sapkota 1999) who concluded that the higher income groups are the likely winners where tolls are levied on roads, particularly when pricing is only applied on portion of the urban road network (Sapkota, 1999: 773). Melbourne's urban road network since the introduction of user pays on City Link is a case in point.

Actual versus projected financial and economic benefits

One of the key objectives of the City Link project was that its economic benefits are optimised and that the financial costs be minimised (MCLA 1995, Schedule 1, p. 186). This objective was pursued through the decision to proceed with its construction and operation as a BOOT project, where the private sector consortium took responsibility for the design, construction, ownership and

ongoing operation of City Link as a tolled motorway. The option of reimbursing the private sector participant through the use of shadow tolls was dismissed by the Victorian Cabinet in 1994 'as the financing of the project may become subject to Loan Council requirements (Baragwanath 1996)'. Consequently, the recommended establishment of a public sector comparator against which bids from bidding private sector organisations was not pursued (see for instance (Bourn 1999). Given the scale, novelty and long-term impacts of City Link on both the city of greater Melbourne and the state of Victoria, this procedural omission is, in this writer's view, still regrettable.

In return for accepting the responsibilities of undertaking a BOOT project, the winning consortium was granted an exclusive licence by the Victorian government to charge a direct user paid toll on each and every vehicle using City Link for a period of thirty three years and a half years after the end of the construction phase of the project (MCLA 1995, Schedule 1, p. 135). For its part, the Victorian government agreed, among other things, to fund certain state works during the construction phase, to implement specific Agreed Traffic Measures, and to amend various pieces of legislation to protect Transurban's financial and legal position. The Government also agreed, at Transurban's request, to defer the actual encashment of the annual concession fee that the City Link Act (1995) specified to be payable half yearly in arrears, until such time as a notional initial investor has achieved a real after tax internal rate of return of 17.5% per annum on the initial investment.

The need for appropriate risk allocation between private and public sector contracting parties in such private sector financed public projects is absolutely critical. Bourn (1999) concurs with others (e.g. (Walker and Walker 2000) who note that without such appropriate risk transfer, 'the private sector receive the benefit of a very secure income stream, similar to a gilt-edged security, but may set their charges at a level which earns them a return far higher than is available on such a security (Bourn, 1999: 23).'

A most important question in respect of City Link is accordingly have its financial risks been most appropriately allocated to minimize the financial costs to the Victorian community? Answering this question authoritatively is problematic, given the lack of publicly available data on the actual Base Case Financial Model on which the financial aspects of the contract were predicated. It is also made more difficult by the shroud of commercial secrecy that has surrounded City Link since its beginning.

Given these challenges, the approach used here is to assess the costs and risks that have been borne by the Victorian government on behalf of the Victorian community, and to compare these to those borne by Transurban. The Melbourne City Link Authority's annual reports detail the Victorian government's financial contributions to City Link. As of 30 June 2001, some \$389 million has been contributed as capital to the City Link Authority. The Authority has spent over \$268.8 million in acquiring land, buildings and undertaking State works, and in providing compensation expenses. A further \$73.6 million in total has been spent on non-depreciation expenses.

At present, Transurban has not paid any money to the government in the form of annual concession fees. The 2000-2001 MCLA annual report notes the lack of any progress on resolving the on-going dispute between Transurban and the Australian Taxation Office concerning the legitimacy of treating Transurban's issuance of annual promissory notes to the Victorian government in lieu of its liability to pay an annual concession fee of \$95.6 as an annual taxation deduction. The City Link Authority also notes that this dispute is likely to be drawn out in the courts 'for some time (2001, p. 9)'. (Phillips 2002) for Transurban notes that the hearing has been deferred to 2 October 2002. An adverse finding against Transurban would negatively impact on the profitability of Transurban, thereby delaying the encashment of the Notes by the State. The face value of these concession notes as of 30 June 2001 is some \$509.3 million (MCLA Annual Report, 2000-2001, Note 12, p. 59). However, they are valued at a present value of \$53.4 million in the Authority's Statement of Financial position as at 30 June 2001. In a sense, the difference of \$456 million represents an interest free loan to Transurban by the Victorian community. The Victorian community is foregoing interest in two ways. Firstly, by not charging Transurban interest for this loan. Secondly by actually losing the ability to invest almost one half a billion dollars and accordingly foregoing interest income thereon.

The commercial risks borne by Transurban essentially centre on the usage of City Link by motorists, along with the normal financial risks involved in any highly geared, long-term, major investment project. As noted in Chart 1, actual traffic usage of City Link between July and December 2001 was some 15% below that forecast in the 1996 Melbourne City Link Prospectus. The impact of such lower than projected traffic volumes on actual pre-tax internal rate of return (IRR) was discussed in the prospectus, where it was stated that, for example '10% less traffic decreases the pre-tax IRR by 1.8% (Transurban, 1996): 50).' Such a reduction in pre-tax IRR, forecast to be approximately 19% (Transurban 1996) is not what could be considered extremely high risk given the relatively high projected pre-tax IRR and the length of City Link's concession period. The second risk component very much is influenced by the cash flow pattern achieved by the borrower, and the borrower's ability to insulate itself from short-term, substantial cash flow negatives in the early and higher financial risk part of the investment project. In Transurban's case, it has to date saved itself from paying out potentially hundreds of millions of dollars in taxation to the Federal government by claiming full tax deductibility on these concession notes payable to the Victorian government. This cash flow saving is a cumulative one, and may mean that Transurban delays paying any taxation on its revenue for many more years into the future. Another means by which Transurban is able to manage its cash flows is its ability to increase the tolls annually by no more than the CPI increase plus 2.5%. This ability to increase price considerably softens the impact on cash flow of lower than forecast traffic volumes.

A third risk reduction method the Victorian government has provided Transurban is the length of the concession period itself. The minimum length is some twenty five and a half years, should the after tax equity return exceed 17.5% per annum and all project debt have been repaid (MCLA, 1995,

Schedule 1, p.97). The maximum length of the concession period is fifty-three years and six months, or double the minimum concession period (MCLA, 1995 Schedule 1, p. 158). The extension of the concession period can be triggered by the incidence of a Material Adverse Effect. The specific events that could trigger a compensation claim are detailed in Appendix Clause 2.9 of Schedule 1 of the MCLA (1995: 1998). This Appendix runs to some 13 pages, and includes such events as (i) changes in transport policy which 'specifically discriminates against tollways'; or (ii) are inconsistent with overall objectives or intentions of the parties as described in Clause 2.1, taken as a whole (see MCLA, Schedule 1, Appendix, Event 3(d): 379-380). Also included are either changes in, or new, State or Commonwealth Government law.

Without citing them in full, the remedies for such material adverse effects are potentially onerous to the Victorian community. In the Melbourne City Link Act (1995) such remedies 'may only include (i) amending the Toll Calculation Schedule; (ii) varying the Concession Period and the term of the Leases; (iii) *altering the allocation of risk between the parties* as established under the project Documents (and making consequential changes to the project Documents); (iv) *varying the rights which the State has to receive payment of monies under the Project Documents (...)*; (v) requesting the Lenders to restructure the project financing arrangements; (vi) *the State making a financial contribution to the project*; or (vii) adopting any other method of redress which the parties may agree, in their absolute discretion, in any particular context, to be appropriate (MCLA, 1995 as amended, Schedule 1: Section 2.10c: 207-08). ' Such legislatively enshrined remedies are clearly risk reducing in their import. Baragwanath (1996) observes that the risks related to these stipulated events '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).

In sum, there is a strong argument to be put that the extent of the private sector partner's level of risk exposure is not as high as it should have been, given such potential remedial action; coupled with the relatively low down side reduction in actual IRR and the possibility that the actual concession period can be extended by extra 20 years.

Economic costs and benefits

For any road project, the key economic benefit is the value put on travel time savings. The Allen Consulting Group, in conjunction with Cox (1996) prepared the official cost benefit analysis for the Melbourne City Link Authority. In 2011, travel timesavings were estimated at \$187 million, or some 71%, of the total on road benefits of City Link. This figure was itself based on (i) traffic modelling done by Veitch Lister Pty Ltd for the City Link Authority; (ii) an hourly time value of travel savings of \$19.15; and (iii) 330 days per year where total traffic hours would be reduced by motorists using City Link in preference to alternative routes. The validity of the latter two figures has been questioned (Odgers and Wilson 1999). In brief, the use of a weighted average of \$19.15 per hour is very high when compared with rates applied for valuing travel time savings in other

studies (e.g. Pisato and Robinson 1999); (Hensher, Battelino et al. 1994) and with the weighted average value for VTTS of \$14.42, as adjusted to reflect changes in the CPI recommended by state road authorities. Using the lower figure of \$14.42 results in a 32% decrease in the total Net Present value of travel time savings projected by the Allen Consulting Group (Odgers and Wilson, 1999). The official cost benefit analysis of City Link also fails to consider differences in the value of travel time savings across various socio-economic groups (Sapkota 1999) given that no distributional impact analyses were undertaken by the Allen Consulting Group. Undertaking such a distribution impact analysis is strongly recommended by (Potterton 1997) in order to inform decision-makers 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. When asked why such recommended impact analyses were not conducted, the present writer was verbally informed that 'the client did not ask for them to be prepared.' One can only surmise the reasons for this lack of interest by the client, the Melbourne City Link Authority.

In the years following 2011, the value of these annual travel timesavings was forecast to increase at 4.25% per annum (ACG, 1996, p. 13). This figure is more than double the annual projected growth in overall traffic used by ACG in the official cost-benefit analysis of City Link. Such a disparity between the projected value of travel timesavings and overall growth in traffic volumes is counterintuitive, in that it implies that timesavings are independent of actual growth in traffic volumes. Its actual derivation is achieved by comparing the projected travel time savings in 2011 with those in 2001 and simply calculating the average annual percentage increase (see Allen,1995: 21-22). However, Allen Consulting Group points out unequivocally in the 1996 report that these two cost-benefit studies are not comparable, and use significantly different traffic models to underlie the economic evaluations (Allen and Cox 1996). One is forced to question the validity of the economic value projected the ACG for travel time savings post 2011, based on this noted incomparability between the two economic evaluations. Given the importance of this projected growth in travel time savings to the calculation of the overall economic benefits of City Link — and indeed for any road project — a more rigorous and empirically based approach to its derivation is clearly justified.

Even putting aside such methodological problems, (Newman and Kenworthy 1999) observe that 'time savings is found to be an unreliable indicator for urban transport as it is illusory and leads to costly transport systems due to car-dependence'. Analysis of data from an extensive international comparison of cities shows that there is no savings in travel time in cities with a substantial investment in roads to improve the average travel speed on its road system compared to transit-oriented cities (1999: 425).

Conclusions

This paper's two questions were:

1. have Melbourne's private transport users actually behaved in the way that Transurban forecast in its 1996 prospectus?
2. Has City Link delivered to the Victorian community the economic benefits that were forecast of it?

The first question is the easier to answer. As indicated by the analysis of actual traffic volumes during the period July to December 2001, City Link's acceptance by Melbourne's motorists to date has been considerably greater in the south and east of Melbourne than in the north and western suburbs. Volumes on the Western Link are still more than 26% below the projected average week day volumes. This is despite the introduction by Transurban of the 24 hour "Tulla" pass and week end passes. In order for the actual usage of City Link to meet or exceed the forecast volumes, Transurban will either have to offer more attractive incentives for residents of northern and western Melbourne to regularly use City Link; or the Victorian government will have to take steps to limit their ability to access alternative, non-tolled road routes. To its credit, Transurban is currently investigating initiatives to improve usage in Toll Zones 2 and 3 (Phillips 2002). Given that the second alternative mentioned could potentially trigger a claim under the Australian Trade Practices legislation one can only hope that such incentives will encourage more motorists to use City Link to by pass Melbourne's Central Activities District, as the Victorian government aimed for in the enabling City Link legislation (MCLA 1995, Schedule 1, p. 138).

Seeking a credible answer to the paper's second question is more difficult. The evidence presented does however raise serious questions about whether the substantial risks inherent in such a monumental and very long-term road infrastructure have been appropriately allocated between the Victorian government, representing the Victorian community, and Transurban City Link Limited, the private sector designer, builder, manager and legal owner of the spine of Melbourne's road network. In brief, the major concern is whether the Victorian government will be sufficiently compensated, via the ultimate encashment of the promissory notes that are being raised by Transurban for its substantial financial contributions to City Link, both during and after the construction phase of this BOOT scheme.

A second key concern is whether the actual quantum of financial risk that is being borne by the private sector consortium fair and appropriate given the potential financial returns and the very lengthy period in which those returns can be achieved. The original investors were attracted to City Link by the relatively very high real after tax equity return of 17.5% per annum that would have to be achieved before the Concession period could be reduced to the minimum period of twenty five and a half years (MLCA, 195: Schedule 1, p 97). Such a potential return is more than twice the historic yield on 10 year Treasury bonds. Investors have also been partly insulated from the negative effects of lower than

projected traffic usage by Transurban's legislated approval to increase toll fees by the greater of the quarterly increase in the Consumer Price Index or 4.5% per annum converted to a quarterly compound rate plus one (MCLA, 1995, Schedule 1 p. 289). This investor protection is considerable, given the relatively inelastic demand for road usage. Finally investors have been protected from the financial impacts of a range of commercial risks through the specification in the City Link legislation of numerous Material adverse effects, the risks of which are borne by either City Link users or the Victorian community.

City Link has radically altered the private transport system in Melbourne, and will over the next several decades continue to form the spine of the city's private vehicular transport. The current Victorian government has decided to wind up the Melbourne City Link Authority. It is unclear at this stage how, and by which arm of government, the administrative and other requirements for the long-term management of this most critical transport infrastructure project will be managed on behalf of the Victorian community. Given the analysis presented in this paper about both the substantial costs and risks borne by the government, and the concerns it raises about the relative allocation of risks between the government and Transurban, this writer hopes that a sufficiently vigilant and adequately resourced management protocol is established as soon as practicable.

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