



ESSENTIAL ECONOMICS

Melbourne Airport Rail Link

The Key to a Global City?

Discussion Paper

by

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INTRODUCTION

Background

This discussion paper has been prepared as a contribution to the public debate relating to the need, or otherwise, for a new rail link to be built to Melbourne Airport. In particular, the discussion paper considers the status of Melbourne as a "global city", and the experience of comparable global cities in providing rail links to their major airports. The paper also considers a number of factors which have changed since 2002 when the Melbourne Airport rail link was last considered.

Summary of Findings

Melbourne's status as a global city could be undermined by its lack of an airport rail link. At present, 34 of 52 comparable global cities have existing airport rail links, with a further 10 cities having a rail link under construction or as committed policy. There is international evidence to suggest that poor airport transport links can undermine investment and business reputation.

The Globalisation and World Cities (GaWC) Research Network based in Loughborough University in the UK classifies global cities according to a sliding scale of "Alpha" and "Beta" and "Gamma" cities. Melbourne is classified as a "Beta +" world city.

By late 2011, Melbourne will be one of just two Beta+ rated cities without an airport rail link. This places Melbourne Airport and the entire Victorian economy at a competitive disadvantage to other cities with cheaper and more efficient transport options for air travellers. This is particularly true when considering the high cost of transport to Melbourne Airport relative to the cost of comparable global cities providing airport rail links.

Passenger traffic at Melbourne Airport is forecast to grow strongly over at least the next 10 years, and without provision of an alternative transport mode, existing road-based infrastructure is likely to be increasingly congested. The rapidly increasing popularity of rail-based public transport in Melbourne, and the experience of the Brisbane and Sydney airport rail links, suggests that the justification for deferring the Melbourne airport rail link is based on outdated analysis and inputs.

The Regional Rail Link project - jointly funded by the State and Federal Governments - has potential to reduce the up-front cost of delivering an airport rail link for Melbourne which has been proposed since 1963. It is time to reconsider the opportunity for a new rail link to Melbourne Airport.

1 GLOBAL CITIES AND AIRPORTS

1.1 What is a Global City?

Global cities are urban areas which form an integral part of the globalised world economy. These cities are typically characterised as:

- having substantial economic power including a strong representation of high value sectors including finance, banking, professional services and creative services
- being administrative, governance, research and cultural centres of international status
- having a large population
- providing well-established and high quality physical infrastructure
- cultivating an outward-looking political and social culture.

Melbourne is often referred to as a "global city". For example, the status of Melbourne as a global city is used to justify policies including the State Government's Transport Plan, as well as a range of other government and private sector initiatives.

Although there is no official classification or definition for global cities, a well accepted hierarchy has been developed by the Globalisation and World Cities (GaWC) Research Network based in Loughborough University in the UK. GaWC classifies global cities according to a sliding scale of "Alpha" and "Beta" and "Gamma" cities.

According to the GaWC classification, Melbourne is considered a "Beta +" world city. This places Melbourne in the fifth rank of global cities, behind the four classes of Alpha cities (which includes Sydney).

Significant public and private policy support exists for Melbourne to enhance its status in this hierarchy of global cities. This outcome would improve Melbourne's ability to attract the economic and social benefits associated with a vibrant and outward looking global city.

1.2 Importance of Airports to Global Cities

Airports are one of the key pieces of infrastructure which support the role and function of global cities. Growth in air travel has been a very significant factor in the globalisation of the world economy over the past four decades and airports are important "gateways" linking cities to the global economic system.

Global growth in airline passenger numbers has averaged 5% over the past 30 years. Growth of 4% to 5% annually is forecast for at least the next 10 to 15 years according to industry forecasts (source IATA).

An efficient airport with high volume capacity is particularly important for global cities such as Melbourne which are relatively remote (in a geographic sense), and for which air travel is often the only reasonable transport mode.

Globalisation is as much about the efficient movement of people as it is about the efficient movement of goods and services. It is a competitive advantage for global cities to provide high quality airport infrastructure, including efficient transport links between airports and urban areas. Cities that do not have (or are not perceived to have) appropriate transport links to their major airport will be at a competitive disadvantage to their peers.

There is evidence to suggest that global cities which are perceived as having poor transport links and congestion at their major airports are less attractive as places for corporate headquarters and other investment directly linked to the global economy. Congestion on transport links to airports was the 2nd most cited reason for businesses leaving New York City in the 30-year period before the Airtrain opened at JFK Airport in 2003 (Florida International University).

1.3 Melbourne Airport Rail Link Proposal

A rail link to Melbourne Airport has been proposed since 1963. In early 2002, the construction of the rail link was postponed indefinitely due, in part, to relatively low patronage forecasts prepared by Booz Allen Hamilton in a study undertaken in 2001.

The 2001 study assumed a forecast market share of between just 3% and 6% for an airport rail link. This market share is well-below the market shares currently being achieved by the Brisbane and Sydney airport rail links of between 10% and 11% (Airtrain, Sydney Airport Corporation).

Importantly, the 2001 analysis has a number of notable deficiencies when applied to current circumstances.

The 2001 analysis takes into account forecast negative impacts on air travel associated with the collapse of Ansett and the September 11 attacks, events which have subsequently proven to have had a minimal impact on growth in air travel in Australia.

Since the report was prepared, a significant shift in community demand towards rail-based public transport has occurred. Train patronage in Melbourne has increased to over 210 million trips in the year to June 2009 compared to approximately 130 million trips per annum in 2001. Rail patronage per capita in Melbourne is now estimated to be higher than in Sydney (Metlink).

The \$4.3 billion Regional Rail Link project will add new rail capacity between Southern Cross Station and Sunshine and therefore significantly reduce the cost of providing a new airport rail link using the preferred Albion corridor which runs alongside Melbourne Airport..

These factors in combination suggest that the potential market share achieved by a rail link to Melbourne Airport is now significantly higher than that originally adopted in the 2001 analysis. Furthermore, the up-front capital cost of providing an airport link is potentially reduced by works already approved for the Regional Rail Link project.

In effect, the original 2001 analysis can no longer be considered a suitable basis for determining that an airport rail link in Melbourne is not feasible.

A number of non-rail related initiatives are now proposed as an alternative to a Melbourne Airport rail link. This includes:

- an upgrade to the existing SkyBus service
- Smart Bus service from Broadmeadows to Melbourne Airport
- widening and upgrade of Tullamarine Freeway.

All the above options rely on existing road-based infrastructure.

1.4 Why Consider a Rail Link for Melbourne Airport

International experience indicates that a wide range of benefits can be derived from the provision of an airport rail link. These include:

- improved perception and status of cities with an airport rail link for existing and potential international investors and business partners
- replacement of airport parking space with higher-order commercial uses that generate greater employment and economic activity
- ability for airport users to avoid road-based traffic congestion
- reduced road-based traffic congestion by providing an alternative mode of transport
- convenience of direct access to the public transport network by airport users
- environmental benefits of rail-based over road-based transport
- ability to serve passengers, workers and other airport users
- cost competitiveness for airport users relative to other alternative transport modes
- provision of a safe, comfortable and reliable transport mode.

For many major airports growth in air travel is limited by land-based capacity constraints. Increasingly, these constraints include the physical capacity of airports to provide a sufficient level of accessibility to the geographic area which they serve in order to meet growing passenger demand. For many global cities, this issue requires substantial investment in private and public transport infrastructure.

There is increasing evidence to suggest that without the provision of a rail link to Melbourne Airport, land-based transport constraints associated with congestion on CityLink and the Tullamarine Freeway and the lack of alternative transport modes, has the potential to negatively impact on Melbourne's status as a global city.

2 AIRPORT RAIL LINK COMPARISON

2.1 Provision of Airport Rail Links

A comparison of cities ranked Beta + and above in the GaWC classification system shows that at present a total of 34 out of 52 cities have an airport rail link, including 7 out of 11 cities in the Beta + category which includes Melbourne.

A further 4 cities (Bangkok, Washington, Taipei and New Delhi) currently have new rail links to their major airport currently under-construction. This does not include the cities of Dubai, Barcelona, Milan and Madrid which have a **2nd** airport rail link currently under-construction. Tokyo's **3rd** airport rail link opens this month.

Table 2.1 Global Cities with Airport Rail Link, July 2010

Classification	Total	City with Airport Rail Link	Under Construction
Alpha World Cities ++	2	2	0
Alpha World Cities+	8	8	0
Alpha World Cities	9	6	0
Alpha World Cities -	22	11	2
Beta World Cities+	<u>11</u>	<u>7</u>	<u>2</u>
Total	52	34	4

Source: Essential Economics, GaWC, published sources

An airport rail link can now almost be considered "standard practice" for global cities and cities which aspire to be integrated into the global economy. By late 2011 Melbourne will be one of only two Beta+ global cities without an airport rail link. The only other Beta+ city without an airport rail link by 2011 - Bogota in Colombia, a city with no commuter rail network - has an existing high capacity dedicated busway serving the airport.

In comparative terms, Melbourne's status as a global city is undermined by the lack of an airport rail link.

Of the airport rail links identified in comparable global cities, there are three broad categories:

1. Dedicated fast rail link - these are airports which are connected to their CBD by a dedicated fast rail link, or which are integrated into an existing fast rail network (e.g. Shanghai, Amsterdam)
2. Dedicated express rail link - a standard rail link which provides an express service to the CBD or other central location (e.g. London, Vienna)
3. Standard Suburban Rail Connection - links the airport directly into the standard suburban passenger rail network (e.g. Athens, Zurich).

A total of 12 global cities have two airport rail links. Typically, this includes a suburban rail connection and either an express or fast rail link (e.g. London).

2.2 Comparison with Melbourne

By the end of 2012 Melbourne will be one of just 14 out of 52 global cities rated Beta + and above without an airport rail link. This compares Melbourne unfavourably with cities such as Atlanta which is renowned internationally as a car-based metropolitan area, yet has a well-established airport rail link.

In order to understand any underlying factors which may influence the lack of an airport rail link in Melbourne, it is appropriate to provide a comparison of Melbourne and its global city peers on the basis of other performance criteria.

Airport Passengers

Melbourne Airport currently generates approximately 25 million passenger movements per annum. This represents growth of nearly 40% on the 18 million passengers that used the airport annually when the airport rail link project was postponed indefinitely in early 2002.

Melbourne Airport employs a total of approximately 12,000 people. This is forecast to increase to approximately 13,000 people by 2013. Substantial amounts of employment are also located in areas adjacent to the airport (Melbourne Airport Transport Plan). These employees have transport requirements which are in addition to passenger-related transport.

A total of 26 cities classified as a Beta+ global city or above have a major airport with higher passenger numbers than Melbourne Airport. In contrast, a total of 25 cities rated Beta+ or above have a major airport with a lower passenger count than Melbourne Airport. The data shows that Melbourne Airport has a total passenger count which is generally comparable to its global city peers.

Of the 26 cities with a higher airport passenger count, a total of 22 cities currently have an airport rail link, with airport rail links also under-construction at Bangkok (due to open September) and Washington. Toronto has project approval for a new airport rail link, while Los Angeles has plans to extend into the main airport terminal building an existing rail line which currently passes along the airport boundary.

Of the 25 cities with a lower passenger count, 12 have an existing rail link. Six other cities currently have airport rail links either under construction (New Delhi and Taipei) or with project commitment.

Table 2.2 Comparison of Melbourne Airport with Global City Peers, Passenger Count 2010

Passenger Count	Number	Has Existing Rail Link	Has Rail Link Under Construction/Proposed
Higher than Melbourne	26	22	4
Lower than Melbourne	25	12	6

Source: Essential Economics, published sources

This analysis shows that although there is a general link between the number of passengers using major airports and the construction of airport rail links, there is no indication that Melbourne Airport generates levels of passenger traffic that are too low to support an airport rail link. Six airport rail links are currently under-construction, or proposed, for airports in comparable global cities that generate fewer passenger trips than Melbourne.

Population

In terms of population, a comparison has been made on the basis of the urban population of the comparable global cities. Estimating the population of an urban area, as opposed to an official city or metropolitan boundary, is always difficult due to the different geographic classifications and data availability. For consistency indicative estimates are used from the French demographic website Population.net which collates estimates based on available data sources.

Of the 37 cities with a higher urban population than Melbourne, a total of 25 have an airport rail link. A further 7 of these cities have airport rail links either under-construction or with project commitment.

Table 2.3 Comparison of Melbourne Airport with Global City Peers, Urban Population 2010

Urban Population	Number	Has Existing Rail Link	Has Rail Link Under Construction/Proposed
Higher than Melbourne	37	25	7
Lower than Melbourne	14	9	3

Source: Essential Economics, published sources

Of the 14 comparable global cities with an urban population lower than Melbourne's, 9 have existing airport rail links, with a further 3 either under-construction or with project commitment.

Cost

Of particular importance is an international comparison of the cost of using airport rail links relative to the current cost of travelling to Melbourne Airport from the CBD. A key advantage of airport rail links is the value for money alternative they provide for both air travellers and airport employees relative to road based transport modes.

Currently, the cost for a travelling adult going to or from the CBD to Melbourne Airport is estimated to be approximately:

- Taxi - \$50 including tolls and airport charge
- Car - \$40 including tolls, petrol and allowance for 2 days parking
- Skybus - \$16

This cost of accessing Melbourne Airport by taxi and car is more expensive than using any other of 33 international airport rail links for which a cost has been identified based on official web sites and other publicly available data as of July 2010. These costs have been converted into Australian dollars at exchange rates applying at the time of writing.

Table 2.4 Comparison of One-Way Adult Trip to/from Airport and CBD

Transport Mode	Melbourne Cost	No. of Global City Rail Links More Expensive	City with More Expensive Rail Link
Taxi	\$50	0	-
Car (2 days stay)	\$40	0	-
Skybus	\$16	3	Tokyo, Milan, Stockholm

Source: Essential Economics, published sources

Note: Comparison with 33 rail links in other global cities. Cheapest rail link identified in cities with 2 or more airport rail links.

At \$16 for an adult fare, the Skybus is more expensive for a one-way trip than 30 of the 33 airport rail links for which a standard adult one-way trip to or from the CBD was identified.

Of the 33 rail links analysed, the 10 cheapest for an adult one-way ticket to the CBD include the American cities of Atlanta, San Francisco and Chicago with fares under \$3. The most expensive rail link is in Stockholm at \$29.50, well-above the cost of a one-way trip to Narita Airport in Japan of approximately \$20.

Table 2.5 10 Cheapest and 10 Most Expensive Airport Rail Links (Expressed in \$AUD)

10 Cheapest Cities	Cost (AUD\$)	10 Most Expensive Cities	Cost (AUD\$)
Mexico City	0.3	Stockholm	29.5
Istanbul	1	Tokyo	20.1
Dubai	1.4	Milan	16.2
Budapest	2	Johannesburg	15.1
Bucharest	2.1	Kuala Lumpur	12.4
Singapore	2.2	Paris	12.4
Atlanta	2.3	London	12.1
Chicago	2.6	Hong Kong	11.8
San Francisco	2.9	Athens	8.8
Madrid	2.9	Rome	8.1

Source: Essential Economics, published sources

In economic terms, the higher cost of accessing Melbourne Airport results in higher business and consumer costs, with flow-on effects across the Melbourne and Victorian economy. This excludes "hidden costs" associated with difficult to quantify factors such as reputation loss for international investment and the lower perception of Melbourne as a place to visit for tourists and other visitors.

3 IMPLICATIONS FOR MELBOURNE

1. Global cities which are perceived as having poor transport links and congestion at their major airports are less attractive as places for corporate headquarters and other investment directly linked to the global economy. There is the potential for a lack of accessibility to Melbourne Airport associated with a reliance on road-based transport options to undermine the role and status of Melbourne as a business location and global city.
2. Melbourne is notable for the lack of a rail link to Melbourne Airport when compared with other global cities. At present, 34 of the 52 cities ranked as a Beta+ global city or above by the GaWC have an existing airport rail link. A total of 12 of these cities have **two** airport rail links comprising a mix of fast, express and standard suburban services.
3. Other global cities are at various stages of planning for the introduction of new airport rail links. Ten cities have either airport rail links under-construction, or have firm project and planning commitments. Other cities have proposals at various stages of advancement and planning, including Melbourne, which has been considering the introduction of a new airport rail link since 1963.
4. Passenger traffic at Melbourne Airport has expanded to approximately 25 million per annum, an increase of nearly 40% since early 2002 when the airport rail link was postponed. Over the next ten years, total passengers are forecast to increase to between 35 million and 40 million per annum. This is more than double the 2002 figure. In addition, substantial growth in employment has, and is forecast to be, generated at Melbourne airport and on adjacent land; currently, the airport has a workforce of some 12,000 people, many of whom would value a rail link for their work journey
5. Growth in visitation to the airport and environs will be potentially constrained by a lack of accessibility provided by existing road-based infrastructure. This highlights a growing need to consider alternative transport choices for airport users.
6. Excessive road congestion which limits access to Melbourne Airport will have negative consequences across the metropolitan and state economy. Many of these negative economic impacts are not easily identified in a traditional cost-benefit analysis framework which can only focus on measurable outputs. Likewise, positive economy-wide business and social impacts are difficult to quantify.
7. Other global cities, including Brisbane and Sydney in Australia, have high capacity rail transport links which eliminate a reliance on road-based transport and provide choice for airport users (including employees).
8. Both the Sydney and Brisbane airport rail links are experiencing patronage growth and achieve market shares above that assumed for Melbourne in the 2001 Melbourne rail link study. Despite initial patronage forecasts not being achieved, both the Sydney and Brisbane airport links are now a critically important part of the transport network serving the airports, with this importance expected to increase in the future. The Brisbane airport rail link operators recently announced the initiation of dividend payments to shareholders.
9. Many airport rail links in other global cities simply integrate into existing suburban rail networks. This can reduce set-up and operational costs, as well as the costs for rail link users. There is no specific need for a potentially more expensive dedicated high-speed or express rail

link to Melbourne Airport, as long as travel times and service frequencies meet user expectations.

10. Melbourne Airport users are at a significant cost disadvantage to other global cities which provide cheaper rail-based transport links to their airport. For example, a one-way trip to O'Hare Airport in Chicago is just \$2.90 relative to a cost in Melbourne of \$16 on the existing SkyBus service. This higher cost of transport at Melbourne Airport is potentially lucrative for the operators involved, but can have broader economic impacts associated reduced economic and business competitiveness. More difficult to quantify "hidden costs" can also occur including a reduced reputation for Melbourne as a value-for-money holiday destination and a lack of a positive image for Melbourne as a global city.

MELBOURNE AIRPORT RAIL LINK
THE KEY TO A GLOBAL CITY?

Classification	Urban Population	Major Airport	Passenger Traffic	Airport Rail Links
Alpha World Cities ++				
London	12,500,000	Heathrow	66,000,000	2
New York	26,000,000	JFK	46,000,000	1 - 2nd proposed
Alpha World Cities +				
Hong Kong	9,000,000	Hong Kong International	46,000,000	1 - 2nd proposed
Paris	12,000,000	Charles De Gaulle	58,000,000	2
Singapore	6,500,000	Changi	37,000,000	1
Tokyo	37,500,000	Narita	35,500,000	2 - 3rd opens July 17th
Sydney	4,500,000	Kingsford Smith	34,000,000	1
Milan	7,000,000	Malpensa	17,500,000	1 - 2nd under construction
Shanghai	18,000,000	Pudong	33,500,000	2
Beijing	12,000,000	Beijing Capital	65,300,000	1
Alpha World Cities				
Madrid	6,500,000	Barajas Airport	49,000,000	1 - 2nd under construction
Moscow	15,000,000	Domodedovo International	20,500,000	2
Seoul	22,500,000	Incheon International Airport	30,000,000	1
Toronto	5,500,000	Toronto Pearson	29,000,000	1 proposed
Brussels	2,000,000	Brussels Airport	17,000,000	1
Buenos Aires	14,000,000	Ministro Pistarini	8,000,000	0
Mumbai	21,500,000	Chhatrapati Shivaji	24,500,000	0
Kuala Lumpur	7,000,000	Kuala Lumpur	29,500,000	2
Chicago	11,500,000	Chicago O'Hare	64,500,000	2
Alpha World Cities -				
Warsaw	2,500,000	Warsaw Frédéric Chopin	8,500,000	0
São Paulo	21,000,000	São Paulo-Guarulhos	21,500,000	1 under construction
Zürich	1,000,000	Zurich Airport	22,000,000	1
Amsterdam	6,600,000	Amsterdam Airport Schiphol	46,000,000	2
Mexico City	23,500,000	Mexico City	24,000,000	1
Jakarta	18,500,000	Soekarno-Hatta	36,500,000	1 proposed
Dublin	1,600,000	Dublin Airport	20,500,000	1 proposed
Bangkok	10,500,000	Suvarnabhumi Airport	40,500,000	1 - opens August 2010
Taipei	8,500,000	Taiwan Taoyuan	21,500,000	1 under construction
Istanbul	14,500,000	Atatürk	30,000,000	1
Rome	4,000,000	Leonardo da Vinci-Fiumicino	35,000,000	2
Lisbon	2,500,000	Lisbon Portela	13,500,000	1 proposed
Frankfurt	3,000,000	Frankfurt am Main	51,000,000	2
Stockholm	2,000,000	Stockholm-Arlanda	16,000,000	2
Prague	1,500,000	Prague Ruzyně	11,500,000	1 proposed
Vienna	2,000,000	Vienna	18,000,000	2
Budapest	2,500,000	Budapest Ferihegy	8,000,000	1
Athens	4,000,000	Athens	16,000,000	2
Caracas	4,500,000	Simón Bolívar	9,000,000	0
Los Angeles	18,500,000	Los Angeles	59,000,000	0 - see note
Auckland	1,500,000	Auckland	13,000,000	0
Santiago	6,500,000	Comodoro Arturo Merino Benítez	9,000,000	0
Beta World Cities +				
Washington	5,000,000	Washington Dulles	25,000,000	1 under construction
Melbourne	4,000,000	Melbourne Tullamarine	25,000,000	0
Johannesburg	5,000,000	OR Tambo	18,000,000	1
Atlanta	5,500,000	Hartsfield-Jackson Atlanta	88,000,000	1
Barcelona	5,000,000	Barcelona	27,500,000	1 - 2nd under construction
San Francisco	7,500,000	San Francisco	33,500,000	1
Bogotá	8,000,000	El Dorado	15,000,000	0 - dedicated busway
Tel Aviv	3,500,000	Ben Gurion	11,500,000	1
New Delhi	18,500,000	Indira Gandhi	24,000,000	1 under construction
Dubai	2,500,000	Dubai	41,000,000	1 - 2nd under construction
Bucharest	2,000,000	Henri Coandă	4,500,000	1 - upgrade proposed

Source: Essential Economics and published sources

Proposed rail link is defined to include proposals with policy support, advanced planning completed and actual or expected project commitment