

Synthesising Australia: National Integration in a Dynamic Asia-Pacific Economy

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Abstract:

In a year when the Federal Government has at least recognised the need for massive spending on Australia's infrastructure, it is timely to move beyond the preoccupation with better management of existing infrastructure to discussion of the problems of national integration. Consideration is given here to the impact of international trends upon Australia's spatial economy since the early 1970s. Asia-Pacific container, air passenger and telecommunications networks are examined as the context for pinpointing deficiencies in Australia's domestic transport system. The paper suggests how Australia can take advantage of current trends in the global economy to restructure the domestic spatial economy in line with socio-economic objectives and constitutional constraints.

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Introduction

Development has become almost a 'dirty word' in Australia in recent decades. Any proposal for major infrastructure investment is treated with great suspicion. The presumption is that the need for new investment can be avoided by better management of existing infrastructure. It cannot be denied that much of Australia's infrastructure and, especially its railways, has not been well managed. It is also true that proposals for new infrastructure are sometimes unrealistic. However, better management alone will not be enough to sustain an internationally competitive Australia into the twenty-first century.

In the nineteenth century Australians were very conscious of the 'tyranny of distance' and energetically applied the new transport and communications technologies of railways, steamships, tramways and telegraphs to achieve a minimal degree of economic integration between coastal colonial cities and their hinterlands (Blainey, 1966). Since Federation, however, Commonwealth and State governments have balked at investing the huge sums needed to extend and integrate these separate transport and communications networks into a national system of international standard. Australia's rail systems are still struggling to emerge from the late nineteenth century. The road system is still inferior to that of the United States in the 1950s. Even in 1992 Australia has yet to complete a divided expressway between Sydney and Canberra, let alone as far as Melbourne. Main international airports are still in a 1970s time warp.

Without an integrated national economy, Australia has been at a disadvantage in responding to rapid economic growth in the Asia-Pacific region since the 1970s. International market forces have been transforming Australia's spatial economy but the impact has been confined to certain segments. Within the constraints of existing infrastructure, this is giving rise to some very distorted outcomes, of which the sprawl and congestion of Greater Sydney is a good example. The challenge for governments is to harness these dynamic forces by identifying key infrastructure projects that will better distribute the benefits throughout the national economy.

In a year when the Federal Government has at last recognised the need for heavy spending on Australia's transport infrastructure, it is timely to re-examine some fundamental issues of transport and communications policy. First, how can a spatial dimension be reintroduced to national economic policy? Secondly, how is the dynamic international environment impinging upon spatial patterns in Australia? Thirdly, how would long-term strategic planning help to identify the investments in transport infrastructure that would facilitate adaptation to the changing international environment?

The paper begins with identification of the mind set that has discouraged the reintroduction of a spatial dimension in economic policy. This leads to a discussion of the problems of national integration. Consideration is then given to the impact of internationalisation upon Australia's spatial economy since the early 1970s. An examination is made of Asia-Pacific container, air passenger, air freight and telecommunications networks and some of the corresponding deficiencies in the domestic transport system are identified. Next, ways are suggested for Australia to take advantage of current trends in the global economy to restructure the domestic spatial economy in line with socio-economic objectives and constitutional constraints.

Conceptual frameworks

A worsening lag in Australia's transport infrastructure stems from a mind set which has failed to recognise distance as a key dimension of policy. The prevailing ideology is to rely upon 'the market' to allocate investment spending: the role of policy is to achieve a 'level playing field' and to ensure that private firms receive correct 'market signals'. In cases where public investment is unavoidable, it should be allocated according to strict cost-benefit criteria. However, this procedure is logically flawed when applied to major, long-term infrastructure projects. First by its nature, infrastructure spending tends to generate large externalities which are hard to quantify in present value terms. Secondly, major projects are non-marginal, so that market prices may not be appropriate signals. Thirdly, projects which result in a significant spatial redistribution of economic activity lead to sequential effects whose long-term consequences are almost unknowable. Cost-benefit analysis is therefore an incomplete and even misleading guide.

The recent controversy over the Very Fast Train epitomised the limitations of the cost-benefit approach. There was a failure to appreciate that the VFT would restructure land use within the Sydney-Canberra-Melbourne Corridor and thereby generate social benefits which would justify some level of public subsidy. At the same time—and inconsistently — there was an ideological refusal to allow promoters to offset the cost of investment by recouping a share of the increment in land values — a very common means of financing nineteenth century railways. An opportunity was thereby lost to achieve an economic and psychological breakthrough in the integration of southeastern Australia. The impact would have been akin to that brought about by the Shinkansen in Japan after 1964.

Another sorry example has been the procrastination over more than a decade in making a decision on the future of Sydney's airport facilities. There has been neither a rigorous application of short-term cost-benefit analysis nor strategic planning for Greater Sydney and the development of Australia's tourist industries. Anyone arriving from Singapore's Changi Airport or even Bangkok's Don Muang Airport immediately notices how tawdry is Australia's main international gateway. Departure facilities are even more primitive. Yet tourism is meant to be a leading sector.

Despite the inadequacies of cost-benefit analysis, the allocation of public funds between competing large projects requires some method of determining priorities. Our contention is that Australia, no less than Japan, Taiwan or Indonesia, would benefit from a national spatial strategy to set parameters for spatial decision-making. Preparation of such a strategy would involve three interactive processes: data collection, modelling, and (transparent) political negotiation. Once the strategy has been agreed upon, the optimal form and sequencing of investments can be worked out to minimise the present value of outlays. To the extent that private sector investment is also required, the national spatial strategy would also set the parameters for correct price signals. This paper suggests some of the elements which should be taken into account in formulating a national spatial strategy.

National integration

Australian policy-makers seem to assume, at least by default, that the economy is concentrated like a city-state at a single point. The reality, of course, is that Australia's population of 17 million people is spread in a narrow arc around 19,500 km of coastline. The 'national economy' is really a loosely-connected set of seven state economies (including the Northern Territory), most economic activity being centred in the respective capital city. Hence, the national market is highly fragmented. The achievement of economies of scale, especially in manufacturing, is made even more difficult by systems of state preference. That economic integration has not been embraced as a national objective is perhaps attributable to the survival of separate state governments. Australians remain deeply ambivalent about the role of the national government.

Though the integration of a national market depends vitally upon transport infrastructure to minimise the friction of distance in terms of time and cost, Australian governments were remarkably slow to appreciate the need for a national land transport system. Up to the time of the First World War, Australia's land transport systems were almost entirely focused on the capital cities of each state with shipping providing the main interstate passenger and freight connections. Despite the completion of the Trans-Continental Railway in 1917, the standard gauge link between Sydney and Brisbane was not completed until 1930 and the Sydney-Melbourne and Perth-Sydney links were delayed until 1962 and 1970 respectively — the link between Melbourne and Adelaide is only now being undertaken. The integration of interstate trade by land occurred not because of, but in spite of, government. Following upon the High Court Judgment of 1953, which removed interstate truck movements from state control, road freight boomed at the expense of rail and, especially coastal general cargo shipping. State governments were extremely reluctant to spend funds on upgrading interstate highways. Not until 1980 did the Commonwealth Government accept responsibility for completing an all-weather, national highway system to heavy vehicle standards.

Since the 1980s, there has been general recognition that Australia's high-cost domestic transport system has impeded international competitiveness. Allocative inefficiencies have been identified and some progress made towards overcoming them. This process of micro-economic reform obviously needs to continue. However, the poor articulation of the domestic transport system is also a cause of inefficiency through worsening capacity constraints. Without heavy investment in modern land transport infrastructure, Australia will be handicapped in responding to the opportunities provided by rapid growth in the Asia-Pacific region. The need to focus such a program of infrastructure spending is the rationale for a national spatial strategy that takes explicit account of the evolving international context.

Internationalisation

Under Australia's federal system, there is an expectation that economic growth will be spread evenly across the country. In practice, this is impossible to achieve because international pressures impinge unevenly upon different parts of the national economy and some states or cities adjust better than others. Since the 1970s, growth has been most rapid in cities, such as Sydney, Brisbane and Perth, which have been more outward looking and closely integrated with the international economy. Growth has lagged in Adelaide and Hobart whose overseas links have long been weak. In recent decades, Melbourne's growth has also lagged, reflecting the city's inability to maintain the international links which formerly had established it as Australia's leading financial centre.

The most important international trend affecting Australia over the past twenty-five years has been the emergence of the dynamic economy of the Asia-Pacific region. While British entry into the European Economic Community disrupted traditional trading patterns and financial flows, the rise of the Asia-Pacific region generated new opportunities. This was first manifest in the early 1960s with the boom in mineral exports which gave a new dynamism to the economies of Queensland and Western Australia. In the 1970s, Sydney began to emerge as Australia's gateway to the Asia-Pacific region and the hub for passenger transport and communications. During the 1980s, Sydney became a favoured destination for international tourists and, by the end of the decade, the Gold Coast and Cairns had become popular Japanese resorts. Simultaneously, Perth and, to a lesser extent, Darwin were able to tie into the now buoyant economy of Southeast Asia.

This uneven development has resulted in differential pressures upon infrastructure. Most striking has been the rapid population growth, urban sprawl and congestion of Greater Sydney, which can no longer be contained within the Cumberland Plain. Although functionally ranking as a world city, Sydney still lacks the transport infrastructure to accommodate that role. It has neither a good road system nor a good public transport system. Its international airport is an embarrassment. It lacks contemporary high-speed, inter-city road and rail connections. Redressing these imbalances, however, has not been a national priority. Funds which could have been directed to upgrading infrastructure where it was most needed have been portioned out to other states to upgrade transport systems already enjoying excess capacity.

The mismatch between international demands and the transport and communications infrastructure has made it harder to integrate Australia's dispersed economic activities into the Asia-Pacific economy. The lack of good inter-city road and rail links has handicapped the development of Brisbane and Perth-Fremantle as alternative gateways for international container traffic. Each state continues to sustain its own port to supply its own immediate hinterland. The level of natural protection conferred by high inter-city transport costs has also promoted a continuing fragmentation of manufacturing production at sub-optimal scale.

Asia-Pacific networks

Since the early 1970s, the rapid growth of individual economies within the Asia-Pacific region has been accompanied and stimulated by the articulation of supra-national transport and communications networks. Whereas Asia's leading cities have positioned themselves and competed with each other to become regional hubs, Australian cities have not made the necessary strategic investments. Analysis of these networks highlights the opportunities for and constraints upon the integration of Australian cities.

Air transport

The key feature of the Asia-Pacific air network is the north-south, high-density corridor running from Tokyo to Taipei, Hong Kong, Singapore and Jakarta. Reinforcing this pattern is the importance of Tokyo, Hong Kong, Bangkok and Singapore as network hubs for long-distance international flights (Fig 1).

Because of its geographic location Australia cannot hope to compete as a transit hub for through traffic. Apart from the local demand for overseas flights, the level of air traffic to Australia is a function of its attraction and competitiveness as a destination. The growth potential for tourist travel is therefore much greater than for business travel.

Container shipping

Rapid growth in Northeast Asia and the generation of massive general cargo flows has given rise to giant container ports in Japan, Korea, Taiwan and Hong Kong (Fig 2). As Southeast Asia has emerged as an industrialising region, Singapore has also become a world container port while Hong Kong and Kaohsiung also serve as trans-shipment ports or Southeast Asian cargoes, especially on trans-Pacific routes. This arrangement has allowed ship operators to maximise economies of scale by linking Western Europe, Northeast Asia and North America with very large mother ships of up to 4000 TEUs.

Australia is a major cargo generator but most consists of minerals and other bulk commodities which are not containerised. Total container traffic (about 1.8 million TEUs in 1990) is modest by world standards and only about one-third of the traffic handled by Singapore or Hong Kong (Table 1). Moreover, this trade is spread across six container ports of which the largest, Melbourne, handled less than 700,000 TEUs per annum. The rate of growth is also slow, reflecting the sluggish performance of the Australian economy and the stagnation of the manufacturing sector.

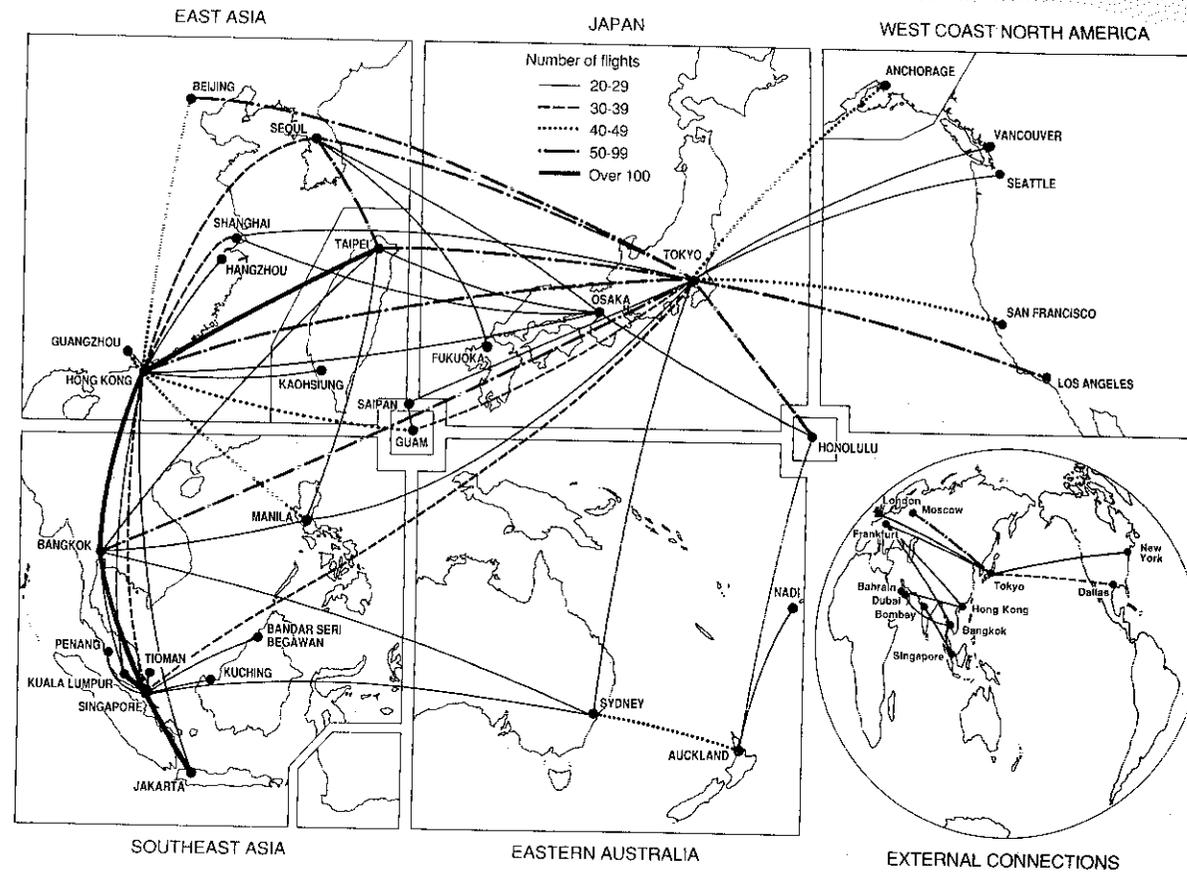


Figure 1. Twenty or more Non-stop Air Passenger Flights in the Pacific Economic Zone, August 1989
 (Source: Rimmer, 1991).

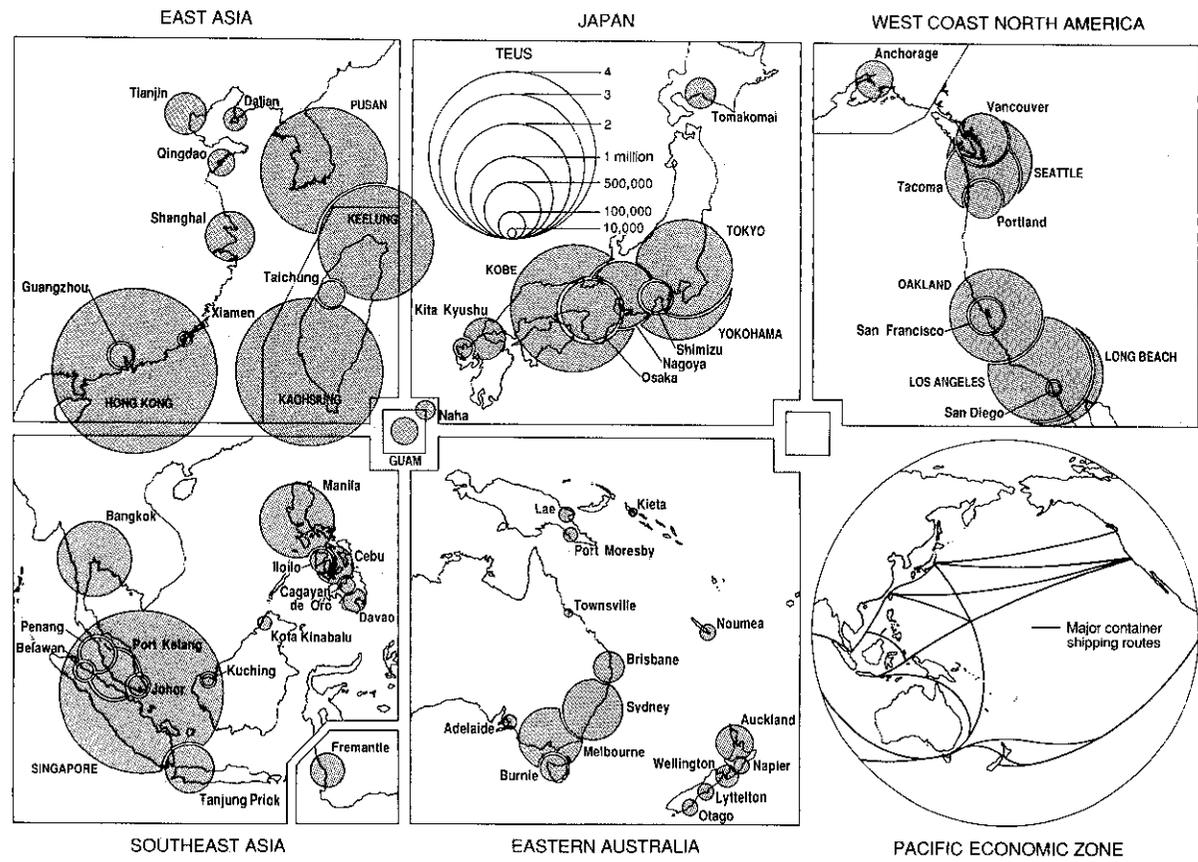


Figure 2. Container Ports and Main Container Shipping Routes in the Pacific Economic Zone, 1988. Ports with more than 1 million TEUs are in capital letters (Source: Rimmer, 1991).

Table 1 Total container traffic handled by leading Australian and Asian ports, 1988-90 (thousand IEUs)

Port	1988	1989	1990
Singapore	3,375	4,374	5,220
Hong Kong	4,033	4,464	5,101
Kaohsiung	3,083	3,383	3,397
Pusan	2,065	2,159	2,375
Keelung	1,710	1,787	1,841
<i>Australia</i>	1,467	1,648	1,767
Melbourne	615	666	669
Sydney	437	516	596
Brisbane	119	139	144
Fremantle	113	120	128
Adelaide	30	39	45
Others	153	168	185

Source: CI, 1991; Ross Robinson (pers. comm.).

Telecommunications

The explosion in international telephone calls during the 1980s saturated the capacity of satellites and microwaves and gave rise to a new growth network of fibre-optic cables. Although satellites and microwaves will continue to be used, the new network will cater to the growth in business services including the next generation of FAX, high-definition television, international video conferencing, and value-added services for financial transactions and computer-aided design (Rimmer, 1991: 14). In 1992, Australia became the final link in this network in the Asia-Pacific region (Fig. 3). As in other countries it is difficult to sustain more than one node. Given the urban hierarchy it has to be Sydney.

Strategic planning

Investment in transport and communications infrastructure must derive its rationale from trends in the Asia-Pacific region and promote closer integration both between Australia and the region and within Australia itself. Restructuring of the spatial economy is necessarily a gradual process, so that the time horizon must be at least fifteen years. It is, therefore, essential that the allocation of scarce funds be programmed according to long-term objectives. Critical path analysis can then be used to determine the proper sequence of investments in each mode to achieve an integrated transport system.

Airports

The slow rate of growth of the domestic economy means that the increase in domestic air travel and international business traffic demand will also be poor. The segment of the market with high growth potential is international tourism. Whereas domestic air travel reflects the distribution of population, tourist travel will remain highly focused upon Sydney as the major gateway. As Australia's leading international holiday resort, Brisbane/Gold Coast will match Sydney's growth as a second tourist destination but Perth, Adelaide and Melbourne will continue to serve local markets and accommodate overflows. This distribution underlines the importance of investing in modern international terminals at Sydney and Brisbane/Gold Coast.

Container ports

Unlike other modes of transport, Australia's container ports do not require large investments in the short to medium term. In fact, Australia's ports — small by world standards — are heavily overcapitalised in wharfage and cranes. This situation has arisen because of low productivity, which is now being addressed with some success by the process of waterfront reform. Looking beyond the turn of the century, however, decisions will have to be made about replacement and expansion in both ports and associated infrastructure. Over this time horizon it can be expected that Brisbane and Fremantle, both having the advantage of proximity to Asia, will enjoy the greatest sustained rates of growth in TEUs, derived partly from expansion of the local economy and partly from transshipment with other Australian ports (Fig. 4).

The major container routes between Southeast and Northeast Asia and Australia, unlike the routes from Europe and North America, involve short line hauls of only 7-10 days. The logic of minimising door-to-door transport costs on these routes is to turn around ships in the first main Australian port rather than to maintain a multi-port itinerary. A good example is the Japan-Australia trade. Between Yokohama and Brisbane the voyage time is only ten days (twenty days return sailing plus port time). Another six to seven days could be saved on the Australian coast by cutting out — at least on alternate voyages — the extension to Sydney and Melbourne, thereby making it possible to maintain a weekly service with five or even four ships instead of six. Trials have shown that cars from Japan can be trucked from Brisbane to Sydney and to northern Victoria

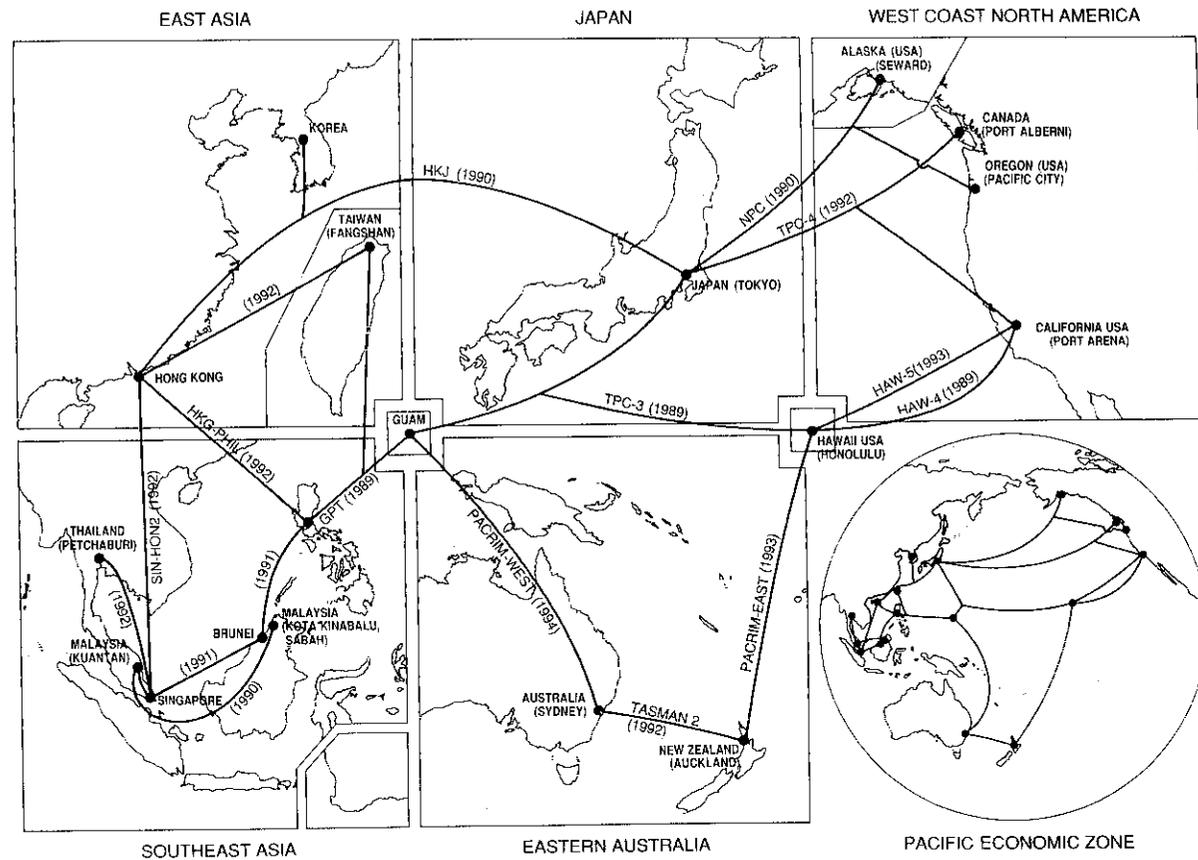


Figure 3. Network of Fibre-optic Cables in the Pacific Economic Zone, showing dates of completion
 (Source: Rimmer, 1991).

more quickly and cheaply than by direct calls to Sydney and Melbourne (pers. comm.). Regular lines in the Northeast Asian trade continue to call every voyage at Sydney and Melbourne not so much because land transport is slow and expensive — cheap back haul rates are available southbound from Brisbane — but because the freight rate structure is undifferentiated by main port there is little incentive for innovation.

Landbridges

While cheap backhaul rates create an opportunity for more flexible liner route patterns, the long-term future of Brisbane and Fremantle as terminal ports depends upon the economics of landbridge links to the main market of Southeast Australia. United States' experience is that double-stack container trains are most economic for hauls over 1600 km (ISC, 1987: 62). This would suggest that landbridging is most unlikely to be competitive between Sydney and Melbourne or Sydney and Brisbane but may have potential between Brisbane and Melbourne (1600 km) and between Fremantle and the Eastern States (over 3500 km).

From this perspective, questions can be asked of present rail investment policy. First, the medium-distance rail links — Sydney-Brisbane, Sydney-Melbourne, Melbourne-Adelaide — are probably too short to hold the potential for a major intermodal shift such as would justify major track upgradings. Secondly, the closure of the Sydney-Broken Hill-Crystal Brook section of the standard gauge line to Western Australia, as recommended by Booz-Allen (1991) on the basis of current traffic, would be shortsighted. Pulling all East-West traffic into a coastal corridor between Sydney and Adelaide might appear superficially to enhance Melbourne's role in Southeastern Australia. However, from a strategic and long-term perspective it pushes Melbourne further away from Asia and makes it more heavily dependent upon transport links with Sydney.

Our strategy would suggest a different set of priorities for rail investment. What is lacking is an efficient inland freight link between Brisbane and Melbourne to intersect with that from Fremantle/Perth to the Eastern States. Consultants have recently suggested that an inland Brisbane-Melbourne link could be achieved at moderate cost by connecting from Cootamundra along wheat lines to the existing New England line and completing a newlink beyond Tenterfield to Fisherman Islands terminal (Fig. 5). This new rail link could eventually be upgraded to carry double-stack wagons. Such a development would open the way for a major rail interchange in western New South Wales at the intersection of the East/West and North/South lines. The logic of this facility would be to redistribute freight more efficiently between the corners of the 'Brisbane-Melbourne-Fremantle Freight Triangle'. The need for expensive works to upgrade the track between Parkes and Sydney would be obviated. Freight could be transferred at this inland terminal to single stack trains through to Sydney but this would be only a balancing traffic. Sydney cargo would continue to be served by direct shipment but, because of its congestion, Sydney would not have a long-term future as an international freight distribution centre for the rest of Australia. Reorienting Melbourne away from Sydney and closer to Brisbane would reduce its role as a port for Asian trade but enhance its opportunities as a high-tech manufacturing centre serving an Asian market. Nevertheless, Melbourne would retain its port functions in the European and New Zealand trades and, by virtue of an improved

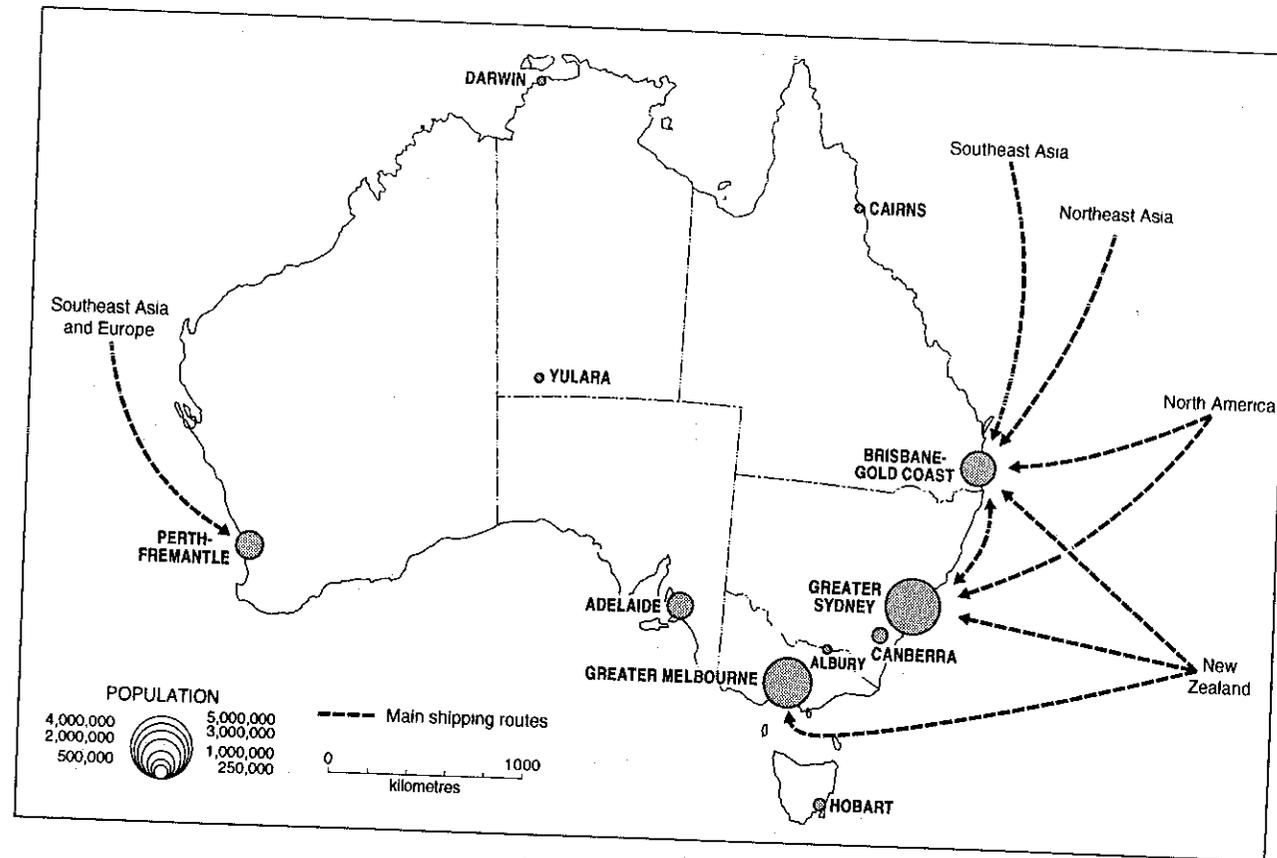


Figure 4. Australia's Main Cities and International Shipping Routes (The definition of the main urban centres and populations for 1986 are derived from Paris, 1992).

domestic transport system, be better able to redistribute goods to the rest of Australia. It would also continue to be the national freight forwarding centre for the Tasmanian trade. In the very long-term there is the prospect of a third landbridge between Darwin and Alice Springs. However, the absence of significant freight generating centres at the northern and southern terminals and the need to lay over 1500km of track from Darwin to Alice Springs through virtually uninhabited terrain makes this an inferior option with a high opportunity cost.

Provided the investment in an inland Brisbane-Melbourne rail corridor can be made at modest cost, there will be an appropriate market signal for the long-term development of Australia's freight distribution system. The immediate justification would be to facilitate domestic goods movements but scope would be created for redistribution of international freight. Even if for some time international container traffic made only marginal use of the corridor, a better articulated internal freight distribution system would encourage more aggressive operators to explore the feasibility of serving Australia by feeders from main Asian terminals. Looking ten years ahead, there is no reason to expect that Australia's liner shipping service pattern, little changed since 1970, will be maintained in isolation from Asia's sophisticated and highly competitive hubs that increasingly determine the shape of global shipping networks. The economics of landbridge links need to be more carefully investigated in a way that does not assume that operators of global mainline/feeder networks will require full cost recovery from door-to-door services to Australia with its modest container cargo base. By the same token neither would the National Rail Corporation necessarily require full cost recovery for haulage of international feeder traffic along underutilised corridors. Thus, the pessimistic studies of landbridging by BTE (1975) and ISC (1987) may not be definitive.

Road transport

Over distances of less than 1000 km, road freight is likely to be highly competitive with rail. Hence, completion of a dual expressway between Sydney and Melbourne remains a cost-effective investment (Fig. 6A). Logically, the dual carriageway should be extended beyond Newcastle along the Pacific Highway to the Gold Coast and Brisbane. Redesignated as the National Highway in preference to the New England route it would have the twin functions of serving both fast freight and the increasing population in coastal resorts. The Brisbane-Sydney, Sydney-Melbourne and Melbourne-Adelaide rail links would provide intermodal competition for the movement of domestic freight.

High-speed rail (passenger)

The controversy over the Very Fast Train served a useful purpose in focusing attention on the need to develop a major urban corridor between Sydney, Canberra and Melbourne (Fig. 6B). Because of revenue constraints, the promoters sought to route the line between Canberra and Melbourne via coastal resorts. From the viewpoint of long-term national development, the potential was far greater to link Canberra and Melbourne via Albury-Wodonga, thereby boosting the latter's future as the second major inland centre

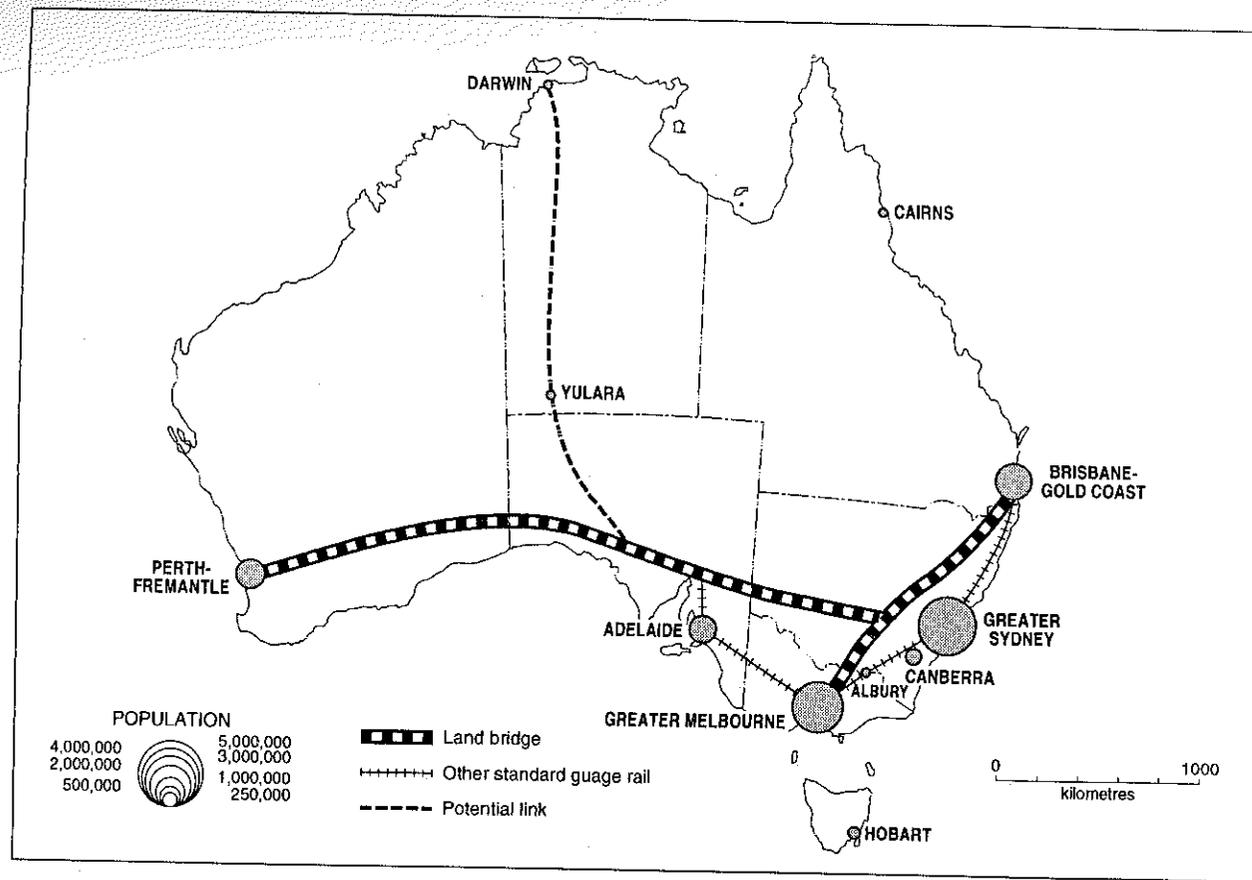


Figure 5. Prospective Landbridge and Standard Gauge Rail Links, Year 2000.

While the commercial viability of substituting high-speed rail for air travel is still an open question, there is no doubt that construction of such a high-speed rail link would, like Japan's Shinkansen, have defined Australia's first growth corridor. Even with the existing distribution of population such a corridor would concentrate almost half of Australia's population along a 1000 km axis.

Conclusion

In planning Australia's spatial economy the challenge is to work, for better or for worse, within the framework of a federal system. The political imperative is that each State capital should as far as possible retain a viable economic base. Since the early 1970s, international pressures have led to the centralisation of population and economic activity within Greater Sydney, creating strains within the Federal system. Attempts to accommodate this shift by concentrating infrastructure spending where congestion is worst has led to antagonism from other States. However, the countervailing tendency to compensate other States by spreading infrastructure spending has perpetuated congestion and impeded the effectiveness of Australia's main gateways. Excess capacity on first-class roads in rural Western Australia, Tasmania and Queensland has been a high-cost form of compensation which has done little to boost economic activity.

During the 1980s, there were signs of a more integrated approach to national transport planning. Australia now has a basic highway system. Agreement has finally been reached on a national rail freight system and a country-wide approach is now being taken to reform of Australian ports. The 'One Nation' package of February 1992 has at last restored transport infrastructure as a priority. What still seems to be missing, however, is a national spatial strategy within an Asia-Pacific context. On the one hand, the bureaucratic preoccupation with allocative efficiency, with better managing the existing sub-optimal system, has discouraged the investments needed to upgrade transport systems to international standards. On the other hand, short-term political pressures have tended to distort the investments that have been made and probably led to sub-optimal investment decisions in the long run.

If the present direction of policy is maintained, spatial patterns within Australia will continue to evolve in predictable but not necessarily desirable ways:

1. *Greater Sydney* will increase its predominance as Australia's main international gateway and continue to sprawl and suffer ever more acutely from congestion and pollution.
2. Driven by Northeast Asian investment, *Brisbane/Gold Coast* will continue to develop as the main secondary gateway with a strong leisure orientation.
3. *Melbourne* will continue to stagnate as a manufacturing centre and lose service functions to Sydney.

4. *Adelaide*, despite the Multifunction Polis, will remain no more than a provincial capital.

5 *Perth/Fremantle's* integration with Southeast Asia will remain hindered by poor transport links with the East Coast.

Marginal improvements will leave these problems unresolved

This paper has identified elements of a national spatial strategy that would better distribute economic activity around the country by working with, rather than against, international pressures. According to this strategy, Greater Sydney would maintain its dominant status but impetus would be given to Brisbane and Fremantle to emerge as major gateways. By linking Melbourne and Adelaide through these gateways more closely with Asian markets it would give them the opportunity to regenerate their manufacturing bases through more 'high tech' activities. In such ways this strategy would not only consolidate a national market but also provide a mechanism for closer integration with international markets.

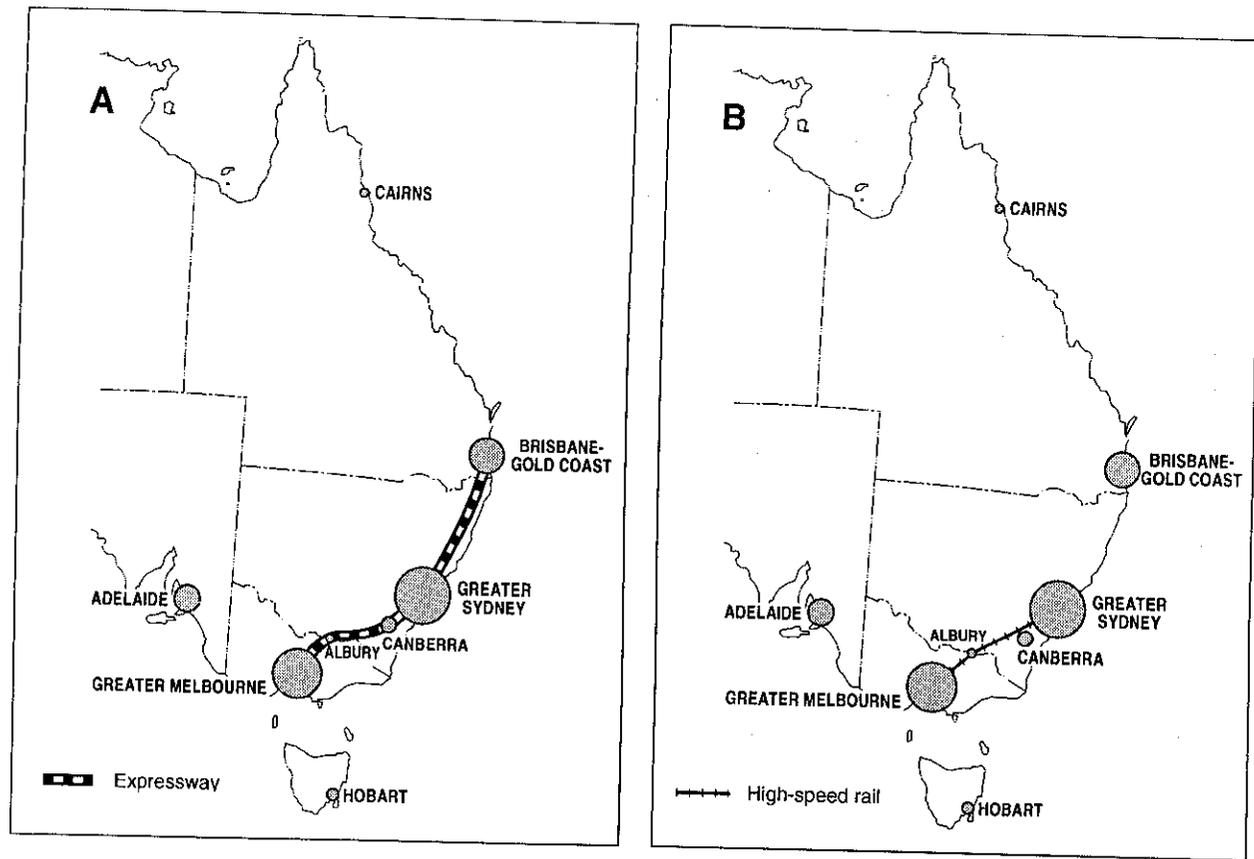


Figure 6. (A) Prospective Expressway and (B) High-Speed Rail Links, Southeast Australia, Year 2005.

References

- BIE, (1975) *The Economics of an Australian Landbridge* Canberra: Australian Government Publishing Service.
- Blainey, G (1966) *The Tyranny of Distance: How Distance Shaped Australia's History* Melbourne: Macmillan
- Booz Allen & Hamilton Pty Ltd, (1991) *Eastern Rail Network: National Rail Freight Initiative* Sydney Booz Allen & Hamilton Pty Ltd
- CI, (1991) *Containerisation International Yearbook* London: National Magazine Co...
- ISC, (1987) *An Investigation into a Potential Extension of Intermodal Rail Services*, Canberra: Australian Government Printing Service
- Paris, C (1992) The local context of international tourism: economic and demographic restructuring and urban/regional change, unpublished paper presented at the ISA [International Sociological Association] Research Committee 21 Conference, 23-25 April 1992, Los Angeles
- Rimmer, P J (1991) Invited paper: The emerging infrastructural arena in Pacific Asia since the early 1970s, *Proceedings of JSCE* [Japan Society of Civil Engineers], No 431/IV-15 1991-2, 1-17