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The Suburban Rail Loop: Not needed, not fit for purpose and a debt bomb

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Executive summary

The SRL is intended to provide a fixed rail, underground orbital link through Melbourne's middle suburbs from Cheltenham to Werribee. Its main function is to provide public transport options for the residents living near an SRL station.

The SRL is based on two population assumptions.

One is that Melbourne's population will grow at past rates to reach around 9 million by the year 2050 (from 5.1 million currently). The other is that a significant share of this increased population will locate in the middle suburbs served by the SRL.

This report argues that the SRL is not needed. Why?

First, the population and public transport demand assumptions are overstated.

Second, the SRL is not fit for purpose. There are cheaper options to provide public transport to the middle suburban activity centres.

Third, the cost of the SRL will be enormous, at least $34.5 billion for the East section from Cheltenham to Box Hill. The State is already heavily indebted. The Victorian Government is concurrently pursuing a renewable energy transformation and the modernization of the State's economy. These should have a much higher funding priority than the SRL.

The SRL is not needed

As indicated, the SRL is being justified by the forecast that Melbourne will reach the 9 million level by 2050.

Melbourne's population has, until recently, grown faster than other Australian capital cities. This is because it has retained its comparative advantage in housing affordability relative to other potential locations in Australia.

No longer.

By the fourth quarter of 2021, Melbourne was ranked the fifth most expensive city in the Anglo world as measured by the median housing price to median household income metric. Only Hong Kong, Sydney, Vancouver and San Jose were more expensive.

Melbourne reached a ratio of 12.1 on this metric, up from 9.7 in 2015 and 8.3 in 2013. By 2021, except for Sydney, Melbourne was far more expensive than any other Australian capital city, including Brisbane at 7.4 and Perth at 7.1 and way above that of most regional centres in Victoria and elsewhere in Australia.

Our analysis of the factors shaping the supply and demand for housing, indicates that this situation is unlikely to change.

On the supply side, buyers seeking a separate house in established suburbia in Melbourne face a median price of around $1.1 million. Their choice is limited because around half the stock is held by households aged 50 plus, few of whom show any inclination to move.

Our projection for the growth of demand for separate housing over the decade 2012-2022 (Table 2) indicates that the share of the established separate housing stock occupied by households aged 50+ will increase. This is because the baby boomer cohort is replacing a much smaller cohort born before 1945.

Also on the supply side, fringe housing used to provide a safety valve. But, not any more. The State Government's planning strategy for Melbourne, which prioritises higher-density residential development in established areas and which limits fringe expansion, is biting. Buyers on the fringe must locate some 50 kilometres from the CBD. By the first quarter of 2022, once there, they faced a median price for a block of $370,000. This bought a tiny block, averaging just 357 square metres.

On the demand side, there is no relief in sight. The size of the millennial cohort of households has grown rapidly, mostly because of expansion in the number of migrant households locating in Melbourne during the past decade who are now in this age group (aged 25-39) – see Table 2. Millennial households are the most interested in purchasing a separate house because they are entering the peak years of family building aspiration.

This is a recipe for sustained housing scarcity and sustained high prices. Consolidation will not relieve the situation. The price of units and town houses is also accelerating because the site costs for higher-density housing are so high.

The migrant impact is being ignored

Governments and business interests have expressed concern about the consequences for younger families of this housing affordability crisis. These interests are at the same time the strongest advocates for a rapid expansion of the migrant intake. There is minimal acknowledgement that such a revival will make the housing crisis in Melbourne (and Sydney) worse.

Housing prices, locational decisions and the SRL

The implications of the housing affordability crisis for the assumptions used to justify the SRL are profound. Given the importance of home ownership in Australia for financial security, Melbourne is likely to lose more of its residents than in the past as they vote with their feet to find affordable locations elsewhere. Migrants too, are less likely to be attracted to Melbourne.

It is highly unlikely that Melbourne will reach 9 million people by 2050 upon which the SRL planning is based. A figure of near 7 million is more plausible.

There are also doubts about the scale of the presumed higher-density settlement in the suburbs to be served by the SRL. Separate housing, and thus development sites in these suburbs already cost $1 million plus. These suburbs are unlikely to provide the affordable housing sought by the younger households who are likely to work or visit the SRL activity centres.

The SRL is not fit for purpose

Even if the State Government's forecast of 9 million by 2050 were to eventuate, is fixed rail the best option to provide public transport options to the proposed Activity Centres? Bus links, in particular, would be a far cheaper option for delivering a dispersed suburban population to these centres.

This case is spelled out in Infrastructure Victoria's proposed infrastructure priorities. It states that:

> Buses are the closest option to home. Buses do not require large, expensive, immovable infrastructure investments and can operate on most roads. The relatively low capital cost of buses means they can respond quickly to changes in population, technology, policy and behaviour.[1]

Furthermore, why build an expensive, immovable fixed rail system when there are growing doubts about use of the system. These derive from the increased post-Covid preference for working at home.

A debt bomb

The Victorian State Government cannot even cover the costs of providing services for its rapidly growing population from current tax and other revenues. For 2022-23, the Budget forecast is that there will be a net borrowing requirement of $14.3 billion.

The vastly larger borrowing requirement for infrastructure is additional.

Net debt from these borrowings was $60 billion in 2019-20. It doubled to reach $119.4 billion in 2021-22. According to the 2022-23 Budget Papers, net debt will reach $162.9 billion in 2023-24 and $182.3 billion in 2024-25. This debt is far larger, relative to the State's economic size than is the case for the other large States (NSW, Queensland and WA). The debt required to finance the SRL will be additional (very little private sector involvement is expected).

The Victorian Government must make choices if its renewable energy and economic modernization aspirations are to be achieved. The SRL is a third order priority.

The renewable transition

We show that the renewable energy transition will be far more costly than is assumed in the State Government's current assessments. The State's confidence is based on the rise in the share of renewables in electricity production in Victoria from 10 per cent in 2014 to 26.6 per cent in 2020. This achievement was based on householder installation of solar panels. The State's investment contribution was minimal.

This relatively cheap public cost phase is ending. Huge investment will be needed to cover the withdrawal from base load coal power, which cannot compete in price with renewable sources. Firming power will be needed to cover times when renewable energy is not available. It will be a major task and the public costs will be high, especially if the Victorian State Government pursues its stated objective of de-gassing the State's energy system.

If this firming power is to come from renewables it will require investment in the transmission system to bring renewables from dispersed sources to the metropolitan market. It will also require massive investment in electric power storage. The State Government is assuming that the private sector will take up the challenge. We argue that this is unlikely, except at a high cost.

Economic modernization

Victorian governments have long promised that with the demise of Victoria's manufacturing industries (following the removal of tariff protection in the 1980s and 1990s) they would create the conditions for the emergence of new knowledge intensive and internationally competitive manufacturing industries.

This expectation has not been met, as our data on Victoria's international trade position illustrates in spades. Figure 2 shows the value of Victorian imports and exports of elaborately transformed manufactures (ETMs) for selected years over the period 1990 to 2021. Exports have virtually flatlined at a low level (under $10 billion) since about 2000. By contrast, over the same period, the value of ETMs imported to Victoria has skyrocketed from just over $10 billion to over $60 billion.

The Victorian Government is asserting that the renewable transition will open a promising source of new industries for the State. This is an alluring prospect. However, it won't happen without a targeted industry policy in which the State provides concerted direction and finance.

For this to occur the Victorian Government will need to make choices.

Conclusion

Victoria is a people servicing economy, driven by population expansion in Melbourne. The problem is that the costs of providing for these extra people are growing faster than State revenues.

Meanwhile, the capital costs of providing for the health, education and particularly the transport infrastructure needed for the growing population have escalated. These costs too, are being covered by debt.

Victoria is mendicant state.

It does not possess the industry base (like the commodity rich states of Queensland and WA) to provide the revenues needed to cover Victoria's operational and infrastructure costs without massively increasing the State's debt.

As a result, the Victorian Government has had to continually browbeat the Commonwealth for more funds and resort to ever more desperate measures to sell off State assets.

A breathtaking example of the latter was the State Government's sale of an 80 per cent share of its VicRoads vehicle registration and licensing operations to a private consortium for $7.9 billion.

The sale was well publicised, but not its implications. It was justified as facilitating the modernization of the registration and licensing functions. Nevertheless, the Government acknowledged that the funds will go to a Future Fund aimed at 'reducing the debt burden on future generations'.[2] Sounds fine, but what was not acknowledged was the scale of the annual revenues that will be lost. According to the 2022-23 Budget Papers, revenue from the vehicle registration operations alone in 2022-23, were expected to yield $2 billion.[3]

There are opportunities to break this cycle. One is the renewable energy transition and the other a targeted industry policy focusing on knowledge intensive industries, including those stemming from the renewable transition. However, these opportunities are unlikely to be achieved while the State pursues its capital widening *Big Build* priority.

A rescue of sorts is imminent. Housing costs in Melbourne are now so expensive that people are voting with their feet – away from – not to Melbourne, as in the past.

The likely slowdown in Melbourne's population growth will diminish the State Government's cost and infrastructure burdens. The SRL, in particular, will not be needed. This will allow the State to focus on the far more important tasks of the renewable energy and knowledge intensive industry transformations.

Introduction

For the past two decades, Victoria's economy has been driven by providing the infrastructure, accommodation and the goods and services needed for an expanding population. The provision of the infrastructure component has prompted successive State governments to hugely expand the State's capital works program. The Victorian Labor Government has, since 2014, made its willingness to take on this program, under a *Big Build* rubric, the basis of its claim to be good manager of the State's economy.

The decision to build a Suburban Rail Loop (SRL) is the latest and by far the most expensive addition to the *Big Build* program. It is being justified, in part, by the role it will play in accommodating continued population growth. The Business Case for the SRL (detailed later) is based on the expectation that Melbourne's population will increase from 5.1 million in 2021 to around 9 million by 2050. By this time, SRL advocates frequently point out, Melbourne's population will be similar to that of present-day London.

For the big thinkers behind the project, such population growth would overwhelm the city's existing transport infrastructure, if funneled towards the city centre. Thus, the need for a new transport plan, in which traffic would be redirected across the city via an orbital SRL.

However, the SRL is much more than a transport plan. Its proponents see it as being key to the State Government's long-standing objective of increasing residential density in metropolitan Melbourne. The plan is to put most of the population growth into higher density developments within the City's existing built-up area.

This objective dates to 2002 when the Bracks' Labor Government released a radical metropolitan planning strategy – *Melbourne 2030*. This higher density strategy has been affirmed in subsequent planning strategy statements, the latest being *Plan Melbourne*, released in 2016 by the present Andrews led Labor Government.

The SRL fits hand in glove with this urban consolidation strategy. It is intended to link the resultant higher density middle suburbs to jobs in activity centres along the SRL route, while at the same time taking pressure off the inherited radial transport system. The SRL would also provide more accessible employment opportunities for the extra people who are expected to live in metropolitan fringe areas.

The SRL will be super-expensive. It will eventually link stations across middle suburbia all the way (mostly underground) from Cheltenham in the southeast to Werribee in the southwest of Melbourne. Planning is underway for the first phase, the Suburban Rail Loop East. This section of the line will connect Cheltenham and Box Hill stations, via new stations at Clayton, Monash, Glen Waverley and Burwood. The rail line and all of these stations will be underground. According to the Business case for the SRL, this first phase will cost between \$30 and \$34.5 billion with a target completion date of 2035.[4]

There are three major concerns about the SRL.

The first relates to the 9 million projection for Melbourne's population by mid-Century. In our view, this figure is not plausible.

As we explain later, via our analysis of the supply and demand for housing in Melbourne, the main reason is the sharp decline in housing affordability in Melbourne. This decline will be long-lasting. As a result, Melbourne will be less attractive to migrants and less likely to retain residents (especially millennials) who are in search of affordable housing. We also show that the affordability crisis will impact on the assumption, central to SRL planning, of continued increases in the amount of higher density housing in the middle suburbs to be served by the SRL.

The second concern is that the SRL is not fit for purpose. There are better and cheaper ways to provide transport linkage between the residents of middle suburbia and nearby activity centres.

The third is the enormous cost of the SRL. It will add significantly to the State's already serious debt burden. This will happen at a time when the State is simultaneously having to finance a transformation of the State's energy system from fossil fuels to renewable sources of energy. This transformation, so the Victorian Government asserts, will help the achievement of another longstanding goal, that is, a significant expansion in the scale of internationally competitive knowledge intensive industries. This objective, too, will require heavy state investment. Our conclusion is that the State's debt situation is such that there will have to be choices.

In our view the SRL is the worst option and, if pursued, will handicap the achievement of the renewable energy and new industry aspirations.

We elaborate on the debt situation before returning to detail the first and second concerns.

The SRL and Victoria's debt situation

The State Government proposes to finance the project. It has not found any private sector interest and, while the Coalition was in power at the Federal level, all requests for Commonwealth support were unceremoniously rejected. This has changed with the election of a Labor Government in late May. The Federal Labor Party, prior to its election, promised a $2.2 billion grant for the project. Nevertheless, this is a tiny share of the estimated costs of the SRL.

The scale of State investment required has to be considered in the light of the State Government's overall financial outlook.

Victoria, as detailed below, is already deeply in debt. The context is that Victoria, as a people servicing economy, has not been able to tap into the tax revenue streams available to other states from royalties and job creation flowing from commodity exports. Less than half the Victorian Government's revenue comes from State taxes, nearly half of which derive from property or property transaction taxes. Most of the rest of the State's revenue comes from the GST and from specific purpose grants funded by the Commonwealth Government.[5]

The Victorian Government faces escalating costs in providing services for its rapidly growing population. It can't fund these costs from current tax and other revenues. The result is that, for, 2022-23, the Budget forecasts that there will be a net borrowing requirement of $14.3 billion.[6] This requirement does not include the vastly larger borrowing requirement for infrastructure (detailed shortly).

Compare the Victorian situation with that of the commodity rich state of Queensland. The latter's 2022-23 Budget includes massive dividends from the State-owned fleet of coal fired power stations and renewable generators (some $1 billion per year) and from resource royalties ($9.1 billion in 2022-23).[7]

This source of revenue is long gone in Victoria. Dividend and royalty revenue is now miniscule. The State-owned electric generating and transmission assets, as well as the State's gas assets, were sold off by the Kennett Government between 1995 and 1998. There is little of the family silver left. In its search for funds the Andrews Government sold off one of the last of the jewels, the Port of Melbourne, for $9.7 billion in 2016. The Treasurer, Tim Pallas, acknowledged at the time that the proceeds were needed to help pay the State's infrastructure bill, including its promise to remove 50 level crossings.[8]

The State Government has had to rely on off-budget borrowing to finance its *Big Build* (detailed shortly). This is funding not covered by the current revenue streams included in the State's operating Budget.

These off-budget borrowings are the main source of funds to finance the State's infrastructure program.

Net debt from these borrowings was $60 billion in 2019-20. It doubled to reach $119.4 billion in 2021-22. According to the 2022-23 Budget Papers, net debt will reach $162.9 billion in 2023-24 and $182.3 billion in 2024-25. By 2024-25, the proportion of net debt to Gross State Product is estimated to reach 33.3 per cent, up from 12.8 per cent in 2019-20.[9] The projected 2024-25 level of net debt to Gross State Product will be much larger than any of the four largest States (Victoria, NSW, Queensland and WA).[10]

As yet, the SRL barely figures in the State's estimates of infrastructure debt. The 2022-23 Budget Papers declare that it will be 'the most significant infrastructure and placemaking investment undertaken in Victoria.'[11] However, with the State Government still trying to figure out where the funds are to come from, the debt implications of the project do not yet impact on the debt outlook just summarised.

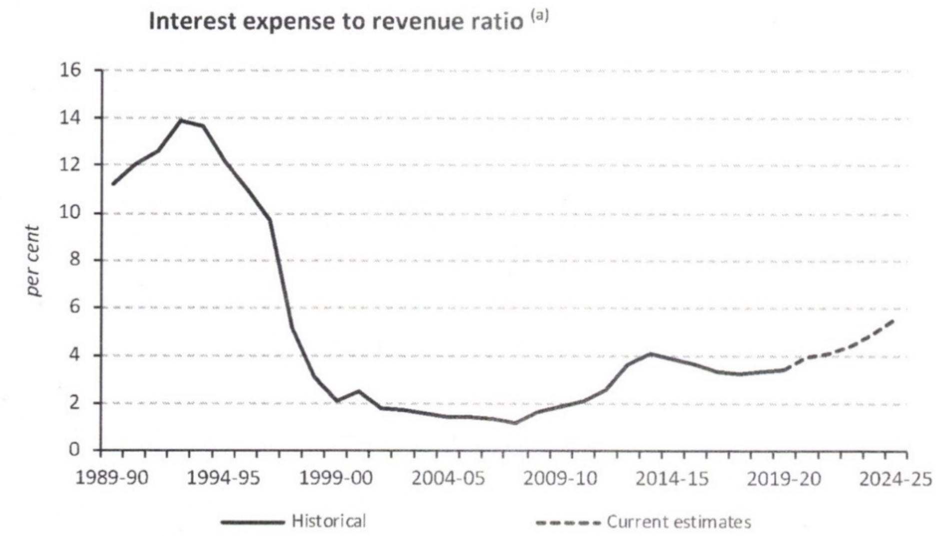
So, what if debt increases? The State Government claims that the projected debt is manageable and that it will be employed in projects that will increase productivity and thus the State's capacity to finance it.

Figure 1, drawn from the 2021-22 Budget Papers shows that the ratio of interest expense to revenue only increases marginally to 2024-25. The Treasury reassured readers at the time (May 2021) that the 'Reserve Bank of Australia has indicated that interest rates are expected to remain low for an extended period.'[12]

However, that statement had a short life span. Just a year later, in May 2022 and then again in June and July 2022, after an unexpected surge in inflation, the Reserve Bank increased its interest rate, with the prospect of more hikes to come.

The Budget debt forecast indicates that massive additional borrowings will occur given the State's infrastructure plans, including the SRL. The Victorian Government will have to pay market rates if it is to attract lenders. As a result, interest payments are likely to be much higher, as will the interest expense to revenue ratio. It may approach the disastrous proportion of around 10 per cent that Figure 1 shows prevailed in the early 1990s.

Figure 1 Interest expense to revenue ratio



Source: Department of Treasury and Finance

Note:

(a) Interest expense to revenue ratio prior to 1996-97 has been calculated on a cash basis, as accrual accounting was implemented from 1996-97 onwards.

The spurious claim that residential consolidation promotes economic modernization

In this context, we need to remind readers that, ever since the release of *Melbourne 2030* in 2002, successive Victorian Governments have asserted that by consolidating settlement and facilitating higher density activity centres, internationally competitive knowledge industries would flourish. The SRL Business Case puts an identical argument.

The Bracks/Brumby Labor Governments, beginning in 1999, set the pattern. They understood that with Australia's new low tariff arrangements (put in place by successive Hawke- and Keating-led Labor Governments), some of Melbourne's tariff protected industries would die. They concluded that Victoria had to adjust by setting the conditions in which knowledge intensive, innovative industries could flourish. The higher density centres that *Melbourne 2030* was expected to encourage were intended to contribute to this setting. Docklands, which took shape in the mid-2000s, was to be a showcase.

This transformation never happened. Melbourne did lose most of its tariff dependent manufacturing industries, but the promised knowledge intensive industries did not surface. As we detail later, over the past 20 years, Victoria has become increasingly dependent on imports of Elaborately Transformed Manufactures (ETMs). These include almost all goods that are not raw or lightly transformed commodities. Imports of these ETMs into Victoria have surged, but exports have hardly moved from their very low level in the year 2000 (see Figure 2 below).

The SRL Business Case does not acknowledge this experience or explain why the results will be different when the SRL is eventually constructed. Nor does it address the possibility that the massive investment in the SRL will be at the expense of alternative, more productive uses of these scarce funds.

This goes to the heart of our third concern about the SRL. We argue that massive State investment will be needed if the State Government is to achieve its aspiration to transform Victoria's electricity sourcing from fossil fuels to renewables. This aspiration should have much higher priority than investment in the SRL.

We make a similar point in relation to the State Government's aspiration to transform the State into an internationally competitive economy. If Victoria is to create such industries, it will need a pro-active industry policy, which will require very substantial State Government financial support.

We detail these concerns in what follows, starting first with the population outlook.

The SRL may not be needed because the population assumptions are inflated

As noted, the Victorian Labor Government expects that Melbourne will grow from a city of 5.1 million to reach near 9 million by 2050. By this time, according to the Victorian government's population projections, it will have long surpassed Sydney as Australia's largest city.

Where do these projections come from and are they plausible? They stem from the work of the demographic unit within the Victorian Department of Planning, which has been published in successive bulletins, entitled *Victoria in Future*. The projections have recently been affirmed by the Centre of Population within the Australian Federal Government. This Centre's December 2021 statement has Net Overseas Migration (NOM) returning quickly to pre-pandemic levels, and Melbourne surpassing Sydney within four or five years.[13]

These projections assume that Melbourne, with 20 per cent of the nation's population will continue to attract a third of Australia's migrant intake (or at least 80,000 people a year). They also assume that Melbourne will continue to attract a small annual net gain from internal migration (compared with Sydney's annual net loss of around 30,000).

Recent population data challenge these expectations (Table 1).

Table 1 Components of population change by capital city 2020-21

City	Natural increase	Internal migration	Overseas migration
Brisbane	17,397	15,001	-10,528
Perth	15,083	6,468	-5,382
Adelaide	5,252	-266	-3,131
Canberra	3,318	357	-3,277
Darwin	1,656	-1,602	-381
Hobart	863	-828	-369
Sydney	36,943	-34,849	-7,245
Melbourne	27,363	-33,501	-54,367

Source: Australian Bureau of Statistics, Regional Population 2020-21 by financial year

One eye-catching number in Table 1 is Melbourne's internal migration *loss* of 33,501 in 2020-21. We have not seen such a loss since the early 1990s. Melbourne's gains from internal migration since then have been a major source of its rapid population growth relative to Sydney. Another startling number is the overseas migration loss of 54,367. These losses were affected by the pandemic, but we argue that they provide an indication of what is to come.

The 2020-21 outcomes have prompted some reassessment of the population outlook by the Victorian Treasury. The Treasury forecasts that Victoria's population growth, which was around 2.3 per cent per year prior to the Pandemic, will only slowly recover, to 1.7 per cent by 2023-24.[14] (The Budget Papers do not provide forecasts for Melbourne).

However, as noted earlier, the recent demographic setback for Melbourne has not led to any reassessment of the outlook on which the SRL is predicated. High profile demographer, Bernard Salt, thinks Melbourne will sail through the recent blip:

> By mid-century Melbourne is expected to regain the title it lost at federation as Australia's largest city. The reason, I think is that Melbourne offers more people better access to more affordable housing.[15]

Despite his optimism, Salt does note an important caveat. This is that much will depend upon movements in housing affordability.

It has long been an article of faith within State Government planning circles that Melbourne's comparative advantage in providing affordable housing, particularly affordable separate detached housing, has been vital to Melbourne's attraction to migrants (whether from overseas or within Australia) and to the city's ability to retain its own residents. Historically, Melbourne has enjoyed a significantly higher share of separate dwellings than Sydney. For decades, this advantage relative to Sydney was maintained because of the virtually unrestrained spread of suburbia on the fringe of the city.

The challenge of urban consolidation to Melbourne's population outlook

Melbourne 2030 represented a radical challenge to this fringe expansion. It hugely increased the potential for higher density development both in the form of high-rise apartments in inner areas and medium-density infill in established suburban areas. At the same time, *Melbourne 2030* put limits on the spread of suburbia into fringe areas. These limits were expected to result in the share of new dwellings in greenfield areas falling from 38 per cent over the 1997-2001 period to 22 per cent between 2026 and 2030.[16]

The plan's architects assumed that these measures would not undermine Melbourne's attraction to young residents entering the housing market or to migrants. They were expected to accept a trade-off. This was between less access to separate housing and greater proximity to the jobs, transport options and the amenities that housing located in higher-density areas were presumed to offer.

The magnitude of the change in dwelling patterns required is indicated in Table 2. This provides a projection (prepared by The Australian Population Research Institute) of Melbourne's need for additional dwellings over the 2012 to 2022 period. The projection was first published in 2015 as part of an earlier analysis of Sydney and Melbourne's housing situations.[17]

Our projection assumed that dwelling preferences by household type and age of household would remain the same as evidenced by actual living arrangements in Melbourne for Australian-born and overseas-born households at the time of the 2011 Census. It shows that in these circumstances Melbourne would need an additional 355,000 dwellings, 231,000 or 65 per cent of which would be separate houses (see Table 2). These figures are plausible, because as detailed later, the projection got the overall population growth number and the household growth number for Melbourne between 2012 and 2022 right.

However, as would be expected from the above analysis, the separate housing share of dwellings actually constructed in Melbourne was well short of that in our projection.

A Victorian official analysis of residential building approvals over the period 2005 to 2017 for Melbourne shows that, for most of this period, apartments and semi-detached units and low-rise apartments constituted over half of all building approvals.[18] It was only in 2020 and 2021 that detached housing approvals exceeded other dwellings. This occurred in a context where approvals for apartments had collapsed.[19]

Yet despite the planners' success in restricting the construction of separate housing, people kept coming to Melbourne. *Melbourne 2030* projected that Melbourne would add a million extra people over the 30 years from 2002 to 2031 to reach 4.6 million by 2031.[20] In fact, the city's population grew by 1.6 million in just 20 years to reach 5.1 million by 2021.

There was a further opening up of opportunities for higher-density development following the publication of *Melbourne@5 million in 2008*. As before, people kept coming. Melbourne reached 5 million in 2020, not in 2030 as projected in *Melbourne@5 million*.

Plan Melbourne, which follows the *Melbourne 2030* template and was published in 2016, further tightened access to separate housing on the city's fringes. The stated policy was to require developers to achieve greater block yields. They were expected to average 18 dwellings per hectare. The goal was to locate 65 percent of new homes in established residential areas, and only 35 percent on the fringe.[21]

In addition, the location of fringe housing was redirected to the West and North of Melbourne (where 77 per cent was to be located). This was at the expense of the South (which includes Cranbourne, Berwick and Pakenham, areas which have been the most popular destination for those locating on the fringe).

Along with the higher-density priority, *Plan Melbourne* also put greater emphasis on the provision of new transport options that would serve residents in the more densely settled areas. It featured a '20-minute city' concept. The aspiration was to better link these communities to large activity centres and the range of services that they provide within a 20 minute travel radius. The SRL, as noted, is intended to support this long-established objective.

Despite these higher density measures, people kept coming to Melbourne, at least until the Covid19 Pandemic and the associated population shock of 2020-21.

Why not again, as is assumed by the Victorian Government? The key is housing prices. Not just of any housing, but that suitable for households raising or intending to raise children. For most households of this kind in Melbourne, this means separate housing.

Melbourne's housing price escalation

Melbourne has lost its comparative advantage in affordable housing. As a consequence, the city is losing its attraction for migrants and its capacity to retain residents.

By 2021, separate housing prices in Melbourne were among the most expensive in the world. By the fourth quarter of 2021, Melbourne was ranked the fifth most expensive city in the Anglo world as measured by the median housing price to median household income metric. Only Hong Kong, Sydney, Vancouver and San Jose were more expensive.[22]

Melbourne reached a ratio of 12.1, that is, the median price of a house equated to 12.1 times the median household income. This was up from 9.7 in 2015 and 8.3 in 2013. By 2021, except for Sydney, Melbourne was far more expensive than any other Australian capital city, including Brisbane at 7.4 and Perth at 7.1 and way above that of most regional centres in Victoria and elsewhere in Australia.

Melbourne now has a major housing crisis on its hands. The price of separate housing and of the relatively large units or town houses that households wanting to raise a family might regard as substitutes has shot up. It is now well beyond the financial capacity of young families (unless they are very high earners or have financial support from their families).

The reason for the high price of units or town houses is the elevated site costs developers must pay in order to build new units and town houses. These site costs, in turn, are a result of the high prices developers must pay for the separate housing usually occupying the blocks they want to redevelop for units or town houses.

Erosion of the fringe safety valve

As noted, in the past, Melbourne's urban fringe has offered a safety valve for affordable alternative separate houses compared to those in the more expensive established suburbs. This is now a diminishing option.

The price of land on the fringe has been increasing at the same time as the size of blocks has been diminishing. Land prices rose strongly from 2016 to 2018, by which time they reached a median price of some $340,000. The price surged again in 2021-22 to reach a median price of $370,000 in the second quarter of 2022.[23]

This was despite the fact that this higher price procured a smaller block than was previously the case. By 2018, the median size of blocks sold had already fallen to 400 square metres. By the second quarter of 2022, the median size of blocks sold had shrunk to just 357 square metres.[24] The majority of these sales were in the North and West sectors of the metropolitan fringe.

Once there, movers confront communities where infrastructure lags the arrival of new settlers. Fringe suburban arterial roads are chronically congested, making movement to schools, shopping and work locations just as burdensome as in many inner suburbs of Melbourne.

The bottom line is that Melbourne has lost its comparative advantage in the provision of affordable housing with adequate amenity. Prospective home owners are faced with higher prices for smaller blocks located ever further from the CBD.

Much larger blocks at lower prices are available in regional settings and in other capital cities (except Sydney). There has been a surge in demand for land and housing in these regional locations. Currently, for the first time, land prices in Geelong are higher than on Melbourne's fringe and those in Ballarat (115 kilometres from Melbourne) are now 85 per cent of Melbourne's. Two years ago, they were 57 per cent of Melbourne's.[25]

These regional areas are likely to soon recover their price advantage. This is because they do not face the planning straitjacket that constrains developers on Melbourne's fringe.

Regional cities can and are highly likely to respond by releasing the land needed to sustain their recent population growth.

Melbourne's housing affordability crisis

There is a huge literature on the bleak outlook for younger households across the developed world.[26] The focus is on the large millennial generation born between 1980 and 1995. These are, in the main, the children of the baby boomer generation born between 1945 and 1965. This literature focusses, not just on the hurdles that millennials face purchasing housing, but also the debts many carry from financing their education and (at least in the UK and the US) the low growth in income from most occupations, relative to that received by upper professional and financial elites.

The millennial cohort is the most significant from the point of view of demand for separate housing. This is because they have reached an age (in their late 20s and 30s) where interest in obtaining housing suitable for raising a family is high and they are more likely to possess the funding base to purchase a house. Their numbers are crucial when considering the demand side of housing market. In Melbourne, both the numbers of resident and migrant millennials (particularly the latter) have been growing and are much larger than was the case a decade ago. There is a well-established pattern within this cohort of movement into separate housing as they contemplate or begin raising a family. Census data for 2011 showed that the great majority of women aged 30-34 and 35-40 who had children and lived in Melbourne were occupying a detached house.[27]

On the supply side, millennials face the policy driven outcome described above, where the share of higher-density dwellings built in Melbourne has risen, and where the option of separate housing on the suburban fringe has narrowed.

Finally, and most importantly, a growing share of the stock of existing separate houses in Melbourne is held by older households, mainly baby boomers. We detail the scale of this phenomenon shortly. By the time of the 2016 Census, 53 per cent of separate houses in Melbourne was occupied by households aged 50 and over.[28] This proportion will get higher.

The underlying scarcity of separate houses accessible to new home buyers has been intensified by competition from upgraders, investors and, in the case of new housing stock, foreign investors. The Australian Prudential Regulation Authority (APRA) does not provide capital city figures. However, for all Australia, APRA reports that in the December Quarter 2021, the investor share of new residential mortgages was on the upswing, reaching 29.1 per cent in that Quarter.[29]

During this recent period, the Reserve Bank's policy of printing money and the Federal and State Government's huge borrowings, swelled the funds held by the commercial banks. At the same time, the Reserve Bank's policy of ultra-low interest rates made borrowing costs lower.

The result was a surge in demand and a resulting hike in housing prices during 2021, including in Sydney and Melbourne. As detailed earlier, by this time Melbourne's was among the most expensive locations for housing in the Anglo developed world.

For most millennial households in Melbourne a separate house is no longer affordable.

Melbourne's housing crisis has profound consequences for the households affected. Housing property in Australia is regarded as the key to financial security. It has been the source of massive gains in wealth for those who possess it. On the other hand, those unable to get on to the housing property ladder miss out on this source of wealth and, as well, face the threat of continued high rental costs and financial stress as they age if they are renters.

Though there have been plenty of crocodile tears shed on behalf of millennials and their housing woes, there is no sign that Federal or State governments will rectify the situation. This could be done by: opening up the fringe; curbing the overseas migrant influx; or limiting competition from foreign or local investors (as by removing the negative gearing concessions). Calls for more migrants from business interests have swamped whatever concerns there are for the plight of frustrated home buyers and impoverished renters. Home buyers and renters have been abandoned.

Instead, Federal and State governments have focused on demand side initiatives, including the Coalition Government's Home Builder subsidy available during most of 2020 and 2021. Such initiatives add to the demand side of the equation. So would the more recent proposals from the Coalition to allow home buyers to access their Superannuation reserves for a home purchase and Labor's proposals for the government to share the investment in a new home.

The housing crisis and Melbourne's population outlook

The Victorian Government is assuming that the demographic drivers that have fueled Melbourne's city building and people servicing economy in the recent past will continue unaffected.

However, this time it is different. Such is the plight of aspiring home owners that there is no doubt that this will affect their locational preferences.

It is delusional to assume that young people will just make the best of the situation in Melbourne. Given the importance attached to getting a foothold in the housing market, it is inevitable that many will take up the options for relatively affordable housing in regional Victoria or elsewhere in Australia, including South-East Queensland and northern coastal NSW. Jobs will always be an issue. However, this may be not the problem that it once was when working from home is an option for many white-collar employees, including professional workers. Also, it is likely that, as regional economies grow with population expansion, this will give an impetus to local city building and service job opportunities.

Why pay $600,000 plus for a house on a tiny metropolitan fringe lot 50 kilometres or more from the Melbourne CBD when, for the same price or less, much more house and land is available in regional Victoria, as in Geelong, and Bendigo? These places are not that far from cramped spots on Melbourne's fringe, and offer better health, educational and recreational infrastructure.

We think that the net 33,501 population loss Melbourne experienced through internal migration in 2020-21 is an augury of things to come (Table 1). A loss of 30,000 a year over the thirty-year period to mid-century would cut some 900,000 from Melbourne's projected population to 2050. It is not unprecedented. Sydney has been experiencing net losses of around 30,000 a year through internal migration for the last two decades.

The same point applies to Melbourne's attractiveness to overseas migrants. Though the new Federal Labor Government is likely to push up immigration levels, there is no guarantee that

Melbourne will continue to attract a third of these migrants. Those on student and other temporary visas will still come to Melbourne, where there are plenty of apartment options.

However, Melbourne has also attracted large streams of settlers on permanent visas, people who have moved into suburban locations, as with South Asians attracted to the Werribee corridor and the Chinese who have a large presence in the suburban City of Monash. But again, Melbourne's big attraction (apart from the presence of large pre-existing migrant communities) has been the relative affordability of separate housing.

This advantage has now gone. Migrants, like resident millennials, are likely to look elsewhere in Australia for affordable, more appropriate housing options.

It is quite feasible that the net 80,000 migrants hitherto attracted to Melbourne each year could shrink to around 50,000 a year, reducing Melbourne's population outlook by another 900,000 over the thirty-year period to 2050.

If these hypotheses are right, then rather than Melbourne reaching 9 million by 2050, an outcome close to 7 million is more likely. If so, the need for additional infrastructure, including the SRL, would be far less than the State Government is anticipating.

We are not forecasting a 7 million outcome. Rather, the argument is that, based on our assumptions, this figure is plausible. Conversely, the 9 million forecast lacks credibility, given the likely consequences of the city's housing affordability crisis.

Alternative population-rebound arguments

There is no lack of experts assuring the State Government that Melbourne's current population slowdown is temporary. Their view is that the current relocation pressures will be short-lived and that the underlying supply/demand imbalance for housing will be quickly reversed.

This is the view of Luci Ellis, Assistant Governor of the Reserve Bank. Following the Treasury's population forecasts, Ellis expects population growth to return to 'normal' within a few years. She also thinks that the spike in home prices during 2021 will abate as the one-off forces contributing to the price escalation come to an end (including the end – in April 2021 - to the Commonwealth Government's Home Builder subsidy).[30]

This is unlikely in Melbourne. The underlying supply problem is much more severe than those commenting on the housing situation realize (including Bernard Salt and Luci Ellis). This is partly because of the growing share of separate houses in Melbourne occupied by older households. As noted, by 2016, some 53 per cent of the separate housing stock in Melbourne was occupied by households aged 50 plus. As we show below, this share is certain to grow, with the result that it will further squeeze the demand/supply imbalance for such housing.

In addition, these commentators ignore the implications of growth in the size of the millennial cohort, which is the cohort most interested in acquiring a separate house. As we will see, there has been a large increase over the decade 2012-22 in Melbourne of this millennial cohort, mainly because of an increase in the number of migrant households in this age group.

The implications are obvious. Demand for separate housing will continue to grow in a context where the supply of such housing is tight. Meanwhile, it is State policy to restrict the production of separate housing on the fringe.

This explains the otherwise puzzling outcome that housing prices in Melbourne (and Sydney) could be so high relative to other Anglo world cities. Many have restrictions on fringe housing (as in the UK) but few have to cope with as high a rate of demand as is the case for Melbourne and Sydney, which are the main settlement points for migrants locating in Australia.

The demographic basis of the separate housing shortage in Melbourne

The main evidence for these claims derives from our projection of households by household type (including families with children, couples and singles) by housing type (separate house, etc.) for Melbourne over the decade 2012-2022. As indicated earlier, this projection is based on the actual housing choices of different household types in Melbourne (for Australian-born and overseas-born residents) at the time of the 2011 Census.

The projection cannot be dismissed as outdated. This is because the demographic assumptions incorporated in birth and death rates and migration were largely correct. We projected that net overseas immigration into Melbourne would hold at around net 80,000 a year over the projection period. This is precisely what has happened. The population projected for Melbourne as of 2022 was 5.2 million (just a tiny bit above the actual 5.15 million). Likewise, our projection for the growth of households for the decade to 2022 of 355,100, was very close to the Census count for Melbourne over the decade to 2021, which was 350,681.

As expected, the projection for the number of households occupying detached houses was overstated because of the implementation of the State Government's consolidation policy during the decade. Fewer households were able to locate in separate houses than would have been the case if the preferences for such housing (as in 2012) had been achieved.

Our projection (Table 2) put the growth in additional separate houses in Melbourne over the decade 2012-22 at 231,300. In fact, according to the first release findings from the 2021 Census the increase over the Census period 2011-2021 was 168,564.[31] Instead of separate houses adding 65.2 percent of additional dwellings (according to our projection) they actually added just 48 per cent.

The State's urban consolidation strategy, which was designed to limit the expansion of separate housing, worked as intended. One consequence is that this result has sharpened the demand/supply imbalance for such housing, and thus contributed to the resulting housing affordability crisis in Melbourne.

However, the projection for the extent of occupation of separate houses by older (reference person aged 50 years plus) households is not in doubt. This is because the great majority of older households projected to be living in Melbourne by 2022 were already in the city as 2012 (though now a decade older). There were very few additions to the older household number from overseas migrants during the decade.

Most of these older households occupied detached houses in 2012, and there is abundant evidence that few have downsized to an apartment or unit.[32]

The consequences by 2022 are startling. Table 2 shows that over the decade, households aged 55+ were likely to be occupying an additional 128,000 separate houses. It is highly likely that, as a result, the share of older households currently occupying separate housing will have increased to be above the share recorded at the time of the 2016 Census.

What is more, it is certain that this share will increase over the next decade. This is because the baby boomers (now aged 55-74) who have such a high propensity to occupy separate housing are, as they age, replacing a much smaller cohort of older households born prior to 1945.

As a consequence, the supply/demand imbalance for detached housing will not be short-lived, nor will the impact on Melbourne's population outlook.

This is no secret. Nevertheless, the official demographers shaping expectations for Melbourne's population growth do not address it. They have not done the household by dwelling type projections on which our analysis rests. Why not? When we asked, the answer from the *Victoria in Future* team was that the State Government had not provided the financial resources for them to provide such a projection. As for the Federal Treasury's Population Centre, there is nil reference to the household factor.

The overseas migrant contribution to the separate housing shortage

We have indicated that, given the current supply/demand imbalance for separate housing, any revival of overseas migration must make the situation worse. Few would doubt that overseas migration makes a difference. The extent of the difference may surprise.

Table 2 shows that for Melbourne, over half of the additional growth in dwelling needs (for all types of dwellings) projected over the 2012 to 2022 decade was attributable to the impact of NOM. It would add some 193,140 to the total additional dwellings projected to be needed in Melbourne of 353,090, or 54.7 per cent.

Table 2 also shows that this net migration addition would add significantly to the number of households in the age cohorts which include millennials (that is the 25-34 and 35-44 age groups). Indeed, the addition would be far more than that needed to accommodate growth in the number of resident millennial households.

Let's start with the resident cohort. This cohort is defined as the total population located in Melbourne as of 2012. Any change over the subsequent decade would be attributable natural increase and changes in age distribution as the result of ageing. The impact of NOM since 2012 is excluded.

Table 2 shows that on these assumptions there would be a modest increase in the number of resident millennials projected in the age 35-44 age group. This increase reflects the relatively large number of children born between 1980 and 1995 (the children of the post-war baby boomer cohort). Table 2 indicates that an additional 17,250 dwellings would be needed as a consequence of these extra households. Most of these, or 13,450, were projected to occupy separate houses.

However, the number of resident millennials in the 25-34 age group was projected to decrease over the decade. This reflects a dip in births during the late 1990s.

There was a much larger projected need for additional dwellings to accommodate the impact of NOM between 2012 and 2022. This applies both to migrants in the 25-34 and 35-44 year old age cohorts. An additional 75,660 dwellings were needed for expansion in the number of 25-34 year old migrant households and an extra 55,870 for growth in the number 35-44 year old households. Around half of these households were projected to require separate houses (if they repeated the dwelling pattern as of 2012).

It is clear that, on these assumptions, most of the growth on the demand side for housing in the millennial age group in Melbourne over the 2012-2022 period is attributable to migration since 2012.

This outcome is a consequence of the fact that migrant movements to Melbourne during this period was dominated by arrivals of large numbers of younger people, especially those enrolling as students. Many have since stayed and, by 2022, have aged into the 25-34 age group.

We don't know how many of these migrant millennials have managed to purchase housing, whether as separate houses or higher density flats and units. At the time of writing, the ABS had not released household by birthplace by dwelling data. However, it has provided some data on the number of millennials by locality.

This has prompted much public comment, hinging on the Census finding that the share of Australia's population in the millennial age group has reached 21.5 per cent, about the same as the share in the baby boomer cohort. Melbourne, as our analysis has indicated, is particularly rich in millennials. Their share of the city's population by 2021 was 24.1 per cent.[33]

It follows that, if migration is increased as business interests are advocating, any such increase will add significantly to the demand for separate housing and thus to one of the core factors that has produced the housing affordability crisis.

This implication is ignored by most advocates.

Table 2 Estimate of additional dwelling needs under Nil NOM, 240,000 NOM, and total, Greater Melbourne, decade 2012-2022

Age band (years)	Separate house	Semi-detached, row or terrace house, town house	Flat, unit or apartment	Total
Additional dwellings 2012-2022 projected under NIL NOM				
18-24	-6,350	-1,240	-3,430	-11,150
25-34	-12,420	-2,900	-4,920	-20,350
35-44	13,490	1,750	1,930	17,250
45-54	20,090	2,290	2,200	24,690
55-64	33,770	4,020	3,800	41,810
65-74	43,090	6,110	6,440	55,860
75+	37,710	6,860	9,120	53,880
Total	129,380	16,890	15,140	161,990
Additional dwellings 2012-2022 projected due to increasing NOM to 240,000 - migration component				
18-24	4,320	2,250	8,130	15,160
25-34	33,720	9,940	31,500	75,600
35-44	32,360	9,230	14,090	55,870
45-54	18,170	3,580	4,450	26,400
55-64	8,890	630	2,580	12,100
65-74	3,180	990	1,780	5,950
75+	1,330	220	510	2,060
Total	101,970	26,840	63,040	193,140
Total additional dwellings projected 2012-2022				
18-24	-2,030	1,010	4,700	4,000
25-34	21,300	7,040	26,580	55,240
35-44	45,850	10,980	16,020	73,110
45-54	38,260	5,870	6,650	51,080
55-64	42,660	4,650	6,380	53,910
65-74	46,270	7,100	8,220	61,810
75+	39,040	7,080	9,630	55,940
Total	231,350	43,730	78,180	355,090

Notes: Under NIL NOM the changes in household numbers over the decade take account of the ageing of the existing 2012 population as well as deaths. It includes the effects of internal migration.
The 240,000 NOM takes account of all international migration both inwards and outwards.
The total additional dwellings in the bottom panel of Table 2 are the sum of these two components.
The table applies dwelling occupancy patterns by age group as of 2011 to the Australian Bureau of Statistics population projections for 2012-2022 as described on pp. 3-5 of Birrell and McClosky, October 2015. Numbers have been rounded so may not sum precisely. Totals in the right-hand

column include a small number of 'Other' and 'Not Stated' dwelling types not shown separately.
The age group for each household is that of the reference person in each household. The propensities used to calculate the data in the table were drawn from the 2011 Census.
The migrant status was determined by the birthplace and year of arrival information of persons 1 and 2 in each household at the time of the 2011 Census and weighted to take account of mixed households where a recent migrant lived with a pre-2001 migrant or Australia-born person.
Source: Birrell and McClosky, October 2015, Table 7, p. 13.

The Suburban Rail Loop

The SRL is about helping to make the post-*Melbourne 2030* planning aspiration come to fruition. This, as indicated, is to achieve higher density residential development in closer proximity to jobs, and to provide additional public transport options for residents in a more densely settled Melbourne.

Indeed, the SRL project can be regarded as the latest and most expensive attempt yet to realize the goal of a higher-density retrofit of metropolitan Melbourne.

The Minister put in charge of the SRL, Jacinta Allen, summarized the SRL's merits in mid-2021 as follows:

> The Loop delivers the calls of Plan Melbourne to respond to forecast population growth by boosting density in the suburbs and creating better public transport links that ease the pressure on constrained roads. The radial network was not going to deliver the public transport network that was needed for a city that was going to be the size of London by the late 2050s. We needed a game changer'. [34]

As the Minister asserted and as the Business Case for the SRL elaborates, the project is framed around the presumption that Melbourne will be as big as London by 2050. It states that the project is needed to help accommodate Melbourne's expected population growth from 5.0 million in 2022 to 9.0 million in 2050.[35]

Likewise, the Business Case is built around contributing to the *Plan Melbourne* objective. It asserts that SRL will do so by: 'Reshaping Melbourne as a polycentric city, supporting population, economic and jobs growth in major centres beyond the central city.' It goes on to state that the 'SRL will consolidate jobs in precincts and provide more housing choices in the right places, close to jobs and services. As more people call these precincts home, the rate of urban sprawl will reduce.'[36]

There is a third alleged benefit, highlighted in the Business Case. This is that the economic growth resulting from the SRL will include the knowledge intensive industries that the State has long aspired to promote.

The SRL is unlikely to achieve these goals

The SRL is not needed

Melbourne will continue to grow but, as we have argued, at a much slower pace than is assumed in the State Government's case for the SRL. This likely slower pace of population growth is a direct challenge to the viability of and need for the SRL.

In addition, as a result of the housing affordability crisis, the anticipated demand for public transport options servicing middle suburban activity centres along the path of the SRL will be less than assumed in the Business Case. The Business Case endorses the Victorian Government's expectation that its residential consolidation policy will deliver a much more concentrated population and thus the need for more public transport services to these activity centres.

The expected customer base for the SRL is dubious

The Business Case provides no investigation of the characteristics of the residents currently living in the suburbs near the proposed stations and associated activity centres. They are the prime potential rail customers for the SRL.

In the case of SRL-East, these are baby boomer suburbs. Most of the residents are on the verge of retirement, or are already retired. Maybe this will change over the fifteen years it will take to build the line. But maybe not. It will be at least 15 years before most of these residents reach their late 70s and 80s and begin to move on from the scene.

The Business Case assumes that skilled workers can be attracted as new job opportunities open up in the transit-based activity centres. The authors imply that higher density development within the nearby suburbs will accompany this outcome. However, the Business Case does not address the housing affordability constraints on this expectation. Detached houses in these suburbs now cost well over $1 million.

It is more plausible that activity centre development associated with the SRL will attract skilled job seekers living in fringe locations, where millennials have some hope of finding affordable separate housing. That is, the skilled workers in question may prefer a less expensive detached house on the fringe than an expensive townhouse or unit near one of the SRL stations. If this is the case, it will add little to the prospective patronage of the SRL.

The SRL is not fit for purpose

Closer settlement in middle suburbs might result in a greater workforce interested in transport to the activity centres near the proposed SRL stations. But, to the extent to which it does, there remains the question of whether fixed rail is the best way of providing such access.

There are other options, notably buses or light rail. There is a further possibility that most residents in the activity centre catchments will prefer to use their car, even if heavy rail is available. Driving would avoid the challenge of getting to their local SRL station then, after arriving at the activity centre SRL station, walk or use some other transport option (perhaps a bus) in order to reach their desired work or service destination in or around the activity centre. Further, many journeys are multipurpose for which private transport would be more suited. Home-work journeys may often involve incidental activities such as shopping or picking up/dropping off children, which would involve significant detours from the fixed rail route.

The Business Case does not address these issues, and certainly not the 'emperor has no clothes' possibility that the SRL will fail to attract serious patronage at all. As is evident by now, the Business Case is a work of advocacy with the primary objective of justifying a project that was already decided on in 2018.

The decision to proceed was taken in secret. It was made by planners convinced of the merits of the *Melbourne 2030* model which was, from the outset, largely ideologically motivated. It was a decision made without any reference to the transport experts within the State Government Department of Economic Development, Jobs, Transport and Resources.[37]

Nor was there any opportunity for public input prior to the decision. Such input might have prompted obvious questions about alternative transport options, questions which the Victorian Government has never addressed.

There is no consideration in the Business Case as to whether the fixed rail linkages between the proposed Activity Centres (each with a new station) could be provided via alternate transport measures. Bus links, for example, would be vastly cheaper and more flexible in delivering a dispersed suburban population to these centres.

This case is spelled out in Infrastructure Victoria's proposed infrastructure priorities. It states that:

> Buses are the closest option to home. Buses do not require large, expensive, immovable infrastructure investments and can operate on most roads. The relatively low capital cost of buses means they can respond quickly to changes in population, technology, policy and behaviour.[38]

A modernized, electric powered bus fleet would also help address the imperative to reduce fossil fuel based greenhouse emissions.

It is easy to be critical in hindsight. But developments during and since the Pandemic raise a fundamental issue with the SRL Business Case.

The SRL will fix in stone (or iron rails) an immovable piece of transport infrastructure. But (and this is the 'Emperor has not clothes' scenario) what if the public that it is intended to serve changes its preferences towards working at home rather than in activity centre business hubs?

Perhaps the recent pandemic induced spike in home-work location will be long-lasting. If so, it would constitute a major threat to the economic viability of the SRL. This is an outcome that transport planners elsewhere are already to coming to grips with. As the *Economist* puts it in a discussion of a major transport proposal in the UK:

> The revised business case explained that rush hour is not what it was, and that the link between job growth and transport use had been broken. It pointed out that even before the pandemic, polling showed that train commuters wanted to work from home a few days a week. Now they can.[39]

The SRL and high productivity knowledge intensive industries

The State Government claims that there is no need to worry about the accumulation of State debt resulting from the *Big Build* because it will enhance the State's productivity and thus provide the revenue needed to pay off the debt.

The Business Case for the SRL asserts that the productivity gains will be massive. These are said to mainly derive from the expected growth in business activity in the activity centres located along the Loop. According to the Business Case:

> SRL will drive businesses to locate in clusters outside the central city – by 2056, SRL Precincts will be home to 545,000 jobs. By driving growth in the knowledge economy and leveraging new and existing anchor tenants SRL will attract high value, knowledge-based jobs to SRL Precincts…. Consolidation and clustering of businesses and economic activity, combined with better business-to-business connectivity across 73 per cent of Melbourne's middle ring, will generate $6 billion to $9.7 billion in agglomeration benefits in present value terms – increasing innovation and productivity and generating value for Victoria.[40]

The Business Case does not specify what these knowledge intensive industries will be. However, it is highly likely that they will be service industries in retail, finance, health and community care, education and administration, that is, they will repeat the established pattern of people servicing industry growth in Melbourne. Unfortunately, there is a huge body of evidence, repeated again and again in Productivity Commission reports, that labour productivity in Australia in these industries is low.[41]

There is no consideration in the Business Case as to the opportunity costs of expenditure of some $30 to $34.5 billion for the SRL East link (let alone the additional tens of billions for the rest of the loop) for alternative investments. Or, of the potentially greater productivity gains from such alternative investments.

This is a vital issue, because Victoria faces a major financial commitment if it is to achieve its renewable energy transformation aspiration. This is as well as the long-promised ambition to achieve an economic transition towards competitive, knowledge intensive industries, particularly those which would be internationally competitive and have export potential.

The renewable energy transition

The Victorian Labor Government has embarked on a transition to renewable energy that will put it among the world's leaders in greenhouse gas emission reductions. It has legislated this commitment over the years 2017 to 2020. The target is to reduce these emissions by 50 per cent compared with 2005 levels, by 2030.[42]

Unlike other State Governments, the Victorian policy also proposes to de-gas the state economy. This commitment will add significantly to the emissions reduction task. Most Victorian households (some 2 million) are gas consumers. Gas dominates the space heating market in Victoria. This space heating demand is responsible for the current huge hump in gas demand during the winter months.[43] This must be met during a time when the solar contribution to renewables is at its lowest. It will require major investment if this energy source is to be replaced by renewables. It is a task that must be achieved at the same time as base load, brown coal based electric power is also replaced by renewables.

The problem is that the Victorian Labor Government has not yet come to grips with the magnitude of these tasks. The Government's public statements since 2017 imply that the renewable transition can be achieved relatively painlessly. This confidence is based on Victoria's success during the 2010s when the share of renewables in electricity production in Victoria increased from 10 per cent in 2014 to 26.6 per cent in 2020.[44]

This achievement was founded on the remarkable uptake of rooftop solar voltaic panels during this period. These delivered on two fronts. They replaced brown coal base load power and they delivered householders much cheaper energy. The State Government's renewables statement presumes that this path to emissions reduction will continue.

It has not turned out this way. The reduced draw on base load power sources in Victoria (and in other Eastern States) has had major flow-on effects. It has prompted a sudden swag of announcements by the black and brown coal base load power owners that they will close down their plants far earlier than had hitherto been projected. The reason is that the privately owned operators cannot make a profit when competing with cheap renewable power sources.

Victoria has already been directly affected. In 2017, the huge 1600 MW Hazelwood brown coal power station closed. It had been delivering about 20 per cent of Victoria's electricity. Its shut down was the main contributor to the fall in greenhouse emissions in Victoria in the 2010s.

Then, in March 2021, Energy Australia announced that it will close its 1,480 megawatt capacity Yallourn W plant in 2028, rather than in 2032 as previously planned.

Subsequently, in February 2022, Mike Canon-Brookes, one of Australia's richest persons announced that he had made a takeover offer (with the backing Brookfield, a Canadian private equity company) for AGL, the large black coal base load power operator. Canon-Brookes stated that, if his takeover succeeds (it has since occurred) he will close all AGL's baseload coal plants by 2030, including the company's Loy Yang A plant in the La Trobe Valley. This time-table has since been extended. Nevertheless, even with a few years delay, the closure would leave just one base load plant operating in Victoria by the early 2030s. This is the 1,100 MW Loy Yang B generator, owned by a Hong Kong based company, Alinta Energy.

These developments mean that the renewable transition task will be more difficult than has hitherto been acknowledged by the Victorian Government.

Plentiful renewables will reduce the current reliance on brown coal baseload power, but there will still be a need for firming power when sufficient solar and wind are not available. Victoria will have to cover a huge firming gap that will be left in the generating system that is still covered by La Trobe Valley coal powered plants. As well, the proposed de-gassing of the system will add to this task, given the currently high reliance on gas for winter domestic heating in Victoria (much higher than in the other Eastern states).

Replacing gas; a cautionary tale

The British have even more ambitious renewable targets than is the case in Victoria. By 2020, 43.1 percent of electricity generated in Great Britain was sourced from renewables, well above the current level in Victoria.[45] Renewables there have largely displaced electricity generated from base load coal plants. This means that Great Britain is now heavily dependent on firming power derived from gas. By 2020, 35.7 per cent of electricity produced in the UK came from gas generators.

Victoria built its reliance on cheap gas in the aftermath of the Bass Strait discoveries. In a similar fashion, the British built up a reliance following the development of North Sea fields in the 1970s. As in Victoria, in the UK, gas has been used as the main source of domestic space heating with 85 per cent of households in the UK currently relying on this source.[46] British consumers are now facing a price shock given the price implications for gas of the Russian invasion of Ukraine.

The transition to renewables can be done, but at a cost

Advocates for renewables make a good case that the transition can be achieved despite the above challenges.[47] But, it is going to take very major investment. This is for two reasons.

First, much more renewable energy will be required than domestic solar panels can provide. Victoria's other solar and wind energy sources will have to be tapped on an unprecedented scale. This will mean harvesting renewable energy from across the State and offshore (in the case of wind). This will have to come from dispersed sources and thus require costly transmission infrastructure investment to deliver the electricity to the metro market.

The second reason is that, in order to utilize these renewable resources when they are needed, there will have to be major investment in batteries to provide the firming power referred to above.

The batteries will have to include ones of grid scale (capable of generating several hundred MW an hour for a few hours) as well as residence batteries designed to capture solar power during the day, then releasing it when it is needed. Currently, very few houses with solar panels have installed such batteries.

These batteries will have to be augmented by pump hydro storage because it can be built with the capacity to supply firming power for days rather than a few hours.

Who will pay?

Someone is going to have to pay for the transmission lines and storage capacity required if Victoria is to achieve its rapid renewable transition aspiration.

Recent events, including the Canon-Brooks' takeover of AGL, indicate that there is plenty of private sector investment capital potentially available. The Canadian private equity firm Brookfield that backed Canon-Brooks' initial takeover move is a case in point. It has already purchased AusNet, the largest owner of electricity transmission and distribution assets in Australia.

This may be reassuring, especially given the proliferation of private equity businesses like Brookfield. However, the private equity business model is based on finding assets that will reap higher returns than are available from conventional stocks and bond investments. These returns have been attracting massive flows into private equity firms from superannuation and pension funds, education endowments, sovereign wealth funds and the like.

Private equity will only be attracted if relatively high returns are assured. Private equity firms are notorious for prioritizing rapid financial returns, sometimes to the cost of the long-term prospects of the business they invest in. They are not appropriate owners of energy related assets where the goal is future sustainability and reliability.

The State Government will have to provide the investment funds where private investment is not forthcoming or where there is no assurance about the longer-term commitment to sustainability. Or, in the case of household batteries, where consumers are unwilling to pay or cannot afford the cost.

It is unlikely to be able to take on this task while simultaneously financing the *Big Build*, including the SRL.

Victoria's industrial modernization aspiration

The Victorian State Government has flagged its enthusiasm for pursuing new industries flowing from the transition to renewable energy.

In our view, a major focus should be on new industries linked to the production, transmission, storage and use of renewable based electricity. There is massive potential in the next phase of the renewable transition, for example, in the conversion of road transport to renewable energy. Victoria, even with its depleted heritage of leadership in the automobile industry, could take the lead.

At present, the hardware requirements for the renewable transition are almost all imported, including the solar panels, wind turbines, batteries and electric vehicles.

So far, there have been few financial commitments to projects that might achieve these goals. The Victorian State Government has preferred to rely on the private sector for any such initiatives. In our view, if these opportunities are to be taken up, it will require a targeted industry policy in which the State Government will have to take the lead in direction and financing.

As matters now stand, it seems that, instead, the State Government will divert its financial capacity to the *Big Build*.

To conclude, we make a broader point in reference to the aspiration of successive Victorian Governments to deliver an industrial transformation. This is to turn the state into a locus for internationally competitive, knowledge intensive industries.

As noted earlier, when the Victorian Government embarked on its *Melbourne 2030* journey, the politicians and planners promoting it thought that the initiative would help to generate new knowledge intensive industries. They expected that these would replace the tariff dependent industries that the State had relied on for much of its economic growth from World War 2 until the 1980s.

In the lead up to the 2002 State election, the Labor Party asserted that the goal was 'to make Victoria one of the world's most innovative and international focused economies.' [48]

They thought that Docklands would set an example, in association with the Multifunction Polis concept for the creation of a high technology city for international innovative elites. The Bracks and Brumby Labor governments also embraced the arguments of US social theorist Richard Florida. Florida argued that the creation of an attractive, cosmopolitan cultural environment for internationally mobile skilled elites would do the trick. Provide the cultural prerequisites and the creation of a smart economy would, more or less, look after itself. Ostentatious place marketing events, such as the Melbourne formula one Grand Prix, and the hosting of international sporting events, such as the Commonwealth Games continue to be motivated by this belief.

The promised industry transformation did not happen, as the following record of Victoria's international trade situation illustrates in spades. If it is to happen, it will require a government led, pro-active, targeted industry policy. This is unlikely to occur if the State's limited financial capacity is directed to the *Big Build*.

Victoria's deficit on international trade

Victoria's present situation is illustrated starkly in Figure 2. This shows the value of Victorian imports and exports of elaborately transformed manufactures (ETMs) for selected years over the period 1990 to 2021. As noted earlier, ETMs include all manufactured goods except raw or lightly processed commodities.

The value of ETMs exported from Victoria has virtually flatlined at a low level (under $10 billion) since about 2000. By contrast, over the same period, the value of ETMs imported to Victoria has skyrocketed from just over $10 billion to over $60 billion.

Figure 2 Victorian imports and exports of Elaborately Transformed Manufactures (ETMs)

Readers may wonder if this ETM imbalance is muted by the trade performance of other merchandise trade, as with primary goods. It is not. ETMs dominate imports and the overall international trade profile of Victoria. As Figure 3 shows, even in goods industries where Victorian exports are relatively high, as with processed food, there is a near equivalent importation of such merchandise.

The ETM imbalance is a key defining feature of the Victorian economy. Imports and exports of ETMs combined accounted for 76 per cent of the value of all Victorian international merchandise trade activity in 2020.

Figure 3 Victoria, International merchandise trade, imports and exports (A$000), TRIEC level 3, 2020

What about trade in services? This too, makes little difference to Victoria's parlous trade situation.

Victoria's international trade in services does not come close to compensating for the serious imbalance in its merchandise trade. Table 3 shows the total imports and exports for goods and services for Victoria and Australia in 2019-20. Victoria's huge deficit on goods trade is more than compensated by Australia's commodity exports which constitute the majority of Australia's goods exports. Victoria's deficit of $54.6 billion compares to Australia's surplus of $72.1 billion.

Victoria did have a surplus in international services trade, of $4.6 billion, compared to the national surplus of $5.1 billion. However, this was tiny compared with Victoria's deficit in merchandise trade. These figures are a sobering corrective to the State Government's claim that Melbourne is succeeding as an international 'event city'.

Table 3 Value of merchandise and services imports and exports, Australia and Victoria (A$000), 2019-20

	Goods (A$000)		Services (A$000)	
	Victoria	Australia	Victoria	Australia
Exports	31,357	382,979	25,228	92,261
Imports	86,037	310,797	20,962	87,108
Balance	-54,680	72,182	4,266	5,153

Sources: DFAT, Economic Profiles, Victoria and Australia, 2019-20

The Victorian Labor government's economic strategy has created an illusion of economic foresight and vitality. The formula is one of endless infrastructure catch up (and therefore ongoing periodic shortfall). Rapid population growth results in serious cyclic infrastructure shortfall, which the government uses to promote itself as providing the necessary expenditure and planning solutions at election time.

The SRL provides a prime example. It has been promoted as a solution to an expected population of 9 million by 2050, which at the same time is expected to generate dynamic economic growth and innovation.

It is only now that some observers are becoming aware that State's investment in the SRL may be incompatible with the scale of debt the Victorian government has already accrued.

It is notable that the 2022 Victorian state budget made no significant reference to the SRL even though it was the government's flagship policy at the 2018 election. It may be that the cost of the SRL project, combined with the state's ballooning debt levels, has become something of an electoral liability. With a Victorian election looming in November 2022, the Victorian opposition has been quick to focus on the SRL as a costly white elephant. The Victorian Opposition, in its reply to the government's budget, focussed on debt levels and overblown infrastructure budgets.[49]

Conclusion

Victoria is a people servicing economy, driven by population expansion in Melbourne. Until recently it seemed to work. It delivered strong overall economic growth and employment expansion.

The problem is that the costs of providing for these extra people are growing faster than State revenues. The Victorian Government has had to borrow just to cover current expenditures.

Meanwhile, the capital costs of providing for the health, education and particularly the transport infrastructure needed for the growing population have escalated. These costs too, are being covered by debt.

Victoria is mendicant state. It does not possess the industry base (like the commodity rich states of Queensland and WA) to provide the revenues needed to cover Victoria's operational and infrastructure costs without massively increasing the State's debt.

As a result, the Victorian Government has had to continually browbeat the Commonwealth for more funds and resort to ever more desperate measures to sell off State assets.

A breathtaking example of the latter was the announcement in early July (just as we were completing this report) that the State Government had sold an 80 per cent share of its VicRoads vehicle registration and licensing operations to a private consortium for $7.9 billion.

We need a little detail to convey the seriousness of this transaction. The sale was justified as facilitating the modernization of the registration and licensing functions. But, as well, the Government acknowledged that the funds will go to a Future Fund aimed at 'reducing the debt burden on future generations'.[50] Sounds fine, but what was not acknowledged was the scale of the annual revenues that will be lost. According to the 2022-23 Budget Papers, revenue from just the vehicle registration operations were expected to yield $2 billion.[51]

There are opportunities to break this cycle. One is the renewable energy transition and the other a targeted industry policy focusing on knowledge intensive industries, including those stemming from the renewable transition.

Because of the State's debt obligations, if these opportunities are to be capitalised on, it will require an end to the current exorbitant city-building, people servicing focus of the Victorian economy. So far, the State Government has rejected this option. It is stubbornly pursuing its *Big Build* – culminating with the SRL.

An inadvertent rescue of sorts is imminent. Housing costs in Melbourne are now so expensive that people are voting with their feet – away from – not to Melbourne, as in the past.

The likely slowdown in Melbourne's population growth will diminish the State Government's cost and infrastructure burdens. The SRL, in particular will not be needed.

There is a real opportunity for the State to focus on the far more important tasks of the renewable energy and knowledge intensive industry transformations.

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