Western Australia's Post Hearings Submission to the Productivity Commission's Inquiry into Horizontal Fiscal Equalisation

December 2017

This submission responds to issues raised by the Productivity Commission during the public hearing with the Western Australian Government on 14 November 2017.

Under a move from full to reasonable equalisation, a 50% limit to the loss of royalties under a royalty rate increase, and draft rulings from the Commonwealth Grants Commission (CGC) on how they might treat a tax change or a new policy; does Western Australia need other reforms?

- Further reforms are also needed, especially for the smaller States.
- Equalising to the average does not sufficiently reduce economic disincentives for all States.
  - For example, in Table 1 below, the GST loss for each of the four smallest population States if they improve their economy is almost as large under equalisation to the average as it is under current arrangements, and the loss for Queensland is only modestly reduced.
  - Under equalisation to the second strongest or to the average of the donors, there is generally little reduction in the economic disincentives for any State other than the fiscally strongest (currently Western Australia, although this is projected to change).
  - Likewise, in Table 2 below, the reasonable equalisation options give only limited reductions in the sensitivity of the mining revenue assessments for the smaller States.
- The CGC proposal to cap GST losses from a royalty rate increase to 50% of the increased royalty revenue is a good start but would have little or no impact under a reasonable HFE objective.[1] There are also other issues with the CGC proposal:
  - it still leaves GST much more sensitive to royalty rate changes than to tax rate changes (which have a maximum GST loss of 10% of the additional revenue);
  - it has no impact on the GST losses incurred when State royalties increase due to encouragement of new development rather than a royalty rate increase; and
  - it is an ad hoc approach which discriminates between past and future royalty rate increases.
- While draft rulings would be helpful:
  - they will not remove disincentives to encourage development or set optimal royalty rates;
  - they will only be drafts, which could be overturned by CGC decisions either when the policy is actually implemented or at a following method review; and
  - CGC methods should be clear enough that rulings would not be required.

[1] If Western Australia becomes the second strongest State then, under equalisation to the second strongest State, Western Australia would have losses over 50% from raising its iron ore or nickel royalty rates.

- Hence, while the three reforms would go some way to addressing the extreme situations where the current system of HFE is most damaging, there is still an important role for other reform options such as:
  - amalgamation of mining revenues with a fixed (policy neutral) royalty rate;
  - discounting of mining revenue (and possibly tax) assessments; and
  - broad indicators or partial or full aggregation of revenue bases.
- These additional reforms would directly address disincentives faced by all States (including the smaller States), but by themselves are unlikely to address outlier circumstances, reflecting the inherently approximate nature of the CGC's methods and limited available data. Hence there is a need for an overarching approach to outliers, as reflected in 'reasonable equalisation'.
- A move to 'reasonable equalisation' is also appropriate in the context of difficulty in keeping the CGC process accountable and transparent. The CGC has operated without any meaningful oversight for many years now. The Productivity Commission has noted that "Commonwealth Governments have distanced themselves from the HFE system".[2] The effects can be seen for those intimately involved in the process. Our submissions have provided relevant examples of issues with transparency and data availability.

Table 1: GST impact as a proportion of additional revenue if a State undertakes development activities (assuming national average tax/royalty rates)

	NSW	Vic	Qld	WA	SA	Tas	NT	ACT
Current								
• 2015-16	-68%	-75%	-80%	-89%	-93%	-98%	-99%	-98%
• 2024-25	-68%	-74%	-80%	-89%	-93%	-98%	-99%	-98%
To average								
• 2015-16	-10%	-8%	-66%	-3%	-88%	-96%	-98%	-97%
• 2024-25	-10%	-8%	-67%	-3%	-89%	-97%	-98%	-97%
To 2nd strongest								
• 2015-16	-57%	-75%	-80%	0%	-93%	-98%	-99%	-98%
• 2024-25	0%	-42%	-80%	-89%	-93%	-98%	-99%	-98%
To donor average								
• 2015-16	-27%	-59%	-80%	-9%	-93%	-98%	-99%	-98%
• 2024-25	-31%	-61%	-80%	-84%	-93%	-98%	-99%	-98%

- Numbers are calculated for an increase in that State's assessed revenue equal to 1% of its population share of the GST grant pool.
- Proportions will change if the State levies taxes/royalties on the new development at a rate different from the national average.
- Numbers are based on Western Australia's State Budget relativity projections for the 2015-16 and 2024-25 data years. Western Australia is the fiscally strongest State for 2015-16, while New South Wales is the fiscally strongest in 2024-25.

[2] Productivity Commission 2017, *Horizontal Fiscal Equalisation*, Draft Report, page 54.

Table 2: GST impact as a proportion of additional revenue if a State raises an additional $10 million from a royalty rate increase

State	Mineral	Current HFE	To average	To 2nd strongest	To donor average
WA	Iron ore	-88%	-3%	0%	-9%
WA	Gold	-61%	-2%	-1%	-6%
WA	Bauxite	-27%	+3%	+7%	+3%
WA	Nickel	-89%	-3%	0%	-9%
WA	Other minerals	-13%	+3%	+6%	+4%
Qld	Coal	-39%	-34%	-37%	-42%
Qld	Bauxite	-26%	-20%	-33%	-29%
Qld	Onshore petroleum	-12%	+1%	-13%	-12%
SA	Copper	-27%	-25%	-28%	-28%
SA	Onshore petroleum	-49%	-44%	-49%	-49%
NT	Bauxite	-15%	-15%	-16%	-16%
NT	Other minerals	-15%	-14%	-15%	-15%

- Numbers are based on Western Australia's State Budget relativity projections for the 2015-16 data year. The *Current HFE* column corresponds to Table 2.1 on page 10 of Western Australia's November 2017 submission.
- Positive numbers reflect a GST gain when the royalty rate is increased.
- In some cases, equalising to the second strongest or to the average of the donor States results in a larger loss from increasing royalty rates than under current arrangements. The reasons are complex. However, to illustrate, under current HFE, if Queensland increases its bauxite royalty rate by $10 million (increasing the standard royalty rate), Queensland's GST will decrease by $2.6 million because of its high bauxite production and New South Wales' GST will increase by $3.2 million because of its minimal bauxite production. Under equalisation to the second strongest State, Queensland is not only affected by its $2.6 million reduction, but also New South Wales' $3.2 million increase (as that alters the second strongest State benchmark).

Detail on the changes the CGC made to the health assessment earlier this year (as part of the 2017 Update) and in the 2015 Review

- Western Australia has concerns with the CGC's health methodology in relation to the impact of low levels of private health services in some States (including Western Australia) on costs of State health services. The CGC drastically changed this methodology in its 2015 Review, which resulted in Western Australia's GST reducing by more than $200 million per annum.
  - Consultation was lacking and nearly all of Western Australia's arguments and concerns were not addressed, or even acknowledged, throughout the course of the 2015 Review and the final report.
  - This method change occurred despite the CGC agreeing with Western Australia that the old methodology was conceptually valid.
  - The CGC provided no evidence that their new health methodology provides a better equalisation outcome than the previous method, whereas Western Australia provided evidence that the new methodology did not even conceptually achieve equalisation, and the quantification is essentially a series of ad hoc judgements.

- The heavy use of judgement in the new health methodology is applied in a way that punishes States with high healthcare needs.

- The purported problems with the old health methodology (largely relating to data) appear to be resolvable, whereas it is unclear that the new methods could be placed on a sound conceptual and empirical basis.

- In its 2017 Update Report, the CGC claimed to have corrected an error in its calculation of community health spending needs by applying a 25% discount to variations across States in the per capita level of actual GP benefits used in the calculation of the impact of low levels of private health services.

  - Western Australia's GST was reduced by around $70 million per annum as a result of this change, which is in addition to the annual loss of more than $200 million mentioned above.

  - States were not provided an opportunity to comment on this before the release of the Update Report.

  - Following the release of the 2017 Update Report, the Western Australian Under Treasurer wrote to the CGC Secretary expressing the State's concerns that this was a method change (which is inappropriate to make in an annual Update), that the change introduced inconsistency with other aspects of the assessment, and that the change makes an already flawed method even worse at representing Western Australia's needs.

  - The CGC responded that the change reflected their decision during the 2015 Review, which had been misinterpreted by their staff. However, the CGC's response did not address the inconsistency between the CGC's new decision and the wording of the 2015 Review Report.

Why the table in Western Australia's 2011-12 Budget did not illustrate a change in expenses under a 75% floor

- The table of the impact of a 75% floor on budget aggregates was only intended to illustrate the GST grant impact "all other factors being equal".

  - The table was included to encourage Western Australian individuals and organisations to support reform.

Development activity that has not been pursued because of the current HFE arrangements

- The lack of revenue retained by the State has led to it relying on the private sector to provide infrastructure, even when it might be more efficient for the State to do so.

  Example 1

  - The State could not upgrade the interconnected electricity system in the Pilbara region, due to budget constraints from a declining GST share (reflecting the inadequate allowance by HFE for Western Australia's needs from a growing population and economy). Mining companies have developed their own electricity systems for towns such as Tom Price, Paraburdoo and Newman. These towns are now only loosely interconnected with the State's North West Interconnected System (NWIS), which means limitations are imposed on electricity users in one part of the system accessing electricity generated in other parts of the system.

  - Hence, there is both costly duplication of generation capacity, and a lack of scope for surpluses in one location being used in other locations.

  - A December 2008 Allen Consulting report[3] noted:

    > In the absence of a coordinated approach, investment decisions by individual companies will continue to be made in isolation as they have been made in the past. As companies are expected to design their individual systems to meet desirable reliability criteria, this is likely to lead to substantial amounts of spare capacity distributed across individual non-interconnected sites. The redundant capital investment, the loss of economies of scale, the higher fuel costs and the higher carbon emissions as a result of this approach, are expected to be very significant.

  - In 2014, Horizon Power commissioned an independent study of the potential mining developments in the Pilbara region that could be connected to an expanded electricity network. The study was conducted by Pantheon Mining and presented the potential developments in two stages. Stage one targeted the tenement holders within a 50 kilometre radius of the Horizon Power infrastructure and closely analysed the power requirements of the projects being developed. The commodity spectrum identified included gold, platinum-group metals, hematite, magnetite, base metals, magnesium and potash. Stage two of the study targeted a corridor between Port Hedland and Newman, which was absent of any Horizon Power infrastructure but is heavily exposed to future commercial operations.

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3 Allen Consulting, *Power for the Pilbara Region*, December 2008.

- Stage one of the study identified a total of seventeen projects requiring power prior to commercial production and stage two identified a total of ten projects requiring power prior to commercial production. A redacted copy of this study is available online.[4] This study highlights some of the potential/forgone opportunity that would generate significant economic benefits to the State and Commonwealth more broadly had the budget capacity and investment in an efficient electricity network been made.

– This situation has arisen due to a combination of lack of funding from the State and a lack of a regulatory framework. The Carpenter State Government had plans to address this issue, but it was reprioritised by the Barnett State Government. Had HFE accounted for the impact of population growth prior to 2010, and not redistributed most proceeds from royalties, then this reprioritisation might have been avoided. The State Government could have taken a coordinated approach and funded the investment to create a more comprehensive integrated transmission network.

– To bring the standard of the NWIS up to the standard of the South West Interconnected system, and overcome the legacy issues associated with the private provision of electricity infrastructure, would require an investment of about $2 billion from the State, primarily to add to and upgrade the transmission network.

– The State is currently working towards a regulatory framework. More information can be found in the following issues paper:

http://www.treasury.wa.gov.au/Public-Utilities-Office/Open-consultations-reviews/NWIS-Regulatory-Reform/

Example 2

– Recently several companies have demonstrated interest[5] in the Mungari Strategic Industrial Area (SIA) near Kalgoorlie for refineries and processing plants. However, the SIA lacks gas supply infrastructure, which is a well-documented limitation[6] of the site.

– Companies have requested that the State Government build a gas pipeline spur from the existing Goldfields Gas Transmission mainline, approximately 18 kilometres away, costing an estimated $24-29 million. This request was rejected due to budgetary constraints which would not have existed if HFE had provided better allowance for Western Australia's needs from a growing population and economy. The absence of this gas pipeline is an ongoing impediment to the building of a number of proposed processing plants at the SIA, with at least one plant known to have been built overseas instead.

4 At *Appendix D. Identification of Mining Projects within the NWIS* in Horizon Power's *NWIS Issues Paper Response* at http://www.treasury.wa.gov.au/uploadedFiles/Site-content/Public_Utilities_Office/Open_consultations_reviews/nwis-regulartory-reform-issues-paper-submission-Horizon-Power.pdf.

5 http://www.abc.net.au/news/2017-07-13/perth-kalgoorlie-bunbury-competing-for-lithium-refinery/8704190

6 http://www.abc.net.au/news/2016-11-25/western-power-lack-capacity-hits-mining-companies/8058872

Examples of lobbying to stop changes in royalty rates or revenue measures

- The Government's proposed increase to the gold royalty rate in its 2017-18 Budget was consistent with the recommendations of the previous Government's 2015 Mineral Royalty Rate Analysis (MRRA). The MRRA reviewed the State's benchmark policy of a 10% return on the total mine head value of minerals, and how royalty rates fared in relation to the benchmark. The MRRA found that gold producers are not providing a fair return to the State, and that the current gold royalty rate is low relative to other States and other commodities.

- Despite the policy merits of this measure, recent attempts to raise the gold royalty rate were opposed by the National Party. The Nationals questioned the proposed gold royalty increase on the basis that roughly 60% of the additional revenue would have been lost through the GST.[7]

  - On 12 September 2017, Hon Mia Davies MLA, Leader of the Nationals, asked in Parliament "Why is the Premier pursuing a tax on jobs and small miners when the state only retains 40 per cent of what is collected for an improvement as part of the government's overall budget measures of $3.5 billion to the state's coffers?"[8]

- Liberal Party Members have also used this as a reason for opposing the gold royalty increase.

  - On 29 November 2017 as part of Parliamentary debate, Hon Mike Nahan MLA argued that the perverse impact of the GST meant 60% of the proposed gold royalty increase would be redistributed to other States.[9]

  - In the same debate, Hon Dean Nalder MLA acknowledged the GST impact of a gold tax, saying he knew "after the first term of government and the redistribution of the GST, there would be about $40 million in revenue from that new tax."[10]

- Other parties have also used GST losses as a reason for arguing against royalty rate increases.

  - Hon Rick Mazza MLC, Member for Agriculture Region, Shooters, Fishers and Farmers Party stated:

    > Another major reason I oppose this levy is that in another few years, 60 per cent of the money we raise out of this vulnerable industry will be given to other states and there will be a reduction in our goods and services tax returns. To me it does not make good mathematics to put an impost on our industry that will then bleed out to other states in a few years.[11]

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7 http://www.abc.net.au/news/2017-09-12/gold-royalty-rate-rise-sends-more-money-east-gst/8904180

8 Hansard, Western Australian Legislative Assembly, 12 September 2017, page 3755.

9 Hansard, Western Australian Legislative Assembly, 29 November 2017, page 6298.

10 Ibid, page 6305.

11 Hansard, Western Australian Legislative Council, Tuesday 28 November 2017, page 6106.

- The Hon Christian Porter urged the rejection of the Nationals' proposal to increase the iron ore lease rentals, stating, "WA would lose a lot of the extra revenues as a result of GST reductions. Are modest net revenue gains worth the damage the tax could do to the WA economy? My answer to that question is no."[12]

- The Chamber of Minerals and Energy (CME) argued that the gold royalty rate increase would be pointless due to the GST losses.[13] The CME argued that it would be better for the State to focus on growing the gold industry. Notably however, at its current gold royalty rate, the State loses roughly 93% of the increased royalty revenue from any increase in gold production.[14]

- The Minerals Council of Australia has argued that Western Australia would be better off if it levied no iron ore royalty at all.[15]

- The public awareness of this issue is so strong that the State Government has received letters from the Western Australian public suggesting that royalties be replaced by other charges so as to avoid the GST impacts.

CGC use of cost efficient benchmarks – clarification

- At the hearings, the Productivity Commission raised the issue of using national efficient health pricing as a benchmark for the health assessments.

- The CGC already uses data on the cost of hospital services at nationally efficient prices rather than the average based on what States do.

  - It obtains data on the nationally efficient cost of providing services, nationwide, to each population sub-group (i.e. cross-classified by age, indigeneity, remoteness and socio-economic status). It converts these into per capita costs, and applies the per capita cost to each State's share of that population sub-group.

  - The aggregate result for each State is turned into a factor that is applied to the national total of State expenses. Hence, the final factors reflect efficient prices.

  - As noted by Western Australia at the hearings, there are concerns that the nationally efficient prices determined by IHPA are flawed, as they appear to not fully reflect the impact of remoteness. This appears to have been acknowledged by IHPA.[16]

- Western Australia notes the continuing criticism that cost equalisation is inefficient. What is not widely appreciated is that, in the absence of public sector cost equalisation, efficient equalisation requires broader costs in the economy to be accounted for. It is not efficient to just equalise nominal revenue capacity. Our submissions provide references to academics on this issue.

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[12] https://www.juliebishop.com.au/opinion-western-australia-share-gst-hon-christian-porter-mp/

[13] https://thewest.com.au/news/wa/gold-miners-warn-on-royalties-ng-b88579636z

[14] Western Australia retains less than its 11% population share because its gold royalty rate is less than the national average royalty rate.

[15] http://www.theaustralian.com.au/news/wa-would-be-better-off-without-royalties-minerals-council/news-story/393335e19340add1bdd12b9b73e4d822

[16] Pricing Framework for Australian Public Hospital Services 2018-19, published November 27 2017, pages 26-28

Western Australian contribution to the cost of transitional arrangements

- Western Australia's current funding level is unfair, due to the many flaws in implementing fiscal equalisation.
- Hence, if there is a transition period that involves a delay in, say, equalisation to the average, then during that transition period Western Australia will continue to receive a shortfall relative to a fair funding share.
  - Therefore, Western Australia would already be making a contribution towards the cost of the transition.

Comparative stability of GST and other revenues

- The concern with volatility is not variation in GST revenues, but variation in total State revenues.
  - In the absence of time lags, GST might be very volatile, but that volatility would be offsetting volatility in Western Australia's own source revenues. Stable total revenues will assist with budgeting.
- Time lags are not just a problem for revenue forecasting. Unstable State finances may feed into the broader economy and exacerbate interstate population movements. The attached analysis models population shifts between Western Australia and other States[17] that are attributable to the impact on State budgets of GST time lags.

GST grant modelling assumptions

- We have provided our long-term relativity forecasts and the assumptions underlying them.
- Our long-term forecasts assume that the GST pool will continue to grow at the same per capita rate as in the last year of the Commonwealth's forward estimates (i.e. per capita growth of 4% per annum, equating to total growth of 5.5% per annum).

State position on federal fiscal arrangements relating to Indigenous people

Position on treatment of Indigenous population variables in HFE

- The Productivity Commission's draft report refers to proposals to change the HFE assessment so that it no longer accounts for the on-average higher costs associated with delivering services to Aboriginal and Torres Strait Islander people.
- The Western Australian Government endorses the Productivity Commission's observation that:

  > It is arguably legitimate that [Indigeneity factors] are included in equalisation if they are a significant driver of jurisdictional spending (and they are).[18]

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17 This includes shifts in the distribution of overseas migration among States.

18 Productivity Commission (2017) at p 158.

- The State has responsibilities for services to, and outcomes for, Aboriginal people in Western Australia. The State's expenditure profile is, on average, higher for Aboriginal people than non-Aboriginal people across a range of activities. These higher expenditure needs should properly be reflected in the HFE assessment. The Government is confident that any significant concerns about accuracy or weighting in assessment can be addressed within the current framework.[19]

- The draft report cites various rationales for the removal of Indigeneity factors from the HFE assessment.[20] In general, these arguments assume that poor outcomes for Indigenous people can be at least partly explained by a lack of accountability and effectiveness in State expenditure. On this logic, outcomes would improve if States' Indigenous-specific expenditure was subject to greater Commonwealth oversight, or if the Commonwealth assumed a greater share of direct Indigenous-specific expenditure. The Western Australian Government is not satisfied that these propositions are supported by evidence.

  The Western Australia recommends that the treatment of Indigenous population variables in the HFE remain unchanged, in recognition of the higher average costs associated with delivering State-government services to Aboriginal Western Australians.

Broader position on responsibilities/ accountabilities for outcomes for Indigenous people

- The Productivity Commission's draft report concludes that "[s]ubstantive change and reform to roles and responsibilities across governments for Indigenous policy is an essential precursor to any meaningful reconsideration of the treatment of Indigeneity in HFE".[21]

- The Western Australian Government considers that a clarification of the State's and Commonwealth's respective roles in relation to Aboriginal people is necessary independently of concerns around HFE. **The Government endorses Draft Recommendation 9.3**, in particular the proposal to develop:

> a well-delineated division of responsibilities between the States and the Commonwealth, and establish clear lines and forms of accountability. Policies to address Indigenous disadvantage should be a priority in this regard.[22]

[19] Productivity Commission (2017) at p 157.

[20] Productivity Commission (2017) at pp 14, 201-2, 157, 192; Garnaut, R (2012) *Submission to the GST Distribution Review (Response to the First and Second Interim Reports)*, Canberra, at p 3.

[21] Productivity Commission (2017) at p 143.

[22] Productivity Commission (2017) at p 209.

- Numerous reviews of service provision to Aboriginal people in Western Australia and nationally have identified the lack of coordination between levels of government, and the lack of a stable long-term policy and funding environment, as key barriers to better outcomes.[23] Strengthening Aboriginal engagement and increasing the use of place-based approaches requires a better shared understanding between State and Commonwealth about their respective responsibilities.

- Effectiveness in securing better outcomes for Indigenous people must be the primary metric for the appropriate allocation of roles and functions between Commonwealth, State and local governments. This can only be determined by an objective assessment of the respective strengths and comparative advantages of each level of government. This process should not be unduly influenced by history or by the current mechanisms for allocating funds. If it is determined that activities should shift from one level of government to another, funding mechanisms should be adjusted accordingly.

- The allocation of responsibilities should also recognise that most Indigenous-specific programs are in fact special instances of a broader "mainstream" government function. Rather than conceiving of a unitary "responsibility for Indigenous outcomes"[24], it is more appropriate to recognise that Commonwealth, State and local governments are each responsible for providing particular services to all citizens, and this responsibility includes tailoring policy and programs to Indigenous citizens. For example, while the provision of public housing to remote Aboriginal communities has unique challenges that are not applicable to mainstream public housing, both are part of the same public function. The same logic applies at the Commonwealth level to the administration of unemployment benefits.

  The Western Australian Government supports the Productivity Commission's efforts to put this issue on the agenda, and looks forward to working with the Commonwealth on investigating innovative new approaches to funding and delivering services for Aboriginal Western Australians.

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[23] National Commission of Audit (2014) *Report of the National Commission of Audit*, Ch 8.3 "Indigenous Programmes" (http://www.ncoa.gov.au/report/phase-one/part-b/8-3-indigenous-programmes.html). For a representative sample see: Steering Committee for the Review of Government Service Provision (2016) *Overcoming Indigenous Disadvantage: Key Indicators 2016*, Productivity Commission, Canberra, Ch 3.5 "Interactions across the report"; Hudson, S (2016) *Mapping the Indigenous program and funding maze*, Centre for Independent Studies (https://www.cis.org.au/app/uploads/2016/08/rr18-Full-Report.pdf) at p 26; Commonwealth of Australia (2014) *National Partnership Agreement on Remote Service Delivery: Evaluation 2013* at pp 50-51; Government of Western Australia (2014) *Location Based Expenditure Review 2014*; Closing the Gap Clearinghouse (2013) *What works to overcome Indigenous disadvantage 2011–12* at p 1; Stewart J, Lohoar S & Higgins D (2011) *Effective practices for service delivery coordination in Indigenous communities*, produced for the Closing the Gap Clearinghouse; Standing Committee on Aboriginal and Torres Strait Islander Affairs (Commonwealth) (2011) *Doing Time - Time for Doing Indigenous youth in the criminal justice system*, Ch 8 "Government Policy and Coordination" pp 265-322; Education and Health Standing Committee (WA) (2008) *Ways Forward – Beyond the Blame Game: Some successful initiatives in remote Indigenous communities in WA*, Aboriginal Affairs Legislative Review Reference Group (WA) (1996) *Provision of Services to Aboriginal People in Western Australia: a paper for discussion*; Government of Western Australia (1994) *Report of the Task Force on Aboriginal Social Justice*, p 6.

[24] E.g. Garnaut, R and Fitzgerald, V (2002) *Review of Commonwealth-State Funding: Final Report*, Melbourne at pp 16, 193, 215-7.

Population Impact on Western Australia of GST Time Lags

Time lags in the CGC's process not only exacerbate the fiscal impact of economic cycles on State Governments, but can have a significant impact on population movements, that in turn lead to budgetary pressures.

Table A1 presents estimated differences in GST grants to Western Australia (WA) and the Rest of Australia (ROA) compared to a fully contemporaneous assessment, over the period 2004-05 to 2020-21. That is, the table shows the budget impact of HFE time lags.

Table A1. Impact of HFE time lags on GST payments to Western Australia and the Rest of Australia

	WA	ROA
	$m	$m
2004-05	+387	-387
2005-06	+770	-770
2006-07	+967	-967
2007-08	+791	-791
2008-09	+544	-544
2009-10	+734	-734
2010-11	+1,611	-1,611
2011-12	+1,590	-1,590
2012-13	+1,069	-1,069
2013-14	+1,818	-1,818
2014-15	+202	-202
2015-16	-1,519	+1,519
2016-17	-1,406	+1,406
2017-18	-1,840	+1,840
2018-19	-1,801	+1,801
2019-20	-1,474	+1,474
2020-21	-1,146	+1,146

The time lags affect State budgets, and in turn the economy, through increased (decreased) investment and consumption. This will increase (decrease) demand for labour that in turn leads to population inflow (outflow).

We have modelled the effect on Western Australia's population using a general equilibrium approach. Further details and results are in the Appendix.

The model uses a 2009-10 database (i.e. before the mining boom ramped up) and assumptions about steady state growth in key parameters to simulate a 'reference case' time series projection for WA and ROA. Apart from the choice of base year data, the model does not represent any particular historical period.

The reference case is 'shocked' using the GST time lags in Table A1 from 2004-05 to 2020-21.

Figure A1 provides the results, showing positive and negative net population differences for Western Australia compared to the reference case. Western Australia's mining boom is not reflected in the shock, and its inclusion would exacerbate the population impacts.

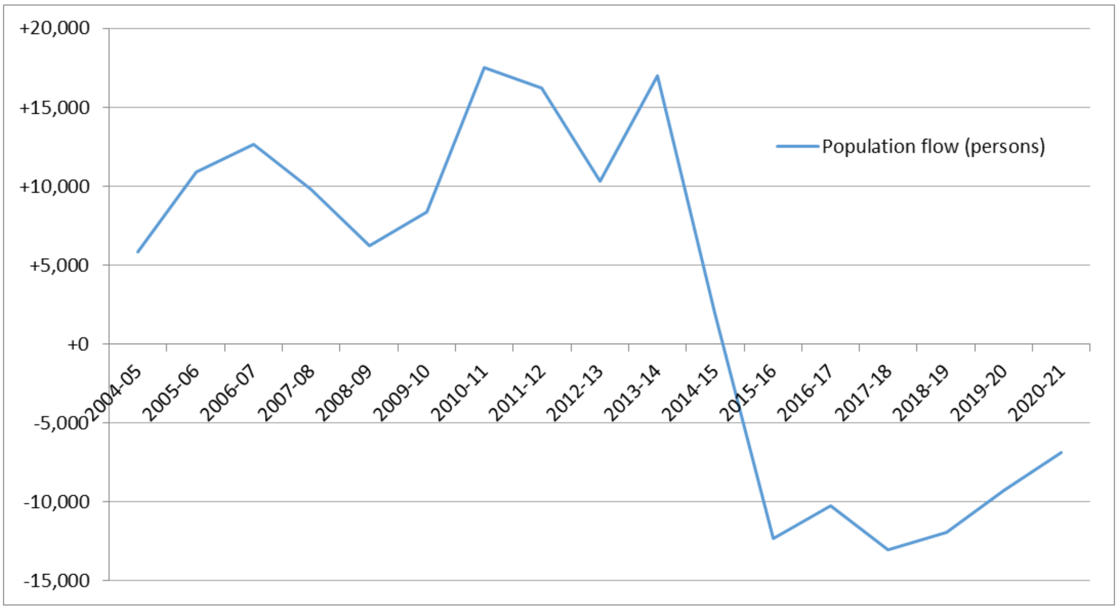
The model assumes that net interstate migration is linked to the change in the demand for labour by occupation in each State. Labour moves between States to equate changes in occupational-specific real wages. Implicit in the model is an exogenous level of net overseas migration. As such, whether inflows and outflows to Western Australia stem from interstate or overseas migration is irrelevant.

The population differences range from an accumulated net inflow of 17,500 persons in 2010-11 to an accumulated net outflow of 13,000 persons in 2017-18. When the small GST time lag impact in 2014-15 (+$202 million) is followed by a substantial impact in 2015-16 (-$1.5 billion), Western Australia's population is projected to transition from an accumulated net inflow of 1,930 persons to an accumulated net outflow of 12,300 persons.

These population movements complicate budget management.

- In earlier years there would be pressure for Western Australia to provide more infrastructure and services for a growing population.
- However, in later years Western Australia could find itself with under-utilised capital and services.

Figure A1. Population flows to and from Western Australia, in response to the changing economic conditions as a result of the GST time lags



Appendix

The model

The model used is the Victoria University Regional Model (VURM) developed by the Centre of Policy Studies (CoPS). VURM is a multi-sector dynamic model of the Australian economy covering the six States and two territories.

The major macroeconomic effects of the GST time lags are shown in Table A2 on the next page, in terms of deviations from the reference case levels for the Western Australian economy.

Major modelling assumptions

- Half the additional GST grants were spent on investment, and the other half on consumption.
- The distribution of the additional GST grants between other States is in proportion to each State's population share.
- GST grant time lags are assumed to generate no technological and no consumer preferences change in the whole economy.
- Net interstate migration is assumed to be linked to the change in the demand for labour by occupation in each State, with labour moving between States to equate changes in occupational-specific real wages.
- Private consumption expenditure of the regional household moves in line with changes in household disposable income.

Table A2: Macroeconomic impacts on the Western Australian economy of GST time lags for Western Australia.

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
	Absolute deviations from the reference case values ($million, 2009-10 prices)																
GSP ($m)	219	446	583	522	425	531	972	1,017	826	1,183	532	-216	-248	-495	-561	-508	-437
Investment ($m)	225	432	527	417	279	367	781	754	496	820	90	-665	-605	-776	-743	-594	-451
Consumption ($m)	338	675	849	724	536	685	1,333	1,340	990	1,502	440	-721	-704	-1,029	-1,053	-899	-734
Exports ($m)	-125	-236	-270	-188	-82	-119	-341	-293	-107	-265	189	635	572	630	565	434	313
Imports ($m)	71	136	166	135	96	130	264	254	178	290	61	-165	-139	-201	-199	-164	-131
Employment (persons)	3,290	6,130	7,240	5,500	3,560	4,800	10,270	9,550	6,030	10,250	770	-8,230	-6,940	-8,810	-8,210	-6,380	-4,740
Population flow (persons)	+5,846	+10,917	+12,672	+9,787	+6,206	+8,377	+17,489	+16,191	+10,327	+17,016	+1,930	-12,300	-10,214	-13,027	-11,962	-9,280	-6,869
	Absolute deviations from the reference case values ($million, 2017-18 prices)																
GSP ($m)	245	498	651	583	475	593	1,086	1,136	923	1,321	594	-241	-277	-553	-627	-567	-488
Investment ($m)	251	483	589	466	311	410	873	842	554	916	100	-742	-675	-867	-830	-664	-503
Consumption ($m)	378	754	949	809	599	765	1,489	1,496	1,106	1,677	491	-805	-786	-1,150	-1,177	-1,004	-820
Exports ($m)	-140	-263	-301	-210	-92	-133	-381	-327	-120	-296	211	709	639	704	631	485	350
Imports ($m)	80	152	186	150	108	146	295	283	199	324	68	-184	-155	-225	-222	-183	-146
Employment (persons)	3,290	6,130	7,240	5,500	3,560	4,800	10,270	9,550	6,030	10,250	770	-8,230	-6,940	-8,810	-8,210	-6,380	-4,740
Population flow (persons)	+5,846	+10,917	+12,672	+9,787	+6,206	+8,377	+17,489	+16,191	+10,327	+17,016	+1,930	-12,300	-10,214	-13,027	-11,962	-9,280	-6,869