C. Productivity Commission modelling

This appendix documents the models, data, calculations and assumptions used to produce the quantitative evidence presented in chapters 3 and 4. It explains how the inquiry operationalised the assessment framework described in appendix B and provides sufficient detail for readers to understand, test and reproduce the results for each framework element.

The appendix first defines the alternative GST arrangements and the common modelling conventions that support comparison across models. It then describes each model using a consistent structure covering its purpose, scope, method, data and assumptions.

Table C.1 – Appendix material and description

Section	Name	Description
C.1	Common modelling assumptions	Defines assumptions used across the modelling and outlines the validation and quality-assurance approach.
C.2	Alternative GST arrangements	Defines the current system and 13 alternatives, including equalisation benchmarks, relativity floors, GST pool treatment and NoWO treatment.
C.3	PC GST Model	Reconstructs GST requirements, relativities, state GST payments and NoWO payments under each arrangement across the history of the GST. Its outputs are inputs to several later models.
C.4	Equity framework measure	Measures how far each arrangement reduces interstate differences in assessed fiscal capacity, using an equalisation rate derived from pre- and post-GST fiscal gaps.
C.5	Efficiency framework measures	Tests how independently applied revenue shocks affect GST payments under each arrangement, producing weighted-average and average-maximum measures of departures from policy neutrality.
C.6	Fiscal sustainability framework measure	Estimates how differences in GST payments would flow through state fiscal balances, debt and interest expenses, and into the fiscal pressure measure.
C.7	Certainty framework measure	Assesses the stability and predictability of outcomes under alternative GST arrangements.
C.8	Reform cameos	Examines selected behavioural or policy channels that are not captured by the mechanical efficiency measures.
C.9	Commodity price hypotheticals	Develops alternative price and production scenarios for iron ore, metallurgical coal and thermal coal.

Section	Name	Description
C.10	NoWO estimates under commodity scenarios	Feeds the commodity scenarios through the GST modelling to estimate their implications for GST distributions and NoWO payments.

Validation and quality assurance

External checks by the Commonwealth Grants Commission (CGC)

The CGC fact-checked the Productivity Commission's GST Model, efficiency framework measurements and reform cameos. The CGC did not check the PC's interpretation of those outputs, as these interpretations are the PC's responsibility.

PC quality assurance

The PC undertook quality assurance of the figures and numerical outputs it produced.

C.1 Common modelling assumptions

This section sets out assumptions common across all the report's modelling. Establishing these common elements supports comparisons across the alternative GST arrangements using equity, efficiency, fiscal sustainability, certainty and commodity models. Any departures, extensions or model-specific inputs are identified in the relevant sections below.

Table C.2 – Assumptions common across all modelling

Assumption	Implication
Modelling is comparative, not predictive.	Results compare arrangements or scenarios consistently and should not be interpreted as forecasts of actual policy, fiscal, commodity-market or behavioural outcomes.
Factors are held constant unless explicitly varied.	State policies, budget settings, populations, revenue and expenditure bases, and other inputs remain unchanged unless the model specifies otherwise.
The modelling generally captures mechanical, first-round effects.	Broader economic, behavioural, policy and institutional responses are excluded unless explicitly modelled (section C.8)
Scenarios are assessed independently.	Interactions between simultaneous policy changes or shocks are generally not captured.
Observed and assessed data provide the baseline.	Alternative arrangements are generally applied retrospectively to historical CGC, Australian Bureau of Statistics and government data rather than to forecast data.
CGC concepts and conventions are retained unless explicitly modified.	GST need, assessed revenue and expenditure, relativities, assessment and application years, and three-year averaging generally follow CGC methodology.
Population is the standard scaling and weighting basis.	Fiscal variables are commonly expressed per capita, and national benchmarks are generally population weighted.

Assumption	Implication
The GST pool is fixed within each model-year unless a top-up or boost is specified.	The total pool changes only where an explicitly modelled addition applies.
Redistribution within a fixed pool is zero-sum.	A higher GST allocation to one state reduces the amount available to other states.
NoWO payments are treated separately from the GST pool.	Where included, NoWO payments cover a modelled shortfall relative to the specified pre-2018 benchmark with the cost attributed to the Australian Government.
Monetary values use consistent price, year and unit conventions.	Amounts are compared on a common basis, with deflation or conversion applied consistently where required.
Positive and negative deviations are generally treated symmetrically.	Measures using absolute values, squared gaps or equivalent methods give gains and losses of the same magnitude equal weight.
Results depend on the selected period and aggregation method.	Averaging and weighting choices may not reflect the relative economic importance of different years, states or revenue categories.
Unmodelled feedback effects are excluded.	Effects on credit ratings, borrowing costs, tax bases, expenditure needs, migration, investment, commodity production and intergovernmental behaviour are omitted unless explicitly stated.
Outputs are conditional estimates.	Results show what the models produce if their data, parameters and assumptions hold; actual outcomes may differ materially.

C.2 Alternative GST arrangements

This section sets out the current and alternative GST arrangements evaluated in this report, including the specific treatment and methodology applied to each. These arrangements are discussed in more detail in chapters 3 and 4 of the report and in appendix B.

Name identifies the alternative GST arrangement modelled; equalisation benchmark refers to the basis for calculating GST needs or relativities; relativity floor is the minimum relativity allowed under the model; pool treatment describes how pool boosts or top-ups are handled; and No Worse Off (NoWO) treatment indicates whether NoWO payments are included.

Table C.3 –Modelled GST arrangements specifications

#	Name	Equalisation benchmark	Floor	Pool treatment	NoWO treatment	Short methodology
1	Current system	Standard State	0.75	Includes pool boost	Excludes NoWO	States below the standard state benchmark, the lower assessed relativity of New South Wales or Victoria, are equalised to that benchmark. The increase in relativity is funded equal per capita (EPC) by all states, including the states that were equalised to the benchmark.
2	Current system with NoWO	Standard State	0.75	Includes pool boost	Includes NoWO	As above, but states below their pre-2018 relativity receive the pre-2018 relativity.
3	Min Change 0.75 floor	Maximum of state with greatest capacity or floor	0.75	Excludes pool boost	Includes NoWO	Applies a 0.75 relativity floor using the CGC binding-floor method. States below their 2018-equivalent relativity receive their pre-2018 system GST amount through NoWO.
4	Min Change 0.5 floor	Maximum of state with greatest capacity or floor	0.5	Excludes pool boost	Includes NoWO	Same as above with a 0.5 floor.
5	Min Change 0.3 floor	Maximum of state with greatest capacity or floor	0.3	Excludes pool boost	Includes NoWO	Same as above with a 0.3 floor.
6	0.75 floor	Maximum of state with greatest capacity or floor	0.75	Includes pool boost	Excludes NoWO	Same as arrangement 3 but with the pool boost and without NoWO.

#	Name	Equalisation benchmark	Floor	Pool treatment	NoWO treatment	Short methodology
7	0.5 floor	Maximum of state with greatest capacity or floor	0.5	Includes pool boost	Excludes NoWO	Same as arrangement 4 but with the pool boost and without NoWO.
8	0.3 floor	Maximum of state with greatest capacity or floor	0.3	Includes pool boost	Excludes NoWO	Same as arrangement 5 but with the pool boost and without NoWO.
9	Pre-2018	State with greatest capacity	-	Excludes pool boost	Excludes NoWO	Horizontal Fiscal Equalisation (HFE) method used by the CGC prior to 2018 reforms – assessed relativities as identified in step 1 of Figure 2.1 of the Interim Report.
10	10% mining discount	State with greatest capacity	-	Excludes pool boost	Excludes NoWO	Model 9 with a 10% discount applied to CGC assessed mining revenue raising capacity.
11	25% mining discount	State with greatest capacity	-	Excludes pool boost	Excludes NoWO	Model 9 with a 25% discount applied to CGC assessed mining revenue raising capacity.
12	50% mining discount	State with greatest capacity	-	Excludes pool boost	Excludes NoWO	Model 9 with a 50% discount applied to CGC assessed mining revenue raising capacity.
13	EPC + NoWO	Equal per capita and assessed GST relativity	-	Excludes pool boost	Includes NoWO	States provided with EPC allocation or pre-2018 allocation (model 9), whichever is greater.
14	90% EPC, 10% HFE	Blend of equal per capita and the state with greatest capacity	-	Excludes pool boost	Excludes NoWO	Post assessment blend of EPC GST allocation (not shown here) and HFE GST allocation (model 9).

For each state, NoWO payments are calculated as the difference between the GST payment under the model or the pre-2018 system, assuming the GST payment for the state was higher in the pre-2018 system. Short methodology provides a brief description of the model rules.

C.3 PC GST Model

Purpose

Question this modelling answers	What would the GST distribution system have looked like if alternative arrangements were applied across the history of GST payments?
Scope	Models 1-14 from section C.2 covering all states and inquiry years 2001 to 2024
Use in report	Features directly used in table 4.1, figure 4.1, figure 4.2, figure 4.3, figure 4.4, figure 4.5, figure 4.6, figure 4.7. Model outputs used in framework measures found in Chapter 4 and documented in sections 0, 0, 0 and 0 here.

Method

The PC GST model is a retrospective, comparative exercise that applies the alternative arrangements set out in section C.2 to a common set of CGC data from 2000–01 to 2024–25. It follows the CGC's methodology to calculate GST requirements and assessed relativities, using three-year averages for application-year relativities and normalising them to a population-weighted national average of one. The results primarily show how each arrangement reallocates a given GST pool among states, rather than changes in aggregate assessed need or funding.

Table C.4 – PC GST Model modelling steps

#	Step
1	Collate CGC population, assessed revenue and assessed expenditure data by category, assessment year, application year and state.
2	For models 10, 11 and 12, apply the specified discount to assessed mining revenue; otherwise use the CGC data unchanged for all other models.
3	For each state and assessment year, calculate GST need as assessed expenditure less assessed revenue, expressed on a per capita basis. This is where revenue and expenditure shocks as per sections 0, C.8 and C.10 are inputted. The subsequent steps remain the same.
4	Calculate the national average GST need per capita, weighted by state populations.
5	Calculate each state's assessed relativity as its GST need per capita divided by the national average GST need per capita.
6	Calculate each state's assessed relativity as its GST need per capita divided by the national average GST need per capita.
7	Apply the model-specific benchmark, floor or other adjustment specified in table X.X to the assessed relativities (save the mining revenue adjustment made above)
8	Repeat these calculations for each assessment year associated with inquiry years 2000-01 – 2024–25.
9	Apply the three-year averaging arrangements to the adjusted assessment-year relativities to derive a final relativity for each model and application year.

#	Step
10	Apply each model's final relativities to the GST pool for the relevant application year to calculate GST payments by state, model and application year.
11	For each state and model, NoWO payments equal any shortfall below the pre-2018 system, excluding pool top-ups or boosts; otherwise, they are zero.

Data

The PC GST model uses only CGC-supplied data. The alternative arrangements identified in table C.3 are applied to these data, with no other inputs used.

Table C.5 – PC GST Model data inputs

Dataset	Variables	Years	Source	Notes
GST methodology data	*Population* (by state, application year and assessment year); *GST pool* (by application year and assessment year); *assessed expenses* (by category, application year and assessment year); *investment* (by application year and assessment year); *own-source revenue* (by category, application year and assessment year); *Commonwealth payments* (by application year and assessment year); and *net borrowing* (by application year and assessment year)	2001–2024	CGC (unpublished)	High-level versions of these data are available in the CGC's annual updates. See, for example, 3-1 Summary in CGC (2024).

Assumptions

Table C.6 – PC GST Model specific assumptions

Assumption	Implication
The GST pool remains fixed for the given arrangement.	Arrangements are assessed using either a pool with or without top ups and boosts as specified in section C.2. Results primarily represent reallocations of a given GST pool between states rather than changes in aggregate assessed need or funding.
The model uses a consistent three-year averaging convention.	Comparisons between scenarios are not driven by different averaging conventions; differences principally reflect the alternative distribution rules being tested.
The standard state is the fiscally stronger of New South Wales and Victoria	The formula takes the minimum of New South Wales and Victoria's assessed relativities and lifts any lower state to at least that benchmark. It does not symmetrically alter high-relativity states before the national redistribution is performed.
The "current system" is treated matured policy.	The "current system" settings assume that all transition arrangements have been completed. These settings are applied retrospectively rather than recreating every historical transition step.

Assumption	Implication
Relativity floors are applied after averaging.	A floor is a redistribution mechanism, not additional national funding. Annual assessed relativities can fall below the floor without the floor necessarily binding once the three-year average is calculated.
Floors are financed internally rather than through additional funding.	A state below a 0.75, 0.50 or 0.30 floor is lifted to the floor. The resulting excess allocation is taken from states above the floor, broadly in proportion to the population of states eligible to absorb the adjustment.
Mining discounts are constructed to leave the aggregate GST pool unchanged.	The scenario isolates the distributional effect of giving less weight to mining revenue capacity, rather than modelling a smaller national GST pool. The offset also means the effect is not equivalent to simply deleting a proportion of mining revenue from the assessment.
EPC/HFE blends are linear combinations of relativities imposed before three-year averaging.	The model assumes the two systems can be linearly blended at the relativity level. The selected weight mechanically pulls relativities toward 1.0. Results depend on both the chosen EPC/HFE weight and the specified sequencing of blending before averaging.
Mining revenue discount is a concentration cap, not a fixed percentage.	In highly concentrated commodities the required revenue discount can be much larger than the stated gap. For example, WA iron-ore requires a 98.28% discount to satisfy a 50 percentage-point share-gap cap.

C.4 Equity framework measure

Purpose

Question this section answers	Measures equity under the PC framework discussed in chapter 3, chapter 4 and appendix B. More specifically, it seeks to answer: *'How much does each GST arrangement reduce differences in fiscal capacity between states?'*
Scope	Measures the equity effects of models 1-14 in section C.2, across all states and years from 2001–02 to 2024–25.
Use in report	Table 3.2, table 4.1, figure 4.1, figure 4.2, figure 4.3, figure 4.4, figure 4.5, figure 4.6, figure 4.7.

Method

The equity framework measure, the equalisation rate, uses per-capita GST-need from the CGC assessments and GST distribution systems from the PC GST Model in section C.3 to assess how far each state is from the equalisation benchmark before and after GST distribution. This is repeated for each model described in section C.2 and across years 2001–02 to 2024–25.

Table C.7 – Steps for the equity framework measure

#	Step
1	Collate the modelling inputs for each state, year and arrangement, including the GST pool, assessed GST need, GST payments received and NoWO data from the PC GST model in section C.3.
2	Calculate the equal per capita assessed-need benchmark for each year and arrangement as the population-weighted average assessed GST need across states.
3	Calculate each state's pre-GST fiscal gap as its assessed GST need less the equal per capita assessed-need benchmark, i.e. the deviation from the mean.
4	Calculate each state's post-GST residual gap as its assessed GST need less the GST it receives under the relevant arrangement.
5	Calculate pre-GST dispersion for each model/year/scenario as the population-weighted root mean square of the states' pre-GST fiscal gaps.
6	Calculate post-GST residual dispersion for each model/year/scenario as the population-weighted root mean square of states' post-GST residual gaps.
7	Calculate the equalisation rate as 1 (post-GST residual dispersion/pre-GST dispersion)
8	Calculate the equalisation rate across years for each arrangement as the average of the annual equalisation rates over the relevant modelling period.

Data

The equalisation rate exclusively used data from the PC GST model, built on CGC data. See section C.3 for details.

Table C.8 – Data inputs for the equity framework measure

Dataset	Variables	Years	Source	Notes
PC GST Model outputs	Per-capita GST need by state, year and model; Per-capita GST amount by state, year and model; Per-capita NoWO amount by state, year and model	2001–02 to 2024–25	Internal PC calculations	PC GST model outputs verified by CGC

Assumptions

Table C.9 – Specific assumptions for the equity framework measure

Assumption	Implication
GST need scales with the size of the GST pool.	Including the pool boost changes the level of GST need, so arrangements with a pool boost produce different equity outcomes from otherwise equivalent arrangements without the pool boost. The PC has verified this assumption with the CGC.
Equal per capita assessed need is the pre-GST reference point.	Interstate fiscal dispersion before GST is measured relative to the population-weighted national average assessed need per capita.
Full equalisation corresponds to GST exactly meeting assessed need.	The post-GST target is a zero residual gap between assessed need and GST received for every state.

Assumption	Implication
Positive and negative fiscal gaps are treated symmetrically.	The EQ rate calculation squares gaps, so under-compensation and over-compensation of the same magnitude contribute equally to residual dispersion.
Each inquiry year is given equal weight in the across-years average.	The headline average EQ rate is the simple mean of annual equalisation rates, rather than being weighted by population, GST pool size or fiscal need across years.

C.5 Efficiency framework measures

Purpose

Question this section answers	Measures efficiency under the PC framework discussed in chapter 3, chapter 4 and appendix B. Specifically, it addresses the question: "How much departure from policy neutrality is there under each alternative GST distribution system?"
Scope	Models the efficiency effects of models 1-14 in table C.3 across all states using data from the 2024 inquiry year.
Use in report	Table 3.1, table 4.1, figure 4.1, figure 4.2, figure 4.3, figure 4.4, figure 4.5, figure 4.6, figure 4.7

Method

These measures use the PC GST Model in section C.3 to measure how much each state's GST distribution would be affected if a $1 million revenue shock was independently applied to 15 different revenue (table C.10) heads for each arrangement in the 2024 inquiry year. The PC measured this in two ways: the weighted average effect, and the average maximum effect.

Table C.10 – Revenue heads considered in the efficiency measures

#	Revenue category
1	Payroll tax
2	Land tax
3	Stamp duty on conveyances
4	Insurance tax
5	Light vehicles
6	Heavy vehicles
7	Motor stamp duty
8	Iron ore
9	Coal
10	Gold
11	Copper
12	Lithium

#	Revenue category
13	Nickel
14	Other minerals
15	Other revenue

Table C.11 – Initial steps common to both efficicency measures

#	Step
A1	Collate the modelling inputs for each state and arrangement, including the GST pool, assessed GST need, GST received and NoWO data from the PC GST model in section C.3.
A2	A positive $1 million revenue shock[1] was introduced to the model in the 2024–25 assessment year on the first revenue head in table C.10. The additional expenditure necessitated from the shock was assumed to be spent on an expenditure category the CGC assesses on an EPC basis.
A3	The absolute change in each state's GST distribution (in dollars), aggregated over the three years where this shock would affect GST relativities, was converted into a percentage relative to the size of the revenue shock ($1 million) for all states, and results recorded.
A4	The absolute percentage changes from step 3 were filtered to exclude the effects for any state which has a 0% share of the revenue base which was shocked. These outputs are known as the impacts on GST payments.
A5	The model was reset, and steps A2-A5 were repeated until all revenue heads had been shocked.

Table C.12 – Subsequent steps for the weighted average measure

#	Step
B1	For the first alternative GST distribution system in table C.3, the sum of the non-excluded impacts on GST payments was taken for each revenue shock and recorded.
B2	For each shocked revenue head, the total effect calculated in step B1 was multiplied by the total assessed revenue under that revenue head in the 2024 inquiry year. The results of this multiplication were added across all shocked revenue heads.
B3	For each shocked revenue head, the total assessed revenue under that revenue head in the 2024 inquiry year was multiplied by the number of states which had a positive, non-zero share of that revenue base. The results of this multiplication were added across all shocked revenue heads.
B4	The output from step B2 is divided by the output in step B3 to obtain the weighted average GST effect under that distribution model. Steps B1-B3 were repeated for all distribution systems in table C.3.

The described methodology is equivalent to calculating a weighted average (weighted across the revenue heads by number of states and total assessed revenue) of the average absolute impact on GST payments (averaged across the states, excluding states with a zero share of the revenue base).

For example, the weighted average effect under the current system is the sum product of columns (1) and (4) in table C.13.

[1] The effect is identical regardless of which state is assessed the shock.

Table C.13 – Weighted average impact on GST payments inputs for the current system

Revenue head	(1) Average absolute impact on GST payments (%)[a]	(2) Total assessed revenue ($b)	(3) Number of states	(4) Weighting (%)[b]
Payroll tax	0.5	415.3	8	21.9
Land tax	4.7	200.2	8	10.5
Stamp duty on conveyances	1.7	333.6	8	17.6
Insurance tax	0.7	86.2	8	4.5
Light vehicles	0.8	89.8	8	4.7
Heavy vehicles	1.2	18.9	8	1.0
Motor stamp duty	1.0	46.2	8	2.4
Iron ore	0.3	85.1	4	2.2
Coal	14.1	85.4	5	2.8
Gold	2.0	12.2	7	0.6
Copper	9.3	3.8	5	0.1
Lithium	0.0	2.1	1	0.0
Nickel	0.0	0.0	0	0.0
Other minerals	15.7	30.8	7	1.4
Other revenue	0.0	572.9	8	30.2

a. The average absolute impact on GST payments excludes the impacts for states that do not have a share of that revenue base. The average of the remaining effects is unweighted. **b.** The weighting is the product of columns (2) and (3) for each revenue head as a share of the total sum product of the two columns. Effectively, this increases the weighting for revenue heads with higher total assessed revenue and a higher number of active states.

Source: PC analysis based on CGC (unpublished data)

Table C.14 – subsequent modelling steps for average maximum measure

#	Step
C1	For the first alternative GST distribution system in table C.3, the maximum non-excluded impact on GST payments across all shocked revenue heads was taken for each state.
C2	An unweighted average of the maximums recorded in step C1 was taken. This is the average maximum measure for the GST distribution system.
C3	Steps C1 and C2 were repeated for all alternative GST distribution systems in table C.3.

Data

This modelling used the outputs from the PC GST Model and CGC data.

Table C.15 – Efficiency framework measure data sources

Dataset	Variables	Years	Source	Notes
PC GST model outputs	GST payments; NoWO payments by state, year and model	2024 inquiry year	Internal PC calculations	–
Assessed Budget	Assessed revenue by revenue head and state	2024–25	CGC (2024)	–

Assumptions

In general, the modelling assumptions below isolate the modelled GST effects by holding other factors constant and treating policy, revenue and behavioural responses in a simplified way.

Table C.16 – Efficiency framework measures specific assumptions

Assumption	Implication
A revenue shock of size $1 million allows the policy neutrality characteristics of the different GST distribution systems to be identified.	In some cases, a $1 million revenue shock does not activate features of a particular distribution system, where larger shocks could (for example, a relativity floor). This means these results are not necessarily indicative of policy neutrality departures for larger revenue shocks.
All revenue raised through revenue shocks is spent in expenditure categories which the CGC assess on an equal per capita basis.	The effect of a revenue shock on a state's GST distribution depends on the difference between their assessed share of the shocked revenue base, and the assessed share of the expenditure base where that revenue is spent (the greater the difference, the greater the effect). If the actual distribution of the expense base where the revenue is spent differs markedly from the distribution of the population, the results could change, particularly for distribution systems closer to the pre-2018 system.
All revenue shocks occur independently, and all other variables are held constant during each shock.	If multiple shocks occurred at once, they may interact in ways that produce different results to the scenarios modelled in this measure.
All revenue shocks do not affect the revenue bases of states – in effect, this reflects changes in rates (for example, tax rates) not revenue bases.	If revenue shocks materialised due to changes in revenue bases (for example, more businesses operating in a state, or a greater number of property transactions), the efficiency effects between states could differ.
In the weighted average measure, revenue bases with more assessed revenue and	Strong departures from policy neutrality due to shocks to revenue heads with low assessed revenue and/or a low number of active states are not equally represented in the weighted average measure.

Assumption	Implication
more active states are given higher weighting.	
Positive and negative impact on GST payments of equal magnitude are weighted equally.	The PC has given equal weighting in this measure to cases where states receive less GST revenue from a policy change, compared to cases where states receive more.
A state's policymaking incentives are unaffected by impacts on GST payments (of any size) resulting from shocks to revenue bases of which they have no share.	GST effects from shocks to revenue bases of which states do not have any share have been excluded.

C.6 Fiscal sustainability framework measure

Purpose

Question this section answers	What would the impact of alternative GST arrangements have been on states' fiscal sustainability, if each had been in place from 2001–02 to 2024–25?
Scope	Models the state fiscal sustainability effects of models 1-14 in table 1.1, across all states and years from 2001 - 2024.
Used in	Table 3.3, table 4.1, figure 4.1, figure 4.2, figure 4.3, figure 4.4, figure 4.5, figure 4.6, figure 4.7

Method

To compare the impact that different GST distribution systems would have had on states' interest expenses, the PC estimated the effects GST payments would have had under each scenario on state fiscal positions using data from the ABS Government Finance Statistics (GFS) (2001–02 to 2024–25). To achieve this, the PC developed a mechanical scenario model that estimates how changes in GST payments would flow through to states' fiscal balances, debt (L2) and interest expenses. GST shocks are assumed to flow mechanically to the stock of debt, which is then used to calculate the marginal change in interest expenses.

The purpose of the modelling is not to estimate states' actual fiscal outcomes under alternative GST distribution systems. Rather, it provides a consistent framework for comparing the relative fiscal sustainability impacts of different GST distribution systems. The model holds state policy responses and other effects (such as changes in credit ratings) constant, to isolate the impact of differences in GST distributions (assumptions table). Consequently, the results should not be interpreted as likely fiscal outcomes.

GST is a general government revenue source, so the model applies GST shocks directly to the general government budget balance, debt and interest expenses, while Public Non-Financial Corporation (PNFC) finances are held unchanged. For Total Non-Financial Public Sector (TNFPS) results, the PC uses observed consolidated TNFPS baseline amounts, which remove transactions between a state's general government sector and its own PNFCs (ABS 2015). The modelled general government changes are applied to consolidated TNFPS baseline amounts.

Table C.17 – Fiscal sustainability framework measure modelling steps

#	Step
1	Establish the observed general government baseline, starting with each state or territory's observed general government revenue, expenses, debt and interest expenses from the GFS. These provide the baseline against which each alternative GST distribution system is assessed.
2	For each state and year, calculate the difference between observed GST and NoWO payments (from final budget outcomes) and the GST payments (including NoWO where relevant) under each alternative arrangement (from the PC GST model). A positive difference improves the general government fiscal position, while a negative difference weakens it.
3	The change in the fiscal position is assumed to flow mechanically into debt relative to the observed baseline. Lower GST revenue increases debt, while higher GST revenue reduces debt.
4	Calculate the marginal interest effect by applying the modelled borrowing rate to the additional or avoided debt generated by the GST change. Interest effects from earlier years continue to affect later years, so the debt and interest impacts accumulate over the model period.
5	Add the GST revenue change and associated marginal interest and debt impacts to the observed general government baseline to produce alternative revenue, expenses, fiscal balance, interest expense and debt outcomes.
6	Construct the consolidated TNFPS baseline by combining general government and PNFC amounts after removing transactions and positions between the state's own general government and PNFC sectors. Apply the modelled GST, debt and marginal interest changes to this baseline, while holding PNFC finances otherwise unchanged.
7	Use the modelled general government and TNFPS outcomes to calculate the interest to revenue ratio in 2024–25 for each alternative arrangement.
8	Use the modelled interest to revenue ratios to calculate an aggregate fiscal pressure score for each alternative arrangement (measure explained in appendix B).

Data

Table C.18 – Fiscal sustainability framework measure data inputs

Dataset	Variables	Years	Source	Notes
State general government and public non-financial corporation GFS	Total expenses; total revenue; net acquisition of non-financial assets; Interest n.e.c.; gross debt (L2); net debt (L2)	1998-99 to 2024–25	ABS (unpublished)	Constant prices calculated using implicit price deflator of GDP. L2 debt includes debt securities, loans, SDRs, and currency and deposits (ABS 2015).
Australian System of National Accounts, 2024–25	Gross domestic product implicit price deflator	1998-99 to 2024–25	ABS (2025)	Rebased to 2024–25
Final Budget Outcomes	GST payments; HFE transition payments (NoWO payments)	2000-01 to 2024–25	Commonwealth of Australia (2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025)	–
PC GST model	GST payments; NoWO payments	2001–02 to 2024–25	PC using CGC (unpublished)	

Assumptions

Table C.19 – Specific assumptions in the fiscal sustainability framework measure

Assumption	Implication
GST shocks are assumed to flow mechanically to debt, with no offsetting policy response.	This may overstate the impact of GST changes on debt and budget positions if states would instead adjust spending, taxation, asset sales, cash balances or other balance-sheet items.
Interest expenses on the existing debt stock are as observed historically; marginal interest from GST-driven debt changes is modelled and added to or subtracted from observed interest.	This isolates the marginal effect of GST changes but does not capture broader effects across the existing debt portfolio.
The marginal borrowing rate on GST-driven debt is proxied by the average borrowing rate of existing debt, calculated as observed interest expenses divided by average gross debt (two-year average),	This assumption may understate or overstate the cost of marginal borrowing where current borrowing rates differ materially from the average cost of the existing debt stock.

Assumption	Implication
excluding amounts relating to a state's own PNFCs.	
Each year's additional or avoided debt is treated as fixed-rate borrowing with a 10-year term and is refinanced every 10 years.	This is a simplifying assumption, based on the majority of semis being issued with a maturity of 5–15 years (Batchelor and Roberts 2024, p. 53). The model will not reflect the actual timing at which debt is refinanced and exposed to new interest rates.
In each year, marginal interest costs are financed through additional borrowing and carried into the marginal debt stock in subsequent years. Marginal interest savings reduce that debt stock, this allows debt impacts to accumulate over the period.	This may overstate adverse debt impacts if governments would instead offset higher interest costs through adjustments such as spending reductions. It may also overstate favourable impacts if governments would use interest savings for purposes other than repaying debt.
Changes to interest expenses in the first year the debt is accrued are halved, assuming borrowing or debt reduction occurs progressively over the year.	If the GST shock occurs earlier or later in the year, first-year interest effects may be under or overstated. This is a timing convention rather than an observed financing pattern.
The same cumulative debt impact is applied to net debt and gross debt.	This assumes GST-driven fiscal changes affect net debt and gross debt one-for-one.
The model applies a zero lower bound to the relevant gross debt and associated interest expenses. Once this debt is fully repaid, further fiscal gains are not modelled as negative debt or financial asset accumulation.	This may understate benefits where further fiscal gains would instead be used to acquire financial assets or earn investment income.
For TNFPS results, the modelled GST, debt and marginal interest impacts are applied to the consolidated TNFPS baseline, while PNFC finances are otherwise held unchanged. Marginal borrowing is assumed to be from lenders other than the state's own PNFCs.	The model does not capture interactions between general government and PNFCs. In practice, TNFPS outcomes may differ if PNFC borrowing, investment, dividends, equity injections or transfers respond to changes in GST outcomes.

C.7 Certainty framework measure

Purpose

Question addressed	What would the impact of alternative GST arrangements have been on states' GST revenue certainty, if each had been in place from 2001–02 to 2024–25?
Scope	Models the state GST revenue certainty effects of models 1-14 in table C.3, across all states and years from 2001–2024.
Use in report	Figure 3.9, table 4.1, figure 4.1, figure 4.2, figure 4.3, figure 4.4, figure 4.5, figure 4.6, figure 4.7

Method

This measure uses the PC GST model in section C.3 to measure what the year-on-year volatility of each state's GST revenue would have been if different GST distribution systems existed between 2001–02 and 2024–25. This measure isolates only the volatility driven by the GST distribution system, controlling for volatility driven by changes to state populations or the size of the GST pool.

Table C.20 – Certainty framework measure modelling steps

#	Step
1	The modelling inputs for each state and arrangement, including the GST pool, assessed GST need, GST received and NoWO data from the PC GST model in section C.3, were collated.
2	For the first GST distribution system in table C.3, the GST received for each state in each year (inclusive of any payments under the NoWO guarantee) was converted to a per capita basis, using the populations of the relevant states in the relevant years.
3	The GST revenues per capita from step 2 were adjusted to control for size in the growth of the GST pool. This adjustment was made by dividing the per capita revenues by the percentage growth in the GST pool between the base year (2001–02) and the relevant year, excluding the GST pool boost.
4	For each state in each year after the base year, the absolute percentage change in the pool growth adjusted GST revenues per capita (from step 3) was calculated. These absolute percentage changes – or volatilities – were averaged (unweighted), and this value is reported as the certainty measure for that GST distribution model.
5	Steps 2-4 were repeated for all remaining GST distribution systems in table C.3.

Data

Table C.21 – Certainty framework measure data inputs

Dataset	Variables	Years	Source	Notes
PC GST model outputs	GST payments NoWO payments	2001 to 2024 inquiry years	Internal PC calculations	–
GST methodology data	Population by state, application year	2001 to 2024 inquiry years	CGC (unpublished)	–

Assumptions

Table C.22 – Certainty framework measure specific assumptions

Assumption	Implication
All else equal, more volatile GST revenues make state fiscal planning more challenging.	The PC has used this measure as an assessment of how challenging a GST distribution system would make state fiscal planning.
The fiscal uncertainty created by a particular GST distribution system can be measured by the volatility it produces separate from the growth in the GST pool and changes to the population distribution (which would affect all distribution systems).	The outputs of the measure do not represent actual or expected volatilities in GST revenue for any state in any year.
The lag in CGC assessments means that any exacerbating/smoothing effect GST revenue would have had on total revenue volatility is not structural: unanticipated revenue changes to other revenue heads do not influence the GST distribution in the same year.	Assessments of what total revenue volatility under different GST distribution systems would have been are not a reliable measure of the certainty provided by a particular GST distribution system.
The fiscal uncertainty created by a particular GST distribution system is better measured by year-on-year volatility in adjusted GST revenue compared to other measures (such as standard deviation of adjusted GST revenues).	Adjusted GST revenues which fluctuate more from year-to-year are assessed as more uncertain than adjusted GST revenues which follow a consistent trend through time.

C.8 Reform cameos

Purpose

Question addressed	How does the GST distribution system affect states' incentives to undertake tax reform, and how do those effects differ under the pre-2018 system, the current system, and the current system including No Worse Off (NoWO) payments?
Scope	Mechanical/static modelling of the GST-distribution consequences of state tax reforms, including rate effects and, where explicitly modelled, tax-base/behavioural effects. The analysis isolates GST-related payment effects rather than evaluating the reforms as a whole
Use in report	Figure 3.4, figure 3.5

Method

This modelling builds on the PC GST model in section C.3, introducing reform scenarios that alter specified revenue, expenditure or distribution settings while other assessment inputs are held constant. Where relevant, an explicit elasticity is applied to capture behavioural changes in the tax base.

Results are static comparative estimates based on 2024–25 assessment data and are reported as mature effects after the reform has entered all three assessment years; they are not forecasts. The CGC reviewed key calculations and provided technical feedback

Table C.23 – Reform cameos modelling steps

#	Step
1	**Define the reform scenario.** Specify the tax policy change to be modelled and whether it is undertaken unilaterally by one state or multilaterally by all states. For the cameos, the reforms are either 100% abolition of insurance taxes or 100% abolition of conveyance duty with replacement by a broad land tax
2	**Identify the affected assessed revenue base.** Map the reform to the relevant CGC tax base. For insurance tax, use the 2024–25 assessed insurance-tax base; for the stamp-duty reform, use the 2024–25 conveyance-duty base and proxy the broad land-tax base using ABS total land values.
3	**Calculate the direct policy change on the static base.** Apply the reform to the relevant tax rate or revenue item while initially holding the underlying tax base and other assessment inputs constant. For the stamp-duty-to-land-tax cameo, set the replacement broad land tax so that the reform is revenue-neutral on the static base before GST and NoWO effects.
4	**Calculate the GST rate effect.** Recalculate assessed revenue capacity after the reform changes the national-average policy setting. The effect depends on the reforming state's share of the relevant tax base relative to its population share, and under the current system is subsequently affected by the standard-state benchmark.
5	**Apply the behavioural response to the tax base where relevant.** Adjust the affected base using the elasticity assumptions specified below. Apply the behavioural response with a one-year lag.
6	**Recalculate the GST base effect.** Feed the behaviourally adjusted tax base back through the GST assessment to capture the additional effect arising from changes in measured revenue capacity, rather than the tax-rate change alone. This is kept separate conceptually from the rate effect because the base effect depends on uncertain behavioural elasticities.

#	Step
7	**Apply the reform through the three-year assessment structure.** Introduce the reform and any behavioural lag into the assessment years while continuing to hold the 2024–25 assessment settings and other model inputs constant.
8	**Calculate results under each GST-distribution architecture.** Estimate the change in GST payments and relativities under the pre-2018 system, the current system excluding NoWO, and, where relevant, the current system including NoWO payments.
9	**Repeat across reforming states and reform configurations.** For unilateral scenarios, run the reform separately for each state while other states' policies remain unchanged. For multilateral scenarios, apply the reform to all states simultaneously so that the resulting change in the national-average assessment is captured.

Data

Table C.24 – Reform cameos data inputs

Dataset	Variables	Years	Source	Notes
CGC assessment data	Revenue and expenditure assessments by category, state and year; tax/revenue bases; population inputs; Commonwealth payments; other inputs used to calculate assessed GST needs and relativities.	2024–25	CGC (unpublished)	Held constant in the static modelling.
ABS Australian System of National Accounts	Table 61 – Total land values by state/territory,	2024–25	ABS (2026)	Used as the proxy base for the broad land tax

Table C.25 – Summary of tax-base elasticities

These form the basis for behavioural effects one tax changes are applied to given bases

Tax	Elasticity	Interpretation	Sources
Payroll tax	Effects were largely statistically insignificant in both cited papers.	NA	Majeed and Sinning (2019; Steinhauser et al. (2018)
Land tax	-0.054 to -0.062.	A 10% increase in the tax rate is estimated to reduce the unimproved value of taxable properties by about 0.6%.	Steinhauser et al. (2018)
Stamp duty on conveyances	CGC data: -0.29 to -0.43. CoreLogic data: -0.01 to -0.37.	A 10 percent increase in the tax rate reduces the overall value of sold properties by 0.1 to 6 percent.	Dachis et al. (2012); Davidoff and Leigh (2013); Productivity Commission (2018); Steinhauser et al. (2018)

Tax	Elasticity	Interpretation	Sources
	Davidoff and Leigh: -0.3 to -0.6		
Insurance tax	-0.057	A 1 percentage point increase in the tax rate is estimated to reduce expenditure on premiums by about 0.6%.	Steinhauser et al. (2018)
Motor taxes	CGC data: -0.056. HILDA data: -0.035.	A 10 percent increase in licence fees reduces vehicle ownership by 0.4 to 0.6 percent.	Steinhauser et al. (2018)
Mining royalties	The geographic distribution of different minerals, as well as their quality and value, preclude the calculation of a robust elasticity capturing the demand for minerals in Australia in response to changes in mining royalty rate. A range of global mineral-specific rates can be found in Shojaeddini et al. (2025);		Shojaeddini et al. (2025); Steinhauser et al. (2018)

Assumptions

While we use evidence to model the expected effects of tax reform, the results can be highly sensitive to key assumptions, particularly those relating to behavioural responses and broader economy-wide effects.

Table C.26– Reform cameos specific assumptions

Assumption	Implication
2024–25 assessment data are held constant.	Results are mechanical comparative estimates, not forecasts of future GST pools, tax bases, populations, assessment values or future CGC methodology.
Results are reported as "mature static effects" with dates only used to reflect the assessment structure.	The reported result represents the effect once the reform is reflected in all three assessment years; it should not be interpreted as a forecast for a particular future financial year.
Broader fiscal and economic effects are excluded.	Results measure GST-related payment effects only and does not reflect potential broader housing-market, insurance-market, distributional or transition effects. As such, results should not be interpreted as the net benefit or cost of the underlying reform.
Insurance-tax reform is modelled as 100% abolition	GST effects vary with the assumed behavioural increase in the insurance-premium base; ranges should be reported where the two elasticity assumptions produce different results.
Stamp-duty reform is modelled as 100% abolition of conveyance duty, replaced by a broad land tax that is revenue-neutral.	The results can be highly sensitive to the behavioural assumption. The ABS total-land-value measure is a proxy for the broad land-tax base rather than necessarily the base a future CGC assessment would adopt.

Assumption	Implication
Future CGC treatment is assumed rather than predicted.	The modelling does not imply that the CGC would use the same tax base, elasticity, reform classification or methodology in a future assessment.

C.9 Commodity price hypotheticals

Purpose

Question addressed	What commodity price paths are plausible under different hypothetical scenarios?
Scope	Price and production scenarios for iron ore, metallurgical coal and thermal coal, 2025 to 2035.
Used in	Table 3.4

Method

Hypothetical prices are derived using scenario-based structural market approach. For iron ore and metallurgical coal, the model flexes key assumptions around steel demand, steelmaking technology, domestic production and competing seaborne supply to estimate the residual call on Australian supply. For thermal coal, it adjusts the seaborne market balance more directly. These market outcomes are then mapped onto global cost curves to identify the marginal producer and derive indicative benchmark prices for each scenario.

Table C.27– Commodity price hypotheticals steps

#	Step
1	Establish the baseline market outlook using underlying assumptions for steel demand, steel production, steelmaking technology, domestic commodity production, seaborne trade and global supply for iron ore, metallurgical coal and thermal coal.
2	Define alternative structural scenarios by varying the key long-run drivers of commodity demand and supply, including Chinese and Indian steel demand, steel exports, blast furnace penetration, scrap use and the timing or scale of competing supply.
3	Translate the scenario assumptions into commodity demand requirements by estimating the effect of changes in steel production and steelmaking technology on iron ore and metallurgical coal consumption, including the amount of demand that must be met through seaborne markets.
4	Adjust competing domestic and seaborne supply for iron ore and metallurgical coal, including production from major suppliers such as China, India, Brazil, Guinea, Mongolia, Russia and North America, to determine how much of global demand remains available to Australian producers.
5	Estimate the residual call on Australian iron ore and metallurgical coal supply after accounting for global demand, domestic production and competing exports. This determines the volume of Australian production required to balance the market under each scenario.

#	Step
6	Model thermal coal separately through the seaborne market balance, applying scenario assumptions to the size of the contestable seaborne market and the supply required to meet it, rather than using the detailed steel-production framework applied to iron ore and metallurgical coal.
7	Map required production onto global supply cost curves to identify the marginal producer or relevant cost percentile under each scenario. Higher or lower demand for marginal supply changes the point at which each market clears.
8	Derive and reconcile the scenario outcomes, converting the marginal cost-curve position into indicative benchmark commodity prices and summarising the corresponding price and Australian production outcomes for 2030 and 2035.

The key flex variables used in steps 3-6 of table C.28 are listed below. These variables were identified through expert advice and validated through consultation.

Table C.28 – Commodity price hypotheticals key flex variables

Domain	Key flex variables	Commodities impacted
Steel demand	Chinese steel production / demand	Iron ore, met coal
	Chinese net steel exports	Iron ore, met coal
	Chinese construction demand	Iron ore, met coal
	Chinese manufacturing demand	Iron ore, met coal
	Indian steel production	Iron ore, met coal
Steel technology	Blast furnace share – China	Iron ore, met coal
	Blast furnace share – India	Iron ore, met coal
	Chinese scrap use	Iron ore
	Indian scrap use	Iron ore
Iron ore supply	Chinese domestic iron ore supply	Iron ore
	Indian domestic iron ore supply / import requirement	Iron ore
	Vale exports	Iron ore
	Simandou output	Iron ore
Met coal supply	Chinese domestic HCC supply	Met coal
	Mongolian exports	Met coal
	Russian exports	Met coal
	North American exports	Met coal
Thermal coal supply	Global seaborne supply	Thermal coal

Source: Wood Mackenzie (2025a, 2025b, 2026b, 2026c, 2026a, 2026d).

Data

This modelling used Wood Mackenzie global trade and mine-level cost curve data as the base case, which was then shocked using the assumptions outlined above. All data is Wood Mackenzie proprietary property.

Table C.29 – Commodity price hypotheticals data inputs

Dataset	Variables	Years	Source	Notes
Global steel market forecasts	• Crude steel production; pig iron production; implied BF share; electric steelmaking; scrap inputs; net exports (direct)	2025 – 2035	Wood Mackenzie (2026c)	Data is Wood Mackenzie proprietary property.
Global iron ore market forecasts	• Seaborne imports; seaborne exports; seaborne exports by company; domestic production	2025 – 2035	Wood Mackenzie (2026b)	Data is Wood Mackenzie proprietary property.
Global metallurgical coal market forecasts	• Seaborne imports; landborne imports; seaborne exports; landborne imports; seaborne exports by company; domestic production	2025 – 2035	Wood Mackenzie (2025a)	Data is Wood Mackenzie proprietary property.
Global thermal coal market forecasts	• Seaborne imports; landborne imports; seaborne exports; landborne imports; seaborne exports by company; domestic production	2025 – 2035	Wood Mackenzie (2025b)	Data is Wood Mackenzie proprietary property.
Iron ore mine-level cost curve forecasts	• Supply costs by mine; supply quantity by mine	2025 – 2035	Wood Mackenzie (2026d)	Data is Wood Mackenzie proprietary property.
Coal mine-level cost curve forecasts	• Supply costs by mine; supply quantity by mine	2025 - 2035	Wood Mackenzie (2026a)	Data is Wood Mackenzie proprietary property.

Assumptions

Table C.30 – Commodity price hypotheticals specific assumptions

Assumption	Implication
Scenarios represent alternative structural worlds, not ranked forecasts.	Hypothetical prices should be interpreted through their underlying mechanisms; scenario 2 does not necessarily generate a lower/higher price than scenario 1 for every commodity.
Commodity prices are determined by the marginal tonne on the global cost curve.	Linear increases in demand can produce nonlinear price effects because the short-run supply curve is often nonlinear: as demand rises, increasingly higher-cost suppliers become the marginal supplier, supporting increasingly higher market prices.
Australia is largely a price taker.	Australian producers respond to global market conditions rather than setting the benchmark price.
The key variable is the residual call on seaborne supply.	Domestic production in China and India, and supply from other exporters, can materially change demand for Australian exports even if global consumption changes only modestly.
China remains the dominant structural demand driver.	Changes in Chinese steel demand, exports, scrap use and steelmaking technology have disproportionate effects on iron ore and metallurgical coal.
India becomes increasingly important at the margin in some scenarios.	Faster or slower Indian industrialisation can materially alter long-run demand, particularly as Chinese demand matures.
Steelmaking technology matters independently of total steel demand.	Greater scrap and electric-arc-furnace use reduces seaborne demand for iron ore and metallurgical coal even if total steel production remains relatively strong.
Supply timing matters as much as ultimate resource availability.	Delays or acceleration in projects such as Simandou or Vale expansion can materially change the market-clearing price over the modelled horizon.
Volume adjustment precedes or accompanies price adjustment.	Downside scenarios can reduce both Australian prices and production volumes; fiscal exposure is therefore not purely a price effect.
Iron ore and metallurgical coal are modelled through explicit structural balances.	Scenario outcomes reflect detailed changes in steel demand, technology and competing supply rather than arbitrary price assumptions.
Thermal coal is treated more simply as a seaborne market balance.	Thermal coal prices are driven by alternative assumptions about the overall size of the contestable seaborne market rather than the same detailed steel-sector mechanics.

C.10 NoWO estimates under different commodity scenarios

Purpose

Key question	What is the amount the Commonwealth should expect to pay in NoWO for given commodity prices?
Scope	CGC GST distribution, 2024–25, varying iron ore, metallurgical and thermal coal prices.
Used in	Figure 3.7, figure 3.8; table 3.4

Method

This modelling is a reduced form of the PC GST Model, isolating the effects that price changes of key commodity will have on GST distributions, under both pre-2018 and current systems.

This modelling uses a combination of data sources to infer commodity prices, quantities and royalty rates from CGC assessed revenue data. Quantity and rates are then held constant to isolate the effects that a range of commodity prices would have on the GST distribution, all else constant.

Table C.31 – NoWO commodity price estimates modelling steps

#	Step
1	Identify mining revenue and value of production by state using CGC supplied mining revenue data.
2	Allocate commodity production quantities across states using DISR production data.
3	Split the CGC coal category into metallurgical and thermal coal using Wood Mackenzie production data.
4	Combine these datasets to infer production quantity, commodity price and effective royalty/tax rate from CGC revenue data, by state and commodity.
5	Hold production quantities and effective royalty/tax rates constant, so the scenario exercise isolates commodity price effects.
6	Re-estimate state mining revenue for each commodity price combination scenario identified in Commodity price hypotheticals (section C.9).
7	Parse the resulting revenue changes through reduced form PC GST model (section C.3) to estimate distributional GST impacts.
8	Calculate the resulting NoWO payments under each commodity scenario by taking difference between modelled pre-2018 GST and current system distributions.
9	Separate commodity-specific scenarios are modelled to isolate the impact of price changes for each commodity (see figure 3.7 and figure 3.8)

Data

Table C.32 – NoWO commodity price estimates data sources

Dataset	Variables	Years	Source	Notes
CGC mining assessment	Assessed iron ore and coal revenue and value by state	2025	CGC (unpublished data)	–
Resources and Energy Quarterly	Annual iron ore and coal production quantities by state	2025	DISR (2025)	–
Coal mine-level cost curves	Production by mine	2025	Wood Mackenzie (2026a)	Wood Mackenzie proprietary property.

Assumptions

The NoWO commodity price estimates presented in this report rely on a range of key assumptions. Variations in these assumptions or unforeseen developments may result in outcomes that differ from those estimated.

Table C.33 – NoWO commodity price estimates specific assumptions

Assumption	Implication
The pre-2018 system is the NoWO benchmark.	Each scenario is first evaluated under the pre-2018 system; states are protected against receiving less than this benchmark under the alternative system.
The alternative system applies a "standard state" relativity floor.	The equalisation benchmark is set to the lower pre-2018 relativities of the New South Wales or Victoria. After applying the standard state floor, relativities are uniformly adjusted so that the population-weighted average relativity returns to 1 and the GST pool remains fully distributed.
NoWO compensates losses only.	For each state, NoWO is the amount by which its GST allocation under the standard-state-floor system is below its full-HFE allocation. States that gain under the floor do not make offsetting payments.
Commodity revenue shocks are applied through mining revenue assessments.	Changes in iron ore, metallurgical coal and thermal coal revenues are added to the relevant states' assessed mining revenue.
Commodity revenue shocks are balanced on an equal per-capita basis.	As per CGC methodological advice, the aggregate change in commodity revenue is offset by a balancing expenditure item distributed across states according to population share.
Other underlying CGC revenue and expenditure assessments are held fixed.	Aside from the commodity revenue shock and the associated equal per-capita balancing expenditure adjustment, baseline assessed revenues, expenditures, investment, Commonwealth payments and net borrowing are unchanged.

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