



Australian Government
Commonwealth Grants Commission

Fiscal equalisation and mining booms

Research paper 1

October 2021



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Introduction

Mining revenue has been increasingly significant in influencing the GST distribution. This reflects a combination of unprecedented growth in the value of mining production and an uneven distribution of major minerals across states. Volatility in mineral prices has contributed to significant fluctuations in states' GST shares, particularly for Western Australia. The concentration of a mineral in a state gives rise to the potential for a state's GST distribution to be significantly influenced by policy decisions to change its royalty rate. Such a situation is not consistent with one of the principles supporting the Commission's approach to horizontal fiscal equalisation — policy neutrality. That is, a state's GST distribution should not be significantly influenced by policy choices.

This paper complements the Commission's *Occasional Paper No. 3: Mining Revenue and the GST Distribution*, in providing more detail on the Commission's approach to assessing mining revenue capacity. It discusses the impact the mining assessment has had on GST distributions, including volatility of GST distributions and the implications for policy neutrality. The paper also provides an outline of the potential effect of the new equalisation arrangements on volatility and policy neutrality.

How the Commission determines GST distributions

In 2018 the Australian Parliament legislated new arrangements for distributing GST. The transition to the new arrangements commenced in 2021-22. The new arrangements are discussed in the Commission's *Occasional Paper No. 4: The new arrangements*.

Prior to the new approach, equalisation gave each state the fiscal capacity of the fiscally strongest state to provide services. This objective sought to provide all Australians with the potential to access the same services, regardless of where they live.

The new equalisation arrangements ensure that each state's GST relativity is at least as high as the relativity of the fiscally stronger of New South Wales or Victoria (referred to as the 'standard state'). This means no state will receive less GST per person than the standard state.

Both the previous and new arrangements seek to reduce difference in state fiscal capacities arising from circumstances beyond their control. This process is known as horizontal fiscal equalisation.

How horizontal fiscal equalisation works

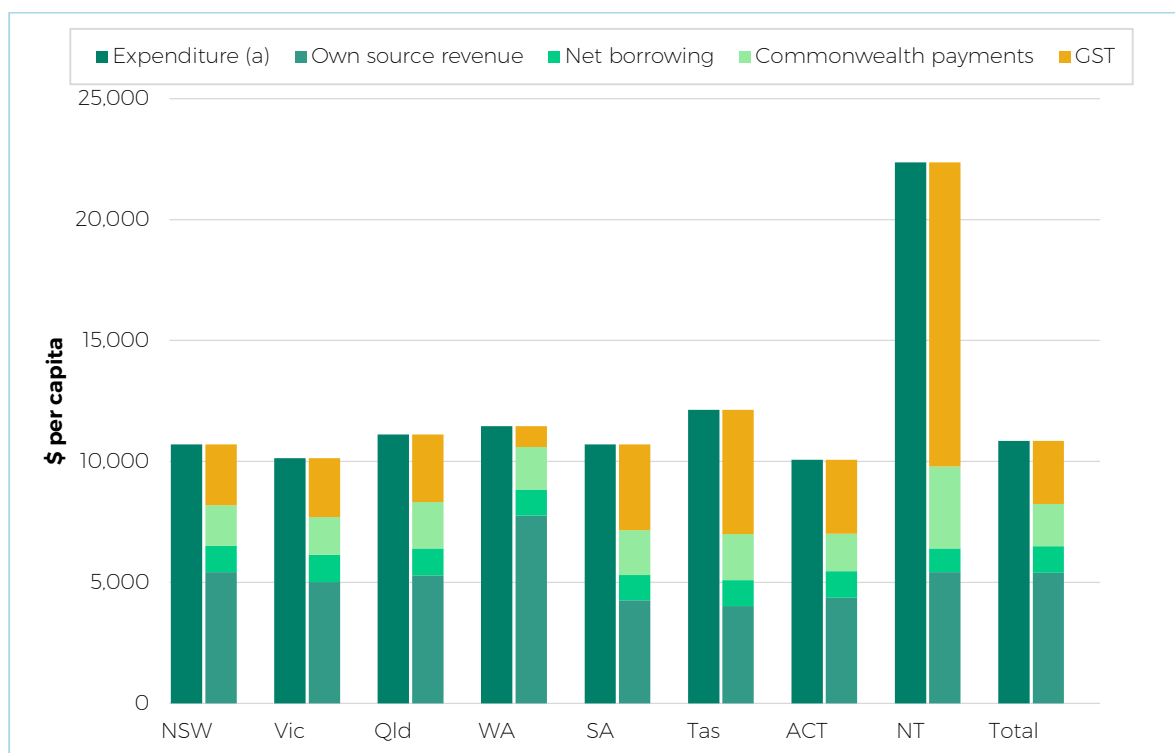
Equalisation reduces differences in state fiscal capacities by addressing imbalances in states' spending and ability to raise taxes. The Commission recommends a GST revenue distribution that offsets differences in states' cost of providing services, their capacities to raise revenue and the non-GST revenues¹ they receive from the Commonwealth. To support this, the Commission undertakes a comprehensive assessment of the services states provide and the revenues they raise.

In equalising state fiscal capacities, the GST acts like a balancing item, filling the gap between the states' assessed expenditure requirements and their assessed revenue capacity (Figure 1). The Northern Territory has the largest gap, due to its high cost of providing services. As a result, it required more GST per capita to equalise its fiscal capacity than other states. In recent years, Western Australia has had the smallest gap, due to its high revenue capacity. Consequently, it required less GST per capita than other states to achieve fiscal equalisation.

Table 1 sets out the proportion of each state's assessed expenditure covered by its assessed revenue sources. Western Australia's high revenue capacity is a reflection of its mining revenue capacity, which sets it apart from other states. Its mining capacity is also the main driver of its low GST share — less GST is required to equalise Western Australia's fiscal capacity with the other states.

¹ These revenues comprise specific purpose payments and national partnership payments.

Figure 1 Estimated assessed budgets per capita, 2021-22



Note: These are assessed expenses, own-source revenue, net borrowings, Commonwealth payments and GST revenue. Assessed expenses and investment.
Source: Commission calculation, 2021 Update.

Table 1 Proportion of assessed expenditure covered by assessed revenue sources, 2021-22

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Ave
	%	%	%	%	%	%	%	%	%
Mining revenue	2	0	8	24	2	1	0	4	5
Other revenues	48	49	39	44	38	32	43	20	44
Net borrowing	10	11	10	9	10	9	11	4	10
Commonwealth payments	16	15	17	15	17	16	15	15	16
GST required	24	24	25	7	33	42	30	56	24
Total	100	100	100	100	100	100	100	100	100

(a) This is the GST a state requires to equalise its fiscal capacity.
Source: Commission calculation, 2021 Update.

Mining is a key component of revenue capacity

In assessing state revenue raising capacity, for each of the main tax bases, the Commission calculates the amount of revenue each state would collect if it were to apply the (national) average tax rate. In the case of mining revenue, the tax base is the value of mineral production. The major

minerals are assessed individually.² This approach recognises that major minerals are concentrated in different states. The two minerals that generate most royalties (iron ore and coal) are concentrated in Western Australia and Queensland respectively (Table 2).

Table 2 Royalty revenue and share of value of production, by mineral, and population share, 2019-20

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Royalty revenue
	%	%	%	%	%	%	%	%	\$m
Iron ore	0	0	0	99	1	0	0	0	7,577
Coal	33	3	64	1	0	0	0	0	5,017
Other minerals	9	5	23	44	10	2	0	7	2,732
Population (%)	32	26	20	10	7	2	2	1	100

Source: State provided data. Australian Bureau of Statistics, mean resident population.

Assessing the major minerals individually means GST outcomes react to changes in the royalty streams for each mineral. If iron ore royalties increase as a result of strong growth in iron ore prices, the largest GST impacts will be on Western Australia. If coal royalties increase, Queensland will experience the largest GST impacts³.

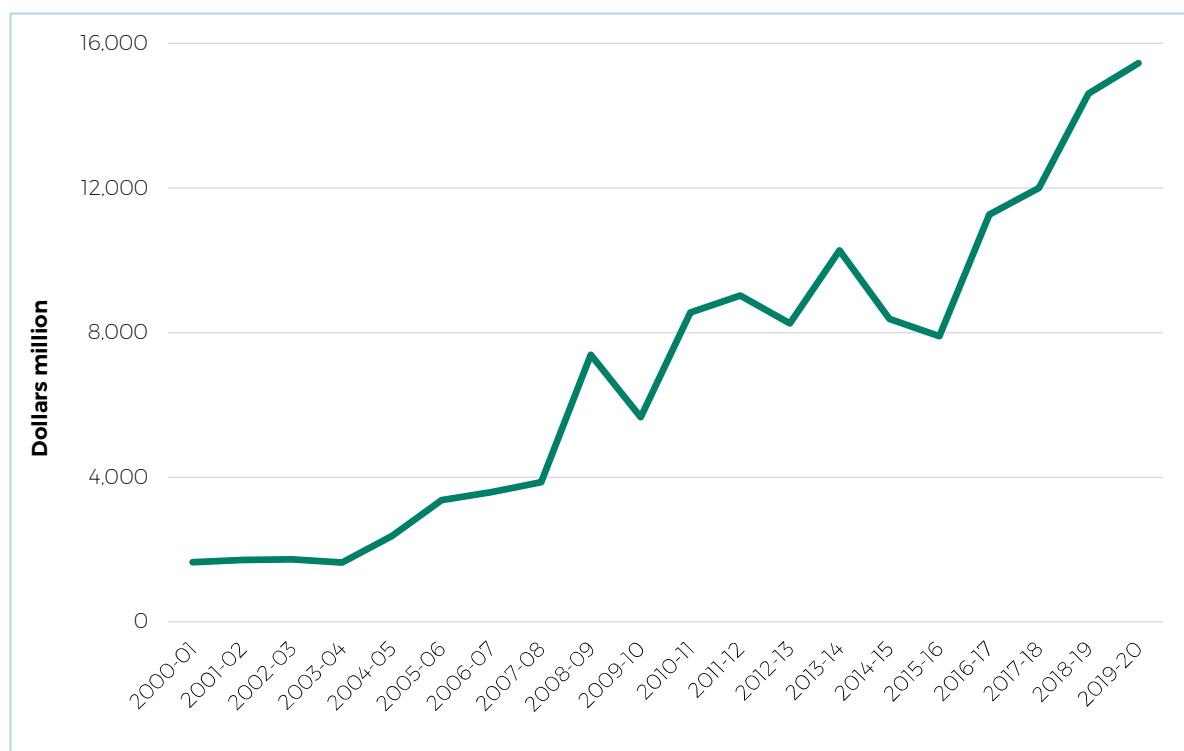
Mining booms have been concentrated in a few states

Australia has experienced a series of mining booms, which commenced around 2003, when coal and iron ore prices started rising in response to a surge in global demand. Since the GST was introduced, royalties have grown ninefold from \$1.6 billion in 2000-01 to \$15.4 billion in 2019-20 (Figure 2).

² The major minerals are those that generate the largest royalty revenue — iron ore, coal, oil, onshore oil and gas, bauxite, and copper. Gold and copper aside, they are the minerals that attract the highest royalty rates from states.

³ While New South Wales has a large share of the coal tax base, its share is close to its population share. Thus, the GST effects of a coal royalty increase would be small.

Figure 2 Total royalty revenue, 2000-01 to 2019-20



Source: State provided data, various inquiries.

Over this period, the importance of the mining industry to the Australian economy has also grown. At the turn of the millennium, the industry contributed approximately 6 per cent to the country's Gross Value Added; by 2019-20, this had risen to 11 per cent.

Growth in demand for coal and iron ore has been an important factor behind the increasing contribution of the Australian mining industry. As a result, royalties have risen faster in the states where those minerals are produced (Queensland and Western Australia). Table 3 shows mining's share of Total Factor Income has fallen in all states over the last two decades, except for Queensland and Western Australia.

Table 3 Share of total factor income — mining

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	%	%	%	%	%	%	%	%	%
June 2001	11	11	19	47	5	1	0	6	100
June 2020	7	3	19	65	2	1	0	3	100

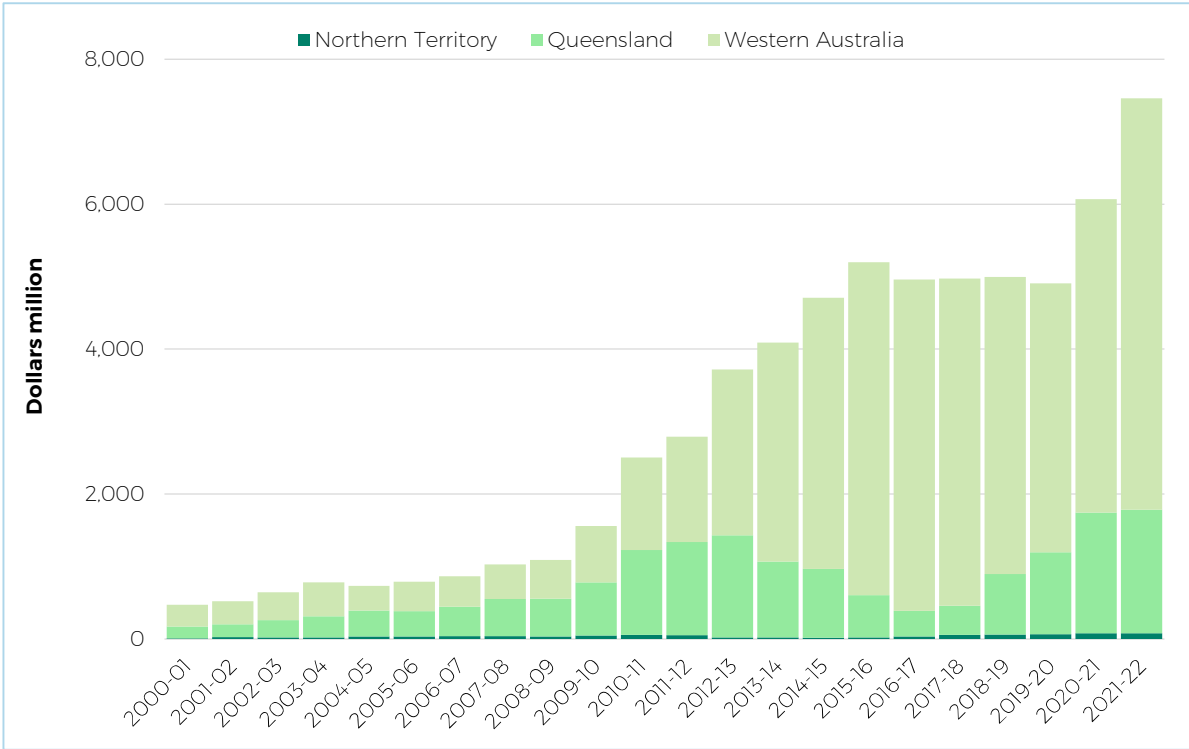
Source: Australian Bureau of Statistics, Australian National Accounts: State Accounts, Table 2 Expenditure, Income and Industry Components of Gross State Product, 2019-20, Cat No 5220.0.

The GST effects of mining booms have been uneven

The tax base for the mining assessment is the value of mineral production. If that base was evenly distributed (that is, if all states had the same per capita production of each mineral), a mining boom would not affect GST distributions. The more uneven the distribution of mineral production, the more uneven the tax base across states, the larger the impact a mining boom has on GST distributions.

The mining assessment tends to reduce the GST required to equalise fiscal capacities in states with a high share of mining activity — currently Queensland, Western Australia, and the Northern Territory. The strong growth in value of production (particularly, coal and iron ore) has caused the mining tax base to become more uneven. As a result, the mining assessment has become a major driver of GST distributions. The amount of GST required by the mining states to equalise their fiscal capacities has fallen as their mining revenue capacity has risen. For example, the mining assessment reduced the GST they required by \$0.5 billion in 2000-01 and by \$7.5 billion in 2021-22 (Figure 3). Western Australia experienced the largest reduction, reflecting both the increase in iron ore royalties and the uneven distribution of the iron ore tax base (see Table 2).

Figure 3 Reduced GST requirement due to the mining assessment, 2000-01 to 2020-21

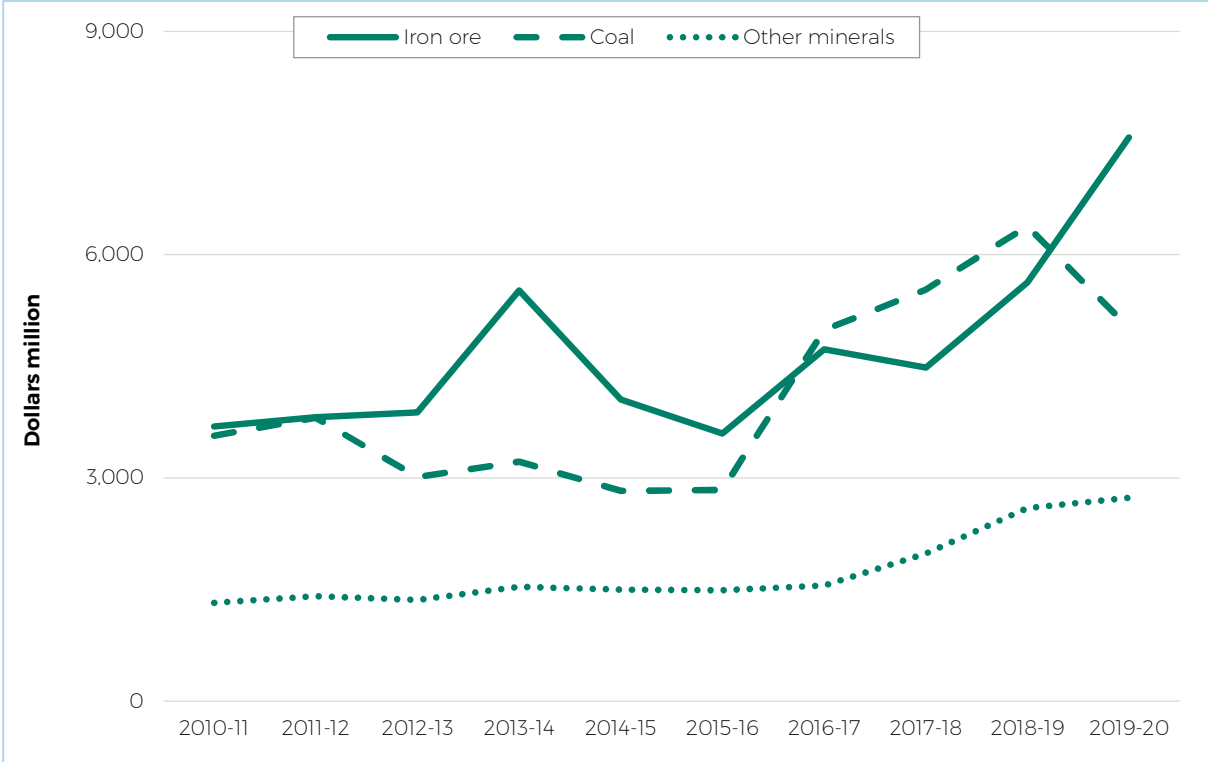


Source: Commission simulation.

While the revenue capacities of the mining states diverged from the non-mining states, they also diverged from each other. In more recent

years, while iron ore royalties have continued to grow strongly because of the strong growth in iron ore prices, subdued growth in coal prices has led to a decline in coal royalties (Figure 4). The result is that there has been a significant increase in Western Australia’s revenue raising capacity from mining compared to states where coal is produced and states with minimal mining resources.

Figure 4 Royalty revenue by mineral, 2010-11 to 2019-2020



Source: State provided data, various inquiries.

The GST effects of mining booms are larger in states with smaller populations

The effect of a revenue assessment on a state’s GST requirement reflects the difference between its population share and its share of the relevant tax base. The larger the difference, the larger the effect on its GST requirement.

Iron ore booms have had a significant effect on Western Australia’s GST requirement because it has a small share of Australia’s population (10%) but a large share of the iron ore tax base (99%). Had the equivalent iron ore production been located in New South Wales, Victoria or Queensland, the influence of the iron ore booms on the GST requirements of those states would have been substantially less.

In 2019-20, Western Australia’s mining royalty revenue was more than five times the national average (\$3,419 per capita compared to \$632 per capita), with iron ore accounting for 90% of Western Australia’s royalties. The high concentration of iron ore in Western Australia, in conjunction with its small share of the national population, has meant that changes in its GST requirement has largely tracked changes in its iron ore royalties.

A high concentration of a mineral in one state can raise policy neutrality issues

The concentration of a mineral in one state (such as iron ore in Western Australia) can raise issues about the potential for a state to influence its GST requirement by changing its royalty rate. This would be inconsistent with the Commission's policy neutrality principle, which seeks to ensure that the assessment of a state's GST requirement is not significantly affected by, and does not significantly influence, individual state policy choices. The Commission found little evidence of this happening with respect to iron ore. The concern is a dominant state can influence the average rate applied to a mineral. In the case of iron ore, the average rate is actually the rate chosen by Western Australia.

The current approach of assessing major minerals individually means a state's ability to raise revenue from a particular mineral is in proportion to its share of production. Thus, states that have no production of a particular mineral are assessed to have no ability to raise revenue from it. Given the significance of the series of mining booms, the Commission considered it important to choose an approach that more accurately reflected a state's ability to raise mining revenue. It concluded its chosen approach provided a better equalisation outcome, even if the policy neutrality supporting principle may not be fully achieved.

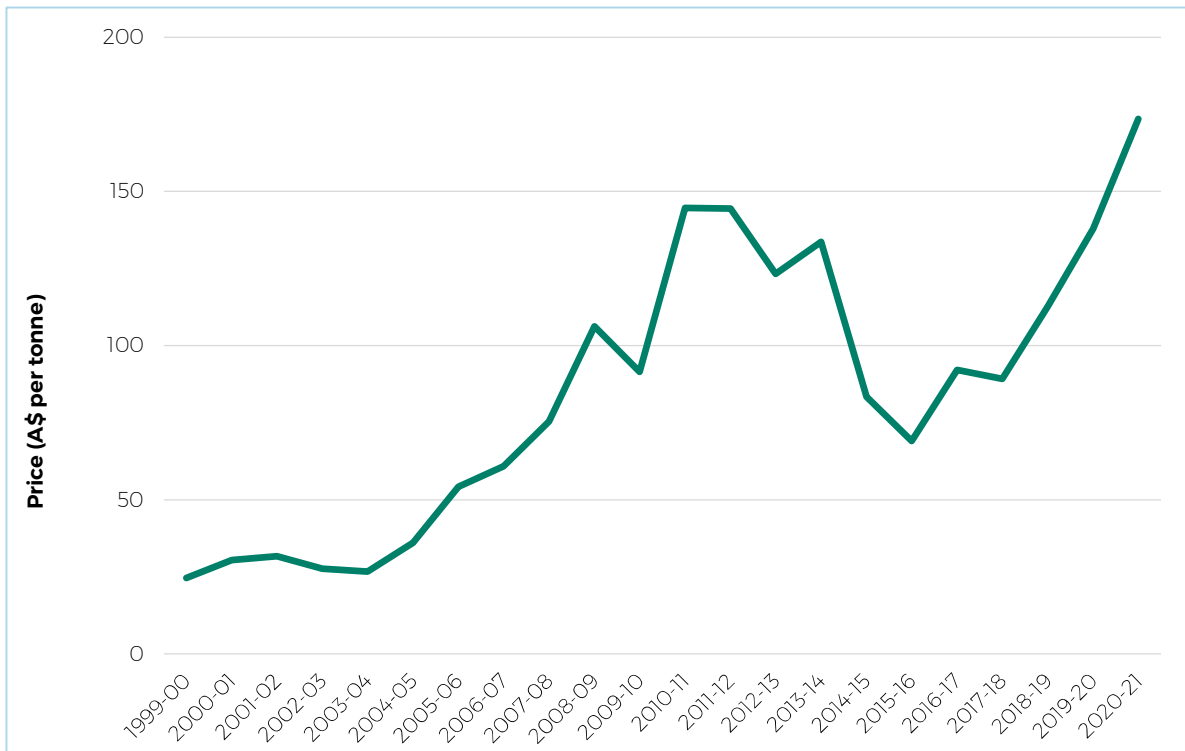
The mining assessment is sensitive to volatility in production and prices

While iron ore royalties have expanded rapidly over the past decade, they have also fluctuated due to the volatility of iron ore prices. Monthly iron ore spot prices⁴ peaked at the start of the decade at around \$186 AUD per metric tonne in 2010-11, before falling to \$58 AUD in 2015-16, and then rising to reach record levels of \$234 AUD in 2020-21. This pattern is also evident in annual iron ore prices (Figure 5).

The high prices between 2010-11 and 2013-14 induced an expansion in production capacity (Figure 6). Fluctuations in the iron ore price and changes in production increased the volatility of Western Australia's iron ore royalties.

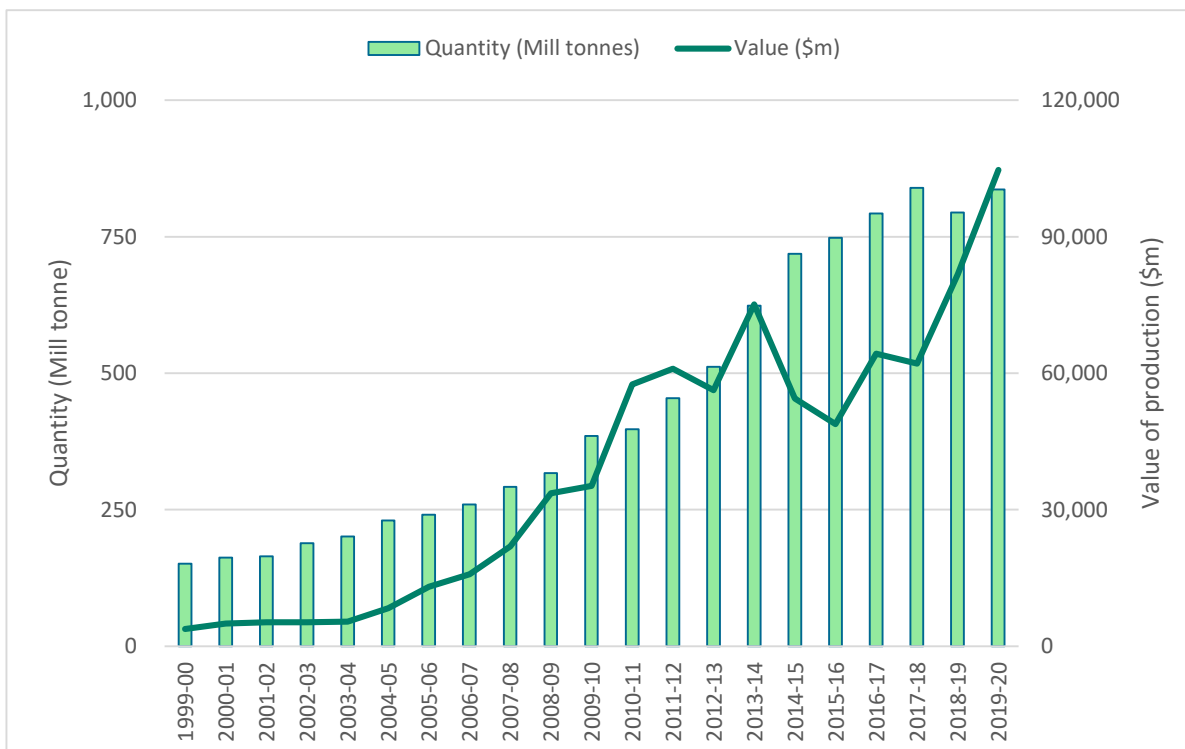
⁴ Iron ore spot prices were obtained from Government of Western Australia, Department of Mines, Industry Regulation and Safety, latest statistics release, major commodities resources data.

Figure 5 Annual iron ore prices, 1999-00 to 2019-2020



Source: Government of Western Australia, Department of Mines, Industry Regulation and Safety, latest statistics release, 2020 Major commodities resources data.

Figure 6 Iron ore quantity and value of production, 1999-00 to 2019-2020



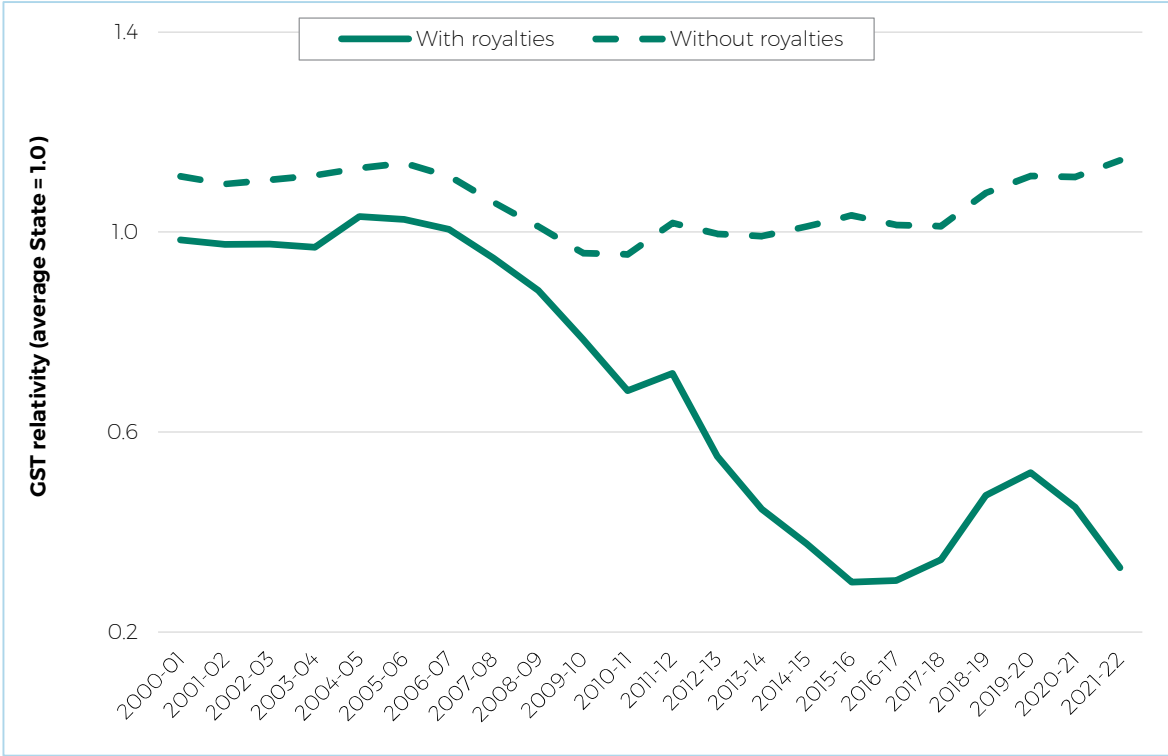
Source: Government of Western Australia, Department of Mines, Industry Regulation and Safety, latest statistics release, 2020 Major commodities resources data.

Volatility in mining revenue results in volatility in GST distributions

Volatility in iron ore prices has resulted in volatility in Western Australia’s GST distribution.

The Commission expresses recommendations for the distribution of GST in terms of state relativities. If all states had the same fiscal capacity, they would all have a relativity of 1. Fiscally stronger states have a relativity below 1 and fiscally weaker states have a relativity above 1. Prior to the series of mining booms, Western Australia’s GST relativity was above 1. While the Commission’s approach of basing assessments on data for a 3-year moving average has moderated some of the fluctuations, Western Australia’s relativity fell to 0.3 in 2015-16, then rose to 0.5 in 2019-20 before falling back to 0.3 in 2021-22 (Figure 7).

Figure 7 Western Australia’s relativity with and without royalties, 2000-01 to 2019-2020



Source: Commonwealth Grants Commission simulation, various inquiries.

The impact of the mining boom on Western Australia’s GST requirement over the last two decades can be gauged by comparing its relativity against its relativity without royalties (Figure 7). The inference is that the mining assessment has been a major contributor to the decline in its relativity and share of GST.

Since states’ GST relativities are averaged to 1, fluctuations in Western Australia’s relativity necessarily cause fluctuations in the relativities of other states. Some states have expressed a concern that the mining

assessment transmits the volatility of iron ore prices to their GST distributions and their budgets.

The Commission's approach to assessing mining revenue captures the strong growth in Western Australia's revenue capacity, which has risen faster than the capacities of other states. This approach means its higher capacity is reflected in the fiscal equalisation process, notwithstanding that iron ore royalties are volatile and this introduces volatility in the GST distribution. Other options the Commission considered to reduce volatility would not have captured states' revenue capacity nor achieved the same degree of fiscal equalisation. For example, grouping major minerals together might dampen volatility in Western Australia's GST distribution, but it would produce a poorer assessment of its revenue capacity because it would have diluted its iron ore capacity.

The new equalisation arrangements will reduce volatility in GST distributions

New equalisation arrangements are being introduced over a transitional period commencing in 2021-22 and ending in 2026-27.⁵ The key elements of the new arrangements are set out in Box 1. The new arrangements will reduce the volatility in GST distributions, particularly for Western Australia.⁶

Box 1: Legislated changes to the GST distribution

Changes to the GST distribution were enacted in the Treasury Laws Amendment (Making Sure Every State and Territory Gets Their Fair Share of GST) ACT 2018. The new arrangements involve:

- Introducing a minimum GST relativity (relativity floor) with an initial floor of 0.7 for 2022-23 and increasing to 0.75 from 2024-25. A state's GST relativity cannot fall below the floor.
- From 2021-22, permanently boosting the GST revenue pool with additional Commonwealth financial assistance.
- Transitioning equalisation from a system based on the fiscal capacity of the strongest state to one based on the fiscal capacity of the stronger of New South Wales or Victoria.
- Until the transitional period ends in 2026-27, the Commonwealth is providing additional financial assistance to states to ensure that each receives total grants at least as much as it would have received had the new legislation not been enacted — a 'no worse off provision'.

⁵ In addition, the Commonwealth financed a relativity of 0.70 between 2019-20 and 2021-22.

⁶ In its interim response to the Productivity Commission's inquiry, the Commonwealth noted the mining boom created extraordinary volatility in the GST distribution, particularly for Western Australia. *Productivity Commission inquiry into horizontal fiscal equalisation: Government interim response*, Canberra, July 2018, page 2.

The new arrangements introduce a minimum relativity (relativity floor) of 0.7 for 2022-23, increasing to 0.75 from 2024-25. Currently, only Western Australia's relativity lies below the floor.

The relativity floor means that Western Australia's GST distribution is no longer impacted by strong growth in iron ore prices. Under the previous system, higher iron ore prices lowered Western Australia's relativity to well below 1, which reduced its GST share. During the transitional period for the new arrangements, Western Australia's share of GST cannot fall below the relativity floor, notwithstanding high iron ore prices.

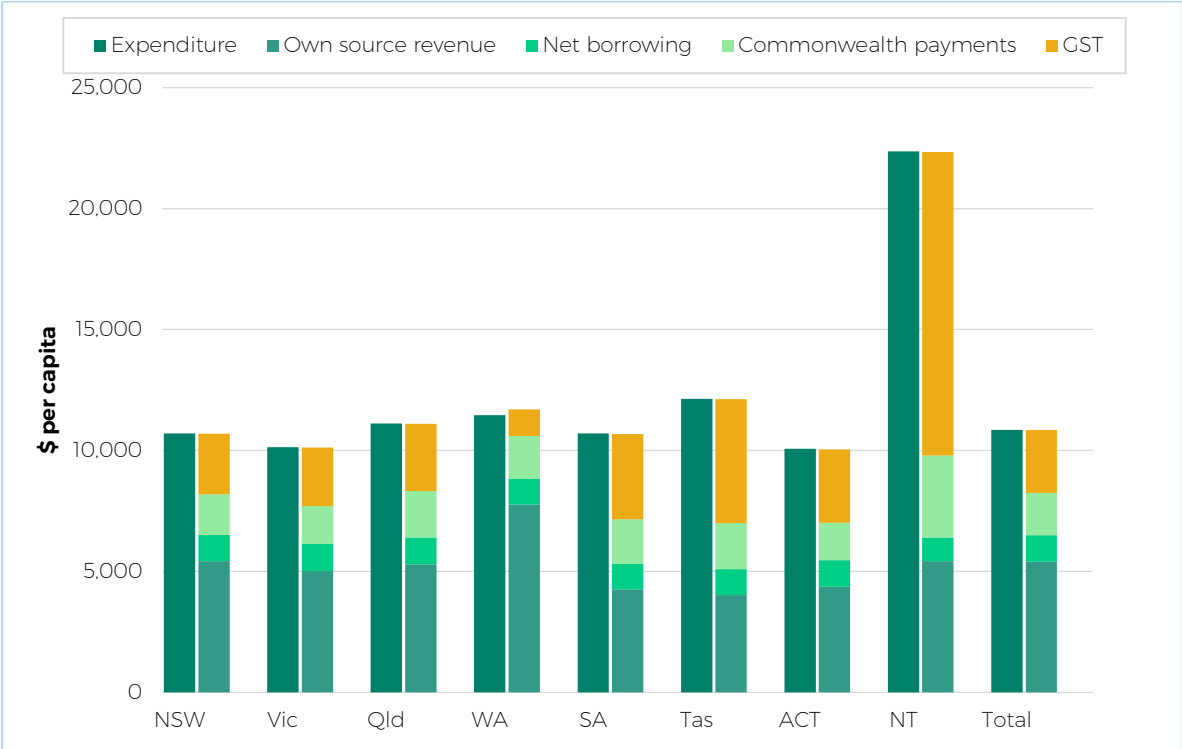
The implementation of a relativity floor also means Western Australia's choice of royalty rate will no longer have the potential to affect its GST distribution. Previously, increases in its royalty rate would have reduced its relativity and lowered its GST share. The relativity floor ensures this will not happen.

The new arrangements provide that by the end of the transitional period (in 2026-27) no state's relativity will fall below the lower of New South Wales' and Victoria's relativity. Since the introduction of the GST, the lower of their relativities has fluctuated between 0.855 and 0.940. When the transition to the new arrangements is complete, Western Australia's relativity will be considerably less volatile than it was under the previous approach to equalisation.

The Commonwealth has introduced a 'no worse off' guarantee during the transitional period for the new arrangements. This guarantee ensures that, cumulatively over the transitional period, no state will receive a lower GST share than it would have received under the previous arrangements. This means that the cost of lifting Western Australia to the relativity floor (or eventually to the lower of New South Wales' or Victoria) is financed from the GST pool. If required, states will be reimbursed by the Commonwealth over the transitional period through the no worse off guarantee.

Figure 8 shows how the GST was distributed under the new arrangements in 2021-22. Its similarity to Figure 1 suggests the new arrangements only had a small effect in 2021-22. This was because the cost of lifting Western Australia to the relativity floor was financed outside the GST pool by the Commonwealth. From 2022-23, that cost will be financed from the GST pool. The differences between Figure 1 and Figure 8 will become more pronounced when Figure 8 reflects later years in the transitional period.

Figure 8 Estimated assessed budgets per capita, after new arrangements, 2020-21



Note: These are assessed expenses, own-source revenue, net borrowings, Commonwealth payments and GST revenue.
 (a) Assessed expenses and investment.
 Source: Commission calculation, 2021 Update.

Conclusion

A series of mining booms has increased the capacity of the mining states to raise royalty revenue. This has led to a fall in their GST share and a rise in the share of other states. In recent years, the historically high iron ore prices have significantly increased the revenue raising capacity of Western Australia which in turn has lowered its GST requirement.

While commodity prices generally increased over this period, they also fluctuated. These fluctuations have, through the mining assessment, led to volatility in GST distributions. Volatility in the value of iron ore production has resulted in significant volatility in Western Australia’s GST share. The new equalisation arrangements will reduce the volatility in GST distributions arising from the Commission’s mining assessment, particularly for Western Australia.

When a mineral is concentrated in one state, as for iron ore in Western Australia, that state has the potential to influence its GST distribution by altering its royalty rate. Such an outcome is inconsistent with the principle that the GST distribution should not be significantly influenced by states’ policy choices. Under the new arrangements, a state will not have the same capacity to influence its GST distribution.