



**Australian Government**  

---

**Commonwealth Grants Commission**

**2020 REVIEW**

**OPTIONS FOR IMPROVING CONTEMPORANEITY**

**STAFF RESEARCH PAPER**  
**CGC 2017-05-S**

**MAY 2017**

Confidential material

It is the Commission's normal practice to make State submissions available on its website under the CC BY licence, allowing free use of content by third parties.



Further information on the CC BY licence can be found on the [Creative Commons website](http://creativecommons.org) (<http://creativecommons.org>).

Confidential material contained in submissions must be clearly identified or included in separate attachment/s, and details provided in the covering email. Identified confidential material will not be published on the Commission's website.

# CONTENTS

---

<b>BACKGROUND</b>	<b>1</b>
<b>A LAGGED HFE SYSTEM</b>	<b>1</b>
What are the consequences of lags?	2
Why do gaps arise?	3
<b>OPTIONS FOR MAKING THE COMMISSION'S RECOMMENDATIONS MORE CONTEMPORANEOUS</b>	<b>4</b>
Option — a one year model	5
Option — a later reporting date	6
Option — the use of projections or forecasts	8
Option — applying a different treatment to volatile revenues	11
<b>OPTIONS FOR CORRECTING FOR GAPS</b>	<b>15</b>
Option — an advance and completion approach	15
Option — a completion only approach	16
<b>CONCLUSION</b>	<b>17</b>

## BACKGROUND

This staff research paper provides quantitative analyses of issues raised in Staff Discussion Paper 2017-02-S *The principle of HFE and its implementation*. Its purpose is to provide material States may find helpful in preparing a response to the staff discussion paper.

Commission staff are not seeking State submissions on the issues raised in this staff research paper.

- 1 In the 2010 and 2015 Review, the Commission said its intention was, as far as is practical, to achieve equalisation in the application year.<sup>1</sup> It is constrained in achieving its objective because of the practicalities of obtaining reliable data for that year. In the light of those practicalities, it trades-off some contemporaneity for greater data reliability by basing its recommendations on States' historical fiscal capacities. Where a State's fiscal capacity is broadly the same as it was during the years to which the historical data relate, this approach ensures equalisation in the application year. However, using historical data builds lags into the HFE system, which can prevent the Commission's recommendations from delivering a fully contemporaneous GST distribution, that is, the GST revenue States require in an application year when their circumstances have changed.
- 2 As part of the 2020 Review, the Commission is considering alternatives to its existing (relativities) approach. Staff discussion paper 2017-02-S *The principle of HFE and its implementation* discussed some of these options. This research paper provides the results of analyses Commission staff have undertaken on them.

## A LAGGED HFE SYSTEM

- 3 The relativities approach assumes the ratio of States' assessed deficits (based on historical data) to their per capita share of the pool continues into the application year; that is, States' assessed deficits are inflated by the growth in the pool.<sup>2</sup> This approach will not deliver a fully contemporaneous GST distribution if that assumption does not hold. The question is whether better HFE outcomes can be obtained using another approach.

---

<sup>1</sup> In the 2010 Review, the Commission introduced a new supporting principle — contemporaneity. This principle clarified its objective was to achieve equalisation in the application year.

<sup>2</sup> There is also a small adjustment for differential State population growth.

## What are the consequences of lags?

- 4 The lags in the HFE system mean an assessment of the GST that a State requires in advance of a given year (its **GST payment**) can differ from the assessment of the GST it actually required in that year (its **GST requirement**<sup>3</sup>). The gap is a measure of the extent to which the Commission's relativities are not fully contemporaneous. Other approaches are considered more contemporaneous if they generate smaller gaps.
- 5 An analysis of gaps (and options for reducing or removing them) is only relevant if achieving equalisation in the application year remains the Commission's intention.
- 6 Table 1 shows States' GST payments, GST requirements and the gaps for 2010-11 and 2011-12. While gaps can be calculated for the years since, they would be affected by the changes to assessment methods in the 2015 Review. For these two years, Table 1 shows that:
  - some States received more GST than they required — Victoria, Western Australia and South Australia.
  - some received less — New South Wales, Queensland, Tasmania, ACT and the Northern Territory.

**Table 1 The gap under a relativities approach**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>GST payment</b>									
2010-11	14 151	10 699	8 396	3 285	4 346	1 713	871	2 426	45 887
2011-12	14 237	10 340	8 591	3 512	4 284	1 676	848	2 552	46 040
Total	28 388	21 039	16 986	6 797	8 630	3 389	1 719	4 978	91 927
<b>GST requirement</b>									
2010-11	14 351	10 043	10 292	1 623	4 465	1 580	937	2 595	45 887
2011-12	14 825	10 346	9 305	2 058	4 073	1 822	969	2 642	46 040
Total	29 176	20 389	19 598	3 681	8 538	3 401	1 907	5 238	91 927
<b>Gap (GST requirement – GST payment)</b>									
2010-11	200	-657	1 897	-1 662	119	-133	67	169	2 452
2011-12	588	6	715	-1 454	-211	145	121	90	1 665
Total	788	-650	2 611	-3 116	-92	12	187	260	3 859

Source: Commission reports, various years. Final budget outcome, various years.

<sup>3</sup> A State's GST requirement is an assessment of its fiscal capacity once the conditions of the relevant year are known. Thus, it is an assessment that occurs after that year has passed.

7 The figures in Table 1 are illustrative. The size and sign of a State’s gap will change from year to year, in line with how its circumstances are changing relative to the circumstances of other States.

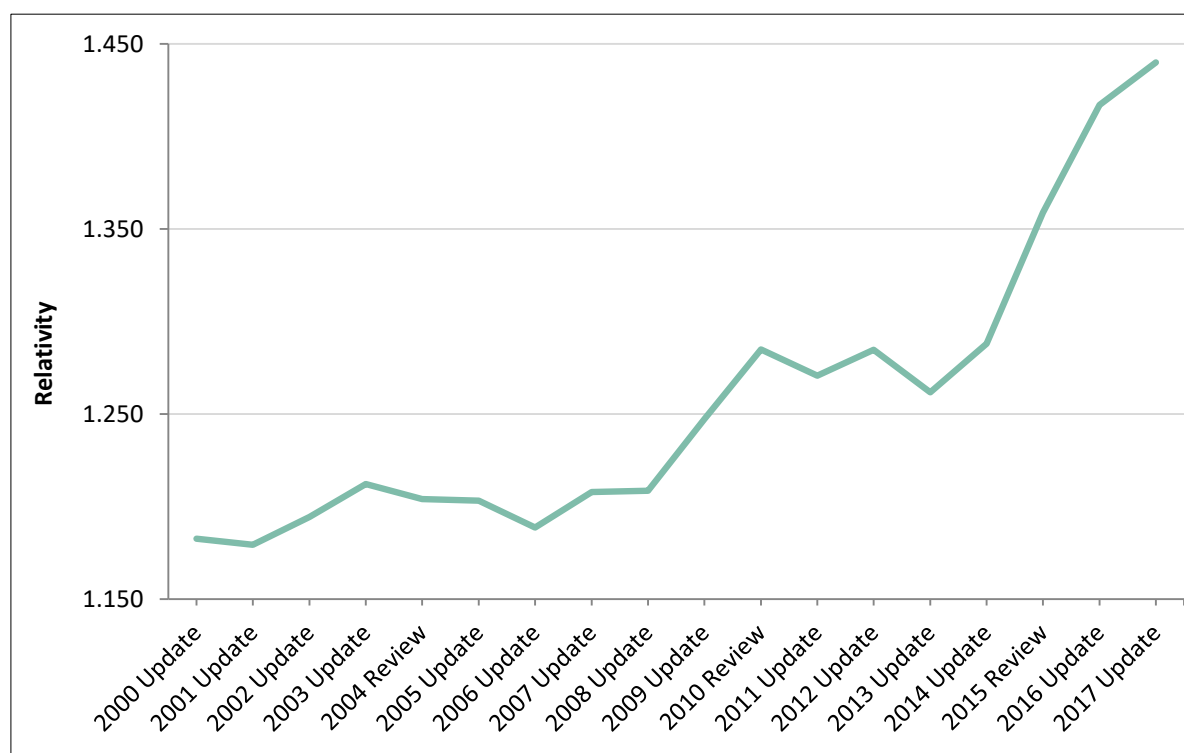
### Why do gaps arise?

8 Gaps arise when the assumption that States’ assessed deficits change in line with the growth in the pool does not hold. For example, a gap can arise when:

- a State is experiencing a long term structural trend (so that its fiscal capacity is growing — or declining — more rapidly than the change in the pool)
- a State is experiencing a sudden change in its fiscal capacity.

9 Figure 1 provides an example of a State experiencing a long term structural decline. South Australia’s GST relativity has been increasing since the 2000s, suggesting its fiscal circumstances have been declining relative to the average. In this situation, the use of historical data means Commission relativities lag behind South Australia’s weakening capacity, usually under-estimating the GST it requires.

**Figure 1 South Australian average GST relativity**



Source: 2017 Update, Supplementary Information, Relativities over time.

10 An example of a State experiencing a sudden change is Western Australia. Over the five year period to 2015-16, it experienced a rapid rise in income as a result of iron ore price increases. The use of historical data means Commission relativities lag behind Western Australia’s increased fiscal capacity, over-estimating the GST it

requires. Table 1 showed Western Australia received more GST than it required under fully contemporaneous equalisation for the years 2010-11 and 2011-12.

- 11 One of the difficulties in dealing with both situations is that options to address structural declines can worsen situations where there is a sudden change. Commission staff have not found a way to simultaneously reduce the total gap and the gap for each State.
- 12 This paper considers options for:
  - improving the contemporaneity of the Commission's recommendations
  - correcting any gaps that arise through a subsequent process.<sup>4</sup>
- 13 The first approach attempts to bring States' GST payments closer to their GST requirements, that is, closer to fully contemporaneous equalisation. The second approach accepts there will be gaps and corrects for them later.

## OPTIONS FOR MAKING THE COMMISSION'S RECOMMENDATIONS MORE CONTEMPORANEOUS

- 14 Making the HFE process more contemporaneous means improving the way the Commission assesses States' relative fiscal capacities (and hence their GST payments) to bring them closer to their GST requirements (that is, how much GST revenue the future shows each State actually needed). Greater contemporaneity might be achieved by moving to a one year model, a later reporting date, estimating data for the application year or applying a different treatment to volatile revenues.
- 15 The first option to improve contemporaneity would be to move from using three years of historical data to a single assessment year, the year closest to the application year. The trade-off for a single year is that it may not be fully reflective of the conditions in the application year, and it would likely increase volatility in GST shares as spike years would move through the HFE system much more quickly than now.
- 16 A possible improvement on the single year approach would be to update the February relativities later in the year, say June, when additional datasets become available.
- 17 If the gaps between States' GST payments and their GST requirements are giving rise to cyclical cash flow management concerns, then other options are to use data estimates or projections for the application year or to treat volatile revenues differently. The trade-off here is data reliability and the possibility that these approaches could make the gaps worse for some States.

---

<sup>4</sup> This is the approach the Commission adopted in the State claimancy era.

- 18 The final options considered are correction payments, which would complicate the HFE system by adding another layer of calculations. They would redress any gaps, but in a way that would move the system further from a fully contemporaneous distribution.

## Option — a one year model

- 19 This option reduces the existing three year assessment period by omitting the oldest two assessment years.
- 20 When State circumstances change rapidly, Commission relativities can become out-of-date before they are used. If this happens, they will not deliver a fully contemporaneous GST distribution in the application year (that is, its GST payment will not match its GST requirement). Western Australia experienced a big increase in revenue in 2013-14 due to a mining boom. The lags in the HFE system meant its increased fiscal capacity arising as a result of that income boost did not result in an immediate reduction in its GST payment in 2013-14 but in three later years (2015-16 to 2017-18), by which time its mining revenue had also fallen. Accordingly, Western Australia points to the current approach as failing to deliver GST payments that match its GST requirement in those later years.
- 21 The relativities approach uses three year averaging. A one year model improves contemporaneity by:
- reducing the number of years in the assessment period, thereby reducing the length of the lags in the system
  - moving the assessment year closer to the application year.
- 22 Implementation issues with this approach include:
- which year
  - should there be a correction process
  - are relativities required?
- 23 As the intention is to improve contemporaneity, this approach relies on choosing a year as close to the application year as possible — if not the application year itself, then the preceding year. Commission staff simulated this using the final assessment year from two inquiries (the 2010 Review and 2011 Update).
- 24 Table 2 shows this option reduced the gaps shown in Table 1 for those two years:
- in total (\$3 384 million versus \$3 859 million)
  - for five States:
    - New South Wales (-\$20 million versus \$788 million)
    - Western Australia (-\$2 518 million versus -\$3 116 million)
    - South Australia (\$54 million versus -\$92 million)



- ACT (\$179 million versus \$187 million)
- the Northern Territory (\$228 million versus \$260 million).

25 This option increased the gap for Victoria (-\$846 million versus -\$650 million), Queensland (\$2 887 million versus \$2 611 million) and Tasmania (\$37 million versus \$12 million).

**Table 2 The gap under a one year model**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
2010-11	-304	-908	2 675	-1 509	113	-173	30	77	2 894
2011-12	285	62	212	-1 009	-59	210	149	151	1 068
Total	-20	-846	2 887	-2 518	54	37	179	228	3 384

Source: Commission reports, various years. Final budget outcome, various years.

- 26 A limitation of this approach is that States experience difficulty providing the data the Commission requires for the current last assessment year. Using either the application year or the preceding year would raise additional data reliability issues. The data for both years are likely to be revised. This raises the question whether a correction process is required to address any errors arising from those revisions. This was a process that occurred in the claimancy era, but was discontinued in the relativities era.<sup>5</sup>
- 27 Under this option, the time between the assessment year and the application year would be at most one year. In that case, it may be simpler to assess States' needs in dollars rather than converting them to relativities.
- 28 In summary, a one year approach is likely to be more volatile and, therefore, make it harder for States to predict their GST payments. Compared with the relativity approach, it trades off some data reliability (and data smoothing) for greater contemporaneity. It reduces the lags in the process, but there is potential for errors from data revisions. In those circumstances, it might require correction process for any over- or under-provision of GST. This would add a layer of calculations to the HFE process.

## Option — a later reporting date

29 This option retains the existing three year assessment period, but estimates total expense (or revenue) data for each category for the most recent assessment year.

<sup>5</sup> The claimancy era refers to the period from 1933 to the early 1980s, when the Commission recommended special grants be paid to claimant States. The relativities era refers to the period from 1981 to the present day, when all-State equalisation has been in place.

- 30 A more up-to-date assessment of the final assessment year may be possible if the Commission was given a later reporting date than the traditional late February or March timing. In particular, financial data from ABS' Government Finance Statistics, new My Schools data, updated population and natural disasters data would be available by June.
- 31 Table 3 shows the change in the gaps were the Commission to report later. Commission staff replaced the (revenue and expense) category totals in the final assessment year with the category totals for that year from the following inquiry. The category's 2009-10 assessment was scaled to the new total. This changed the disabilities from those assessed for the 2009-10 assessment year.

**Table 3 The gap under a later reporting date**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
2010-11	211	-647	1 892	-1 671	125	-133	64	160	2 451
2011-12	594	9	708	-1 456	-210	146	119	90	1 665
Total	805	-638	2 600	-3 127	-85	13	183	250	3 851

Source: Commission reports, various years. Final budget outcome, various years.

- 32 This option left the total gap for the two years (\$3 851 million versus \$3 859 million) and the gaps for individual States largely unchanged. It would have marginally reduced the gaps for five States:
- Victoria (-\$638 million versus -\$650 million)
  - Queensland (\$2 600 million versus \$2 611 million)
  - South Australia (-\$85 million versus -\$92 million)
  - ACT (\$183 million versus \$187 million)
  - the Northern Territory (\$250 million versus \$260 million).
- 33 This option marginally increased the gap for the three other States.
- 34 In summary, this option uses more up-to-date data for the final assessment year. It reduces the total gap and improves the reliability of the data used by the Commission. A limitation of this option is that Commission relativities would not be available until the middle of the year, which has implications for the preparation of State budget papers. A possible way to address this issue might be for the Commission to produce initial indicative relativities at the usual time (around end-February) which States could use for their budgets, then produce revised relativities, say at the end of June.

## Option — the use of projections or forecasts

- 35 Both of these options rely on estimates or forecasts for the application year. They are combined with the category disabilities for the most recent assessment year.
- 36 If the Commission could anticipate the conditions of the application year, it might be able to produce assessments more closely aligned to the circumstances States will experience in that year. While forward estimates of financial data are available, they are not necessarily reliable.
- 37 There is evidence to suggest changes in State disabilities, not financial data, are the bigger contributor to the gaps we observe. Unfortunately, it is easier to obtain estimates of application year financial data than State disabilities. States provide forecasts in their budget papers. It is also possible to estimate financial data by projecting assessment year financial data into the application year. Both forecasts and projections have the potential to reduce gaps.
- 38 If the cause of a gap is a long term structural trend, estimating application year financial data might be worth considering (even if the Commission is not able to estimate State disabilities) as it is likely to reduce gaps. It is not clear that estimating financial data will reduce gaps if the cause is a sudden change in State fiscal capacities. It is unlikely forecasts or projections could reliably predict turning points, particularly for the more volatile revenue streams (such as property duties and royalties) or payments for specific purposes (PSPs). Given its bigger contribution to gaps, there is also a question whether the Commission should try to obtain better estimates of financial data if it cannot also obtain better estimates of State disabilities.

### *A case study using the 2011-12 year*

- 39 The purpose of the case study is to focus on the gaps for a particular year. They provide a benchmark against which alternative approaches can be tested to determine the extent to which they improve contemporaneity by reducing the gaps.
- 40 In this case study, the gap is the difference between:
- On the one hand — the GST distribution when 2011-12 was the application year.<sup>6</sup> This is the Commission’s estimate of the conditions in the 2011-12 year when those conditions are not yet known.
  - On the other hand — the GST distribution States required to be equalised in 2011-12 (as calculated in the 2014 Update). This is the Commission’s later assessment of the conditions in 2011-12 when those conditions are known.

---

<sup>6</sup> For this paper, this distribution was calculated by applying the 2011 Update relativities to the State populations and a GST pool from the 2011-12 year of the 2014 Update.

41 Table 4 reproduces these assessments from Table 1. It also shows the resulting (benchmark) gaps, with perfect knowledge of the application year.

**Table 4 2011-12 gap under a relativities approach**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total/ redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
GST payment	14 237	10 340	8 591	3 512	4 284	1 676	848	2 552	46 040
GST requirement	14 825	10 346	9 305	2 058	4 073	1 822	969	2 642	46 040
Gap	588	6	715	-1 454	-211	145	121	90	1 665

Source: Commission simulation using data from the 2011 and 2014 Updates.

### *A projections model*

- 42 Under this option, Commission staff derived projections of each State's expense and revenues for 2011-12. They were obtained by applying simple ordinary least squares (OLS) techniques to six historical years of data. A category's financial total was derived by summing the individual State projections.
- 43 For each category, Commission staff replaced the 2009-10 category totals with the projections. The category's 2009-10 assessment was scaled to the new total. This changed the disabilities from those assessed for the 2009-10 assessment year.
- 44 This option reduced the gap:
- in total (\$1 002 million versus \$1 665 million)
  - for four States:
    - New South Wales (\$108 million versus \$588 million)
    - Queensland (\$264 million versus \$715 million)
    - Western Australia (-\$593 million versus -\$1 454 million)
    - South Australia (-\$130 million versus -\$211 million).
- 45 This option increased the gap for Victoria (-\$279 million versus \$6 million), Tasmania (\$222 million versus \$145 million), the ACT (\$152 million versus \$121 million) and the Northern Territory (\$256 million versus \$90 million). The increased gaps for Victoria and the Northern Territory suggest the biggest increases in category totals occurred with expense categories.

**Table 5 2011-12 gap under a projections model**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total/ redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
2011 Update	588	6	715	-1 454	-211	145	121	90	1 665
Option	108	-279	264	-593	-130	222	152	256	1 002
Difference	-480	-285	-451	861	81	77	31	166	1 216

Source: Commission simulation using data from the 2011 and 2014 Updates.

46 In summary, this option improves contemporaneity but it may require a correction adjustment to address any errors once reliable data are available. Such an approach would increase the complexity of the HFE process by adding a layer of calculations. These adjustments could cause some gaps to increase in some years.

### *A forecast model*

47 Under this option, Commission staff used State forecasts from their 2010-11 mid-year budget documents, the last available budget documents prior to the 2011 Update. We replaced the 2009-10 category totals (the final assessment year) with States' forward estimates for 2011-12. The 2009-10 assessments were scaled to the new total.

48 This option reduced the gap:

- in total (\$713 million versus \$1 665 million)
- for five States:
  - New South Wales (\$89 million versus \$588 million)
  - Queensland (\$469 million versus \$715 million)
  - Western Australia (-\$87 million versus -\$1 454 million)
  - Tasmania (\$52 million versus \$145 million)
  - the ACT (\$103 million versus \$121 million).

49 This option increased the gap for Victoria (-\$94 million versus \$6 million), South Australia (-\$355 million versus -\$211 million) and the Northern Territory (-\$178 million versus \$90 million).

**Table 6 2011-12 gap under a forecast model**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total/ redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
2011 Update	588	6	715	-1 454	-211	145	121	90	1 665
Option	89	-94	469	-87	-355	52	103	-178	713
Difference	-499	-100	-246	1 367	-144	-93	-18	-268	1 367

Source: Commission simulation using data from the 2011 and 2014 Updates.

- 50 A potential limitation of this option is whether States can provide their mid-year budget documents in time for the Commission to use them.<sup>7</sup> The ACT's 2010-11 mid-year report was published in February 2011, which would have left little time for staff to incorporate its forward estimates. This problem could be allayed if States were willing to provide forward estimates before they published them. To implement this option, the Commission could provide an undertaking not to publish States' forward estimates before States do. This would mean the Commission would not publish individual State estimates, but it could publish an aggregated total.
- 51 A second limitation is that this option uses State data, so a correction adjustment may be required to remove any perceived incentive for States to game the system. This would complicate the HFE system as it would add a layer of calculations to the HFE process.
- 52 In the 2015 Review, the Commission considered the use of forecasts as a way of dealing with volatile revenues. It concluded that State, or independent, forecasts of revenues in the application were not sufficiently reliable. An approach using such unreliable data might require 'consequent GST adjustments in future to compensate for errors'.
- 53 In summary, this option improves contemporaneity but it may require a correction adjustment to address any errors. Such an approach would increase the complexity of the HFE process by adding a layer of calculations. As noted previously, fully contemporaneous equalisation would not be achieved in a year an adjustment was made.

### Option — applying a different treatment to volatile revenues

- 54 If forecasts or projections are deemed not to be sufficiently reliable, the Commission could implement a different approach for volatile, or unpredictable, revenue streams (such as mining revenue and PSPs) that are unlikely to grow in line with pool growth.
- 55 This approach would require application year financial data and disability data, but only for the selected revenue streams.

<sup>7</sup> Alternatively, the Commission could make its recommendations later than June.

- 56 The Commission has previously treated some PSPs by absorption (most recently Health Care Grants in the 2008 Update).<sup>8</sup> Absorption could be extended to volatile revenue streams by:
- in the years of assessment, adding the revenue stream to the GST pool
  - in the application year, applying the ensuing relativities to a combined pool (of GST and the relevant revenue stream)
  - deriving States' GST revenue by deducting an application year assessment of the relevant revenue stream from the combined distribution.
- 57 This option is more contemporaneous because States' GST revenue would depend on an assessment of the revenue stream in the application year rather than its historical assessment in the three assessment years. A disadvantage of this approach is it could increase year to year volatility in GST shares as it is based on a one year assessment rather than a three year average.
- 58 It is not clear that changing the approach for one or two revenue streams would unambiguously produce better HFE outcomes for all States. When the Commission considered this option in the 2015 Review, it concluded singling out a particular revenue stream risks unbalancing the HFE system over time. The approach would increase volatility in GST shares and consequently overall revenue for all States except those assessed to have a strong capacity in the relevant revenue stream.

### *Treating PSPs by absorption*

- 59 If absorption is used, the composition of the application year pool is changed to include the absorbed PSP(s). A similar change is made to the composition of the assessment period pool. Adding PSPs to the pool makes the pool bigger and means absorption relativities tend to be closer to an average relativity (1.000) than the existing relativities.
- 60 Bringing PSPs into the equalisation framework creates a link between a State's receipt of PSPs and its GST. Under the existing approach, the link is to its share of PSPs in the years of assessment. Under absorption, the link is to its share of PSPs in the application year share of PSPs rather than the years of assessment. Thus, absorption is a more contemporaneous approach to PSPs.
- 61 The implications of absorption are:

---

<sup>8</sup> The Commonwealth provides States with general revenue assistance (the GST) and tied assistance (PSPs). The Commission can treat the two forms of assistance as the same and calculate relativities to apply to their combined total. This is absorption. Alternatively, the Commission can calculate relativities to apply to GST revenue only. This is the current approach (called inclusion). The Commonwealth decides which of the two approaches the Commission is to use for each PSP. When it uses inclusion, the Commission derives its relativities by taking account of the PSPs States received in the assessment years. The difference between the two approaches is timing. One uses historical PSPs, the other uses application year PSPs.

- the interstate distribution of PSPs in the application year affects a State's GST distribution
- a bigger share of PSPs in that year reduces its GST requirement.

### **A case study — 2011-12**

62 Table 7 shows this option reduced the gap:

- in total (\$1 506 million versus \$1 665 million)
- for six States:
  - New South Wales (\$295 million versus \$588 million)
  - Queensland (\$688 million versus \$715 million).
  - Western Australia (-\$1 392 million versus -\$1 454 million).
  - South Australia (-\$66 million versus -\$211 million).
  - Tasmania (\$-47 million versus \$145 million).
  - the ACT (\$78 million versus \$121 million).

63 This option increased the gap Victoria (\$362 million versus \$6 million) and the Northern Territory (\$102 million versus \$90 million).

**Table 7 2011-12 gap when PSPs are treated by absorption**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total/ redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
2011 Update	588	6	715	-1 454	-211	145	121	90	1 665
Option	295	362	688	-1 392	-66	-47	78	102	1 506
Difference	-293	356	-47	62	145	-192	-43	12	575

Source: Commission simulation using data from the 2011 and 2014 Updates.

### **Treating mining revenue by absorption**

64 The absorption approach could also be applied to a volatile revenue stream such as mining revenue. Treating mining revenue by absorption requires a change to be made to the composition of the application year pool:

- from GST revenue
- to GST revenue plus royalty revenue plus Grants in lieu of royalties.

65 A similar change would be made to the composition of the assessment period pools.

66 As outlined in paragraph 56, applying absorption to mining revenue would involve:

- in the years of assessment, adding mining revenue to the GST pool
- in the application year, applying the ensuing relativities to a combined pool (of GST and mining revenue)



- deriving States' GST revenue by deducting an application year assessment of mining revenue from the combined distribution.

67 Table 8 shows this option reduced the gap:

- in total (\$929 million versus \$1 665 million)
- for six States:
  - New South Wales (-\$230 million versus \$588 million)
  - Queensland (-\$369 million versus \$715 million).
  - Western Australia (-\$181 million versus -\$1 454 million).
  - Tasmania (\$-72 million versus \$145 million).
  - the ACT (-\$77 million versus \$121 million)
  - the Northern Territory (\$86 million versus \$90 million).

68 This option increased the gap for Victoria (\$520 million versus \$6 million) and South Australia (\$324 million versus -\$211 million).

**Table 8 2011-12 gap when mining revenue is treated by absorption**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total/ redist
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
2011 Update	588	6	715	-1 454	-211	145	121	90	1 665
Option	-230	520	-369	-181	324	-72	-77	86	929
Difference	-818	514	-1 084	1 273	535	-217	-198	-4	2 321

Source: Commission simulation using data from the 2011 and 2014 Updates.

69 In summary, this option improves contemporaneity by using the application year assessment of mining revenue rather than the historical assessment in each of the three assessment years. This option is likely to increase the annual volatility of States' GST shares by using a one year mining assessment rather than an average of three years. It is also likely to increase the complexity of the HFE process by having different assessment approaches for different revenues. A correction process may be required if State data are used to make the application year assessment of mining revenue, and this would increase the complexity of the HFE process by adding a layer of calculations.

70 Victoria's result shows that correcting for one source of the gap (volatile mining revenue) can exacerbate a State's gap if other errors were offsetting the error arising from the absorbed item.

## OPTIONS FOR CORRECTING FOR GAPS

- 71 If contemporaneity remains a supporting principle but none of the options for improving contemporaneity are adopted, then another approach would be to correct any gaps that arise later (such as those shown in Table 1).

### Option — an advance and completion approach

- 72 In the State claimancy era, up to 1981, the Commission assessed a claimant State's need for assistance twice — a preliminary assessment in the form of an advance grant and a final assessment in the form of a completion grant. The completion grant was assessed after the relevant year had passed and when actual data were available (two years later). The completion grant was the difference between the preliminary assessment of State needs (its advance grant) and a final assessment of its needs. If the claimant State's advance grant was too low, its completion grant was positive and vice versa.
- 73 An advance-completion approach would also allow the Commission to build a margin of safety into a State's advance grant in the knowledge that, if the full grant was not required, it could be recouped in the subsequent completion grant. This feature would allow a State to ask the Commission to adjust its advance grant to anticipate a change in circumstances. This happened in the 2015 Review when Western Australia asked the Commission to adjust its mining assessment to anticipate falling iron ore prices and reducing North-West Shelf payments. One of the reasons the Commission did not agree to its request was the HFE process did not have a correction process (such as a completion assessment) that would allow the other States to recoup the additional assistance if it was not needed by Western Australia. Providing a margin of safety to a State would mean HFE would not be achieved in either of the application years when the margin of safety is paid or recouped.
- 74 Implementation issues with this approach include:
- Should the advance and completion grant relate to a single year or multiple years?
  - Which year(s)?
  - Should States' assessments be indexed?
- 75 In the State claimancy era, the advance and completion assessments were based on single years. A single assessment year is likely to increase the volatility of annual completion grants. Having multiple assessment years would provide more stability

but it would increase complexity, with each assessment year affecting the GST distribution of multiple years.<sup>9</sup>

- 76 In the State claimancy era, the Commission did not index State's assistance for the two year gap between the assessment year and the application year. States' needs were calculated as dollars rather than converting them to relativities. If the time between the year of assessment and the year of payment is significant, there may be a need for indexation. The purpose of this indexation would be to compensate States for having to wait for their completion grant. If indexation is to be applied, something close to the cost of borrowing money (for example, the 10 year bond rate) might be more appropriate than the relativity approach of using growth in GST revenue.<sup>10</sup>

### Option — a completion only approach

- 77 This is a variation of the advance-completion model, which involves only one assessment of needs. The approach would be based on:
- an equal per capita (EPC) advance grant; that is, there is no advance assessment of States' needs
  - a completion assessment.
- 78 Implementation issues with this approach include:
- Should the completion assessment relate to a single year or multiple years?
  - Which year(s)?
  - Should States' assessments be indexed?
  - Should there be a transition?
- 79 The discussion of these issues is the same as for the advance-completion approach.
- 80 The move to an EPC advance grant raises an additional transition issue of how to move from a three year assessment of States' needs to an EPC advance grant.
- 81 In summary, this approach ensures States receive the GST they require over time, but State fiscal capacities would not necessarily be equalised in any one year. An advance-completion model would add a layer (a second assessment of State needs) to the HFE process, increasing complexity. A completion only model would assess State needs once and, if there is no indexation, may reduce complexity. A completion only model based on only one year would increase the volatility and prediction of any completion grants. Note that the current lagged three year average approach to determining relativities to apply in the application year can be thought of as an

---

<sup>9</sup> If, as now, there were three assessment years, then each year would become an assessment year for three separate inquiries. Thus, each year would affect the GST of three years.

<sup>10</sup> As discussed earlier, the relativity approach inflates the Commission's historical assessments for any growth in the pool and any differential population growth between the assessment year and the year of payment.

averaged set of completion grants each year, with no advance grants having been made.

## CONCLUSION

- 82 In the 2010 and 2015 Review, the Commission said its intention was to provide States with the GST revenue that, as far as is practical, achieves equalisation in the application year. Currently this is done using a relativity approach. The relativity approach assumes States' assessed deficits in historical years grow in line with the growth in the pool and any differential population growth. If this assumption does not hold, the relativity approach may not provide States with a fully contemporaneous distribution of GST revenue in the application year.
- 83 This assumption does not hold when the circumstances States experienced in the assessment years differ materially from the circumstances they will experience in the application year. In this situation, the relativity approach will generate over- or under-provision of GST (or gaps).
- 84 A fully contemporaneous GST distribution (no gaps) is not feasible. While Commission staff have not found an option that would simultaneously reduce the total gap and the gap for each State, there are options that reduce the total gap and the gaps for some States. They include a one year model (possibly incorporating a later reporting date), estimating or projecting financial data and treating volatile revenue streams by absorption. There are approaches that correct for any discrepancy in a later inquiry, such as an advance-completion approach. This paper provided the results of analysis Commission staff undertook on these options.
- 85 Different approaches provide different trade-offs in terms of contemporaneity, volatility and reliability. Some options involve another layer of calculations, increasing the complexity of the HFE process. If the Commission is to change from its current relativity approach, it should be on the basis of an approach that provides benefits in terms of these trade-offs.