November 2016

Circuit breaker: a new compact on school funding

Technical supplement

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Overview

This technical supplement to the report *Circuit breaker: a new compact on school funding* describes the school funding model that underpins our analysis of different policy options including the new compact.

The new compact proposes investing in two major reforms – needs-based funding and new roles for highly skilled teachers – through reallocation of savings generated by changing school funding arrangements.

Chapter 1 of this document provides an overview of our school funding model, including the main limitations of the model.

In Chapter 2 we explain how we estimated the savings and the assumptions that underpin them. Most of the savings are generated by lowering the indexation rates applied to both target and annual per student funding for all schools, reflecting a decrease in wages growth. Additional savings are generated through freezing indexation for all over-funded schools and reducing funding to a small number of highly over-funded schools.

In Chapter 3 we outline the assumptions underpinning the costing of our proposed investment in needs-based funding and workforce reform (investing more in highly skilled teachers).

Chapter 4 provides a brief summary of the net result of the compact proposal and discusses the impact for different groups of schools.

A public version of the model is published on the Grattan website. This is to enable stakeholders to understand our proposed changes and explore their own policy options.

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Key terms and definitions

Schooling Resource Standard (SRS) targets

Under the *Australian Education Act* (2013), every school has a 'target' rate of funding for each of its students, called its Schooling Resource Standard (SRS) funding amount. Schools are entitled to a base amount of funding for every student, and students and schools who need extra support attract additional loadings.

But not all schools are currently funded at their SRS target level – some receive less ('below SRS'), some are on par ('at SRS') and some receive more ('above SRS') due to historical funding arrangements and political commitments.

School funding indexation

Two elements of recurrent funding for schools are indexed each year: target funding per student (called SRS targets) and annual funding per student (the actual funding schools receive).

The purpose of indexation is to ensure that the real value of both target and annual funding does not fall due to inflation.

But indexation rates can also be used to speed up or slow down the growth of annual funding relative to target funding. For example, if annual funding is less than target funding then annual funding can be indexed at a higher rate to meet the target over time.

Once annual funding matches the target funding level, only one indexation rate is needed to maintain the real value of the funding.

Wage Price Index (WPI)

The Wage Price Index (WPI) is published by the Australian Bureau of Statistics and measures changes in the price of labour in the Australian labour market (usually reported as an annual percentage change).

There is an overall WPI as well as individual indexes for different industries such as the Education and Training WPI.

1 The structure of our school funding model

Our school funding model was built to understand the policy options for delivering needs-based funding to all schools.

We use current government funding for schools and projected growth in student numbers to estimate future government funding for schools under different policy scenarios.

Our model draws on publicly available information on government funding for schools by sector and by state. We use this data to create a school funding baseline for 2014 to 2017 by sector by state.

Our model then projects forward from this baseline to estimate future government funding for schools under various assumed policy settings.

1.1 Our baseline

Our school funding baseline covers 2014 to 2017 and was built using Commonwealth Department of Education and Training (DET) data synthesised from various responses to Questions on Notice at Senate Estimates.[1]

The DET data covers, for each sector[2] in each state:

- The Schooling Resource Standard (SRS) target per student[3] and in aggregate
- Commonwealth annual funding per student and in aggregate
- Total annual funding per student and in aggregate

Commonwealth expectations of state funding can then be inferred from this data, as the difference between Commonwealth and total funding.

Student enrolments by sector by state can also be inferred from the DET data.[4] Information on funding for individual schools in the government and Catholic sectors is not publicly available.[5] More granular information is publicly available for independent schools, so we use this in calculating their funding baseline for 2014 to 2017.[6]

[1] Responses to Questions on Notice from Senate Committee: Education and Employment, SQ14-003150, SQ15-000244 / 000427 / 000430 / 000825 / 000878 / 000888 / 000890.
[2] For independent schools, a more granular approach is used whereby the funding baseline for approved authorities in the big five states is built from 2014 funding vs SRS, based on SQ15-000888 and MySchool data collated by *Sydney Morning Herald*.
[3] This is the average per student target rate of funding for schools in each sector in each state
[4] DET's student enrolment projections are not published, however SQ15-000825 provides a high-level estimate of student enrolments to 2025.
[5] From the Commonwealth perspective, government and Catholic schools in each state are funded as a system.
[6] Our model includes a partially disaggregated view of funding for independent schools.

1.2 Our projections

Projecting future SRS targets

SRS targets for each sector within each state are projected forward from 2017 (see Section 2.3.1). SRS targets are based on the current SRS formula as per the *Australian Education Act* 2013. But we note that the SRS formula is not perfect and should be reviewed in future.

Projecting future funding

Annual funding is projected from 2018. Funding projections are done on a year-by-year basis for each sector within each state, with Commonwealth and state funding estimated separately.

The year-on-year funding projections combine projected student numbers with an appropriate per student funding indexation rate.[7] The per student funding indexation rate applied in our projections depends on whether the prior year's total government funding for each group of schools was at, above or below its SRS target.

Our Commonwealth funding projections are more reliable than our state funding projections because the state projections rely on simplifying assumptions about the indexation rates states have been applying in recent years and what they might do from 2018 onwards (see Section 2.3.1).[8]

1.3 Scenario comparison

Our model compares four main future scenarios.[9] The four scenarios differ in the indexation rates that are applied to annual funding and SRS targets. Table 1 summarises the indexation rates that apply to SRS targets under each scenario. Annual funding is indexed separately and rates under each scenario are summarised in Table 2.

The four scenarios we compare are:

1. 'Legislation scenario'[10]
   - assumes the continuation of the Commonwealth indexation rates specified in the 2013 Education Act
   - simplified assumptions on state funding indexation in line with recent trends
   - SRS target growth as specified in the 2013 Education Act
2. 'Budget scenario 1'[11]
   - assumes Commonwealth indexation rates of 3.56 per cent on annual funding for calendar years 2018 to 2020 (as specified in the 2016 Commonwealth Budget) and then 2.5 per cent from 2021[12]

[7] For future student numbers we use DET's implied view of total student enrolments, allocated by state and sector based on recent trends.
[8] We assume indexation rates of 3-3.6% for all states from 2018 onwards, which is consistent with their recent behaviour based on DET data. In reality future indexation rates are yet to be determined and are likely to vary by state.
[9] Note that the published model includes a fifth scenario.
[10] Called "Model Legislation" in the published model
[11] Called "Model Budget" in the published model
[12] Note that Budget scenarios 1 and 2 apply a single indexation rate to all schools given there was no information on differentiation in the budget. The 2016 Budget made no commitment beyond 2020. Indexation of 2.5 per cent beyond

- simplified assumptions on state funding indexation in line with recent trends (same as the legislation scenario)
- SRS target growth as specified in the 2013 Education Act

3. 'Budget scenario 2'[13]

- assumes an ongoing Commonwealth indexation rate of 3.56 per cent on annual funding (rather than reverting to CPI)
- simplified assumptions on state funding indexation in line with recent trends (same as the legislation scenario)
- SRS target growth as specified in the 2013 Education Act

4. 'Compact proposal'[14]

- applies our proposed changes to annual funding indexation for both Commonwealth and states as well as a new indexation rate on the SRS target as outlined in *Circuit breaker: a new compact on school funding*

Table 1: SRS target indexation rates under the four scenarios

	Legislation	*Budget 1 (2016)*	*Budget 2 (2016)*	*Compact proposal*
All schools	3.6%	3.6%	3.6%	2.5% from 2017

Sources: Education Act (2013); Budget 2014-15; Budget 2016-17; Grattan school funding model.

Table 2: Annual funding indexation rates in our model under the four scenarios

	Legislation	*Budget 1 (2016)*[2]	*Budget 2 (2016)*	*Compact proposal*[3]
Commonwealth annual funding indexation				
Above SRS	3.0%	3.56% 2018-2020 then CPI (2.5%)	3.56% ongoing	0%
100% SRS	3.6%	3.56% 2018-2020 then CPI (2.5%)	3.56% ongoing	2.5%
95-99% SRS	4.7%	3.56% 2018-2020 then CPI (2.5%)	3.56% ongoing	2.5%
<95% SRS	4.7%	3.56% 2018-2020 then CPI (2.5%)	3.56% ongoing	3.6%
State annual funding indexation[1]				
Above SRS	3.0%	3.0%	3.0%	0%
100% SRS	3.0%	3.0%	3.0%	2.5%
95-99% SRS	3.6%	3.6%	3.6%	2.5%
<95% SRS	3.6%	3.6%	3.6%	3.6%

Notes: (1) For the legislation and budget scenarios, we make a single set of assumptions for all states consistent with recent trends in DET data. The compact proposes new indexation rates that are the same for all states and the Commonwealth from 2018. (2) Budget 1 scenario assumes a single Commonwealth indexation rate of 3.56 per cent for all schools for 2018-2020 with indexation reverting to CPI (of 2.5 per cent) beyond 2020 as per the policy position announced in the 2014 Budget. Note that the 2016 Budget makes no indexation commitment beyond 2020 and does not specify what rate applies at each SRS level, referring only to a single indexation rate of 3.56 per cent for total school funding. (3) Compact proposal indexation rates apply from 2018.
Sources: Education Act (2013); Budget 2014-15; Budget 2016-17; Grattan school funding model.

2020 represents the government's 2014 policy position of indexation matching CPI, which was estimated to be 2.5 per cent at the time.
[13] Called "Model 356" in the published model
[14] Called "Model GrattanBaseline" in the published model

1.4 Limitations of our model

We rely on publicly available data

We only have access to publicly available data and therefore do not have the same level of detail as Commonwealth and state government departments have.

We have used the best publicly available data in developing our model. Commonwealth and state government departments and other experts have provided valuable input.

Our model is assumption driven

Our school funding model relies on various assumptions that are explained in this document. The assumptions behind the savings under our compact proposal are detailed in Sections 2.2 and 2.3. The assumptions behind our spending proposal are detailed in Section 3.2.

Our Commonwealth funding estimates are more reliable than our state funding estimates

Our Commonwealth funding estimates are more reliable because (1) there is better data available to develop a Commonwealth funding baseline and (2) each state has its own funding arrangements.

State funding arrangements are complex – each state determines its own funding for schools (and the indexation applied to that funding) and granular data is not publicly available. We make simplifying assumptions about state funding behaviour in line with best available information on historical behaviour. These assumptions are explained in Section 2.3.

We propose a single consistent set of arrangements for both Commonwealth and states from 2018 onwards under the compact that may require some states to increase their funding for schools in future (see Section 4.1).

We have consulted with Commonwealth and state government departments on our assumptions; however any errors or omissions are the responsibility of the authors.

2 Estimating the savings

2.1 Summary of the savings

In *Circuit breaker: a new compact on school funding* we estimate potential savings to the Commonwealth government from changes to school funding arrangements. These savings determine the envelope for our spending proposal (discussed in Chapter 3) to ensure our model is budget-neutral for the Commonwealth.

The savings are reported in Table 3 and represent the difference between the compact proposal and benchmark scenarios. The savings must not be cherry-picked. They are justified only in the context of redistribution – shifting spending from lower priorities to higher priorities. All schools would be worse off if the savings were taken in isolation.

Savings are generated because the compact proposal applies lower indexation rates to annual school funding and SRS targets than those applied under legislation and budget scenarios (indexation rates are summarised in Tables 1 and 2).

This chapter explains the assumptions that drive these savings estimates. Note that savings (or in some cases costs) for states are not reported because they are not sufficiently reliable at the individual state level (and not meaningful in aggregate). The implications will be different for each school sector in each state and should be worked through by the authorities that have the right information available to them.

Table 3: Commonwealth savings from changes to school funding arrangements before spend

Compact proposal before spend…	*2018-2021 (4 year savings)*	*2018-2027 (10 year savings)*
… vs. legislation	$2.8 billion	$18.1 billion
… vs. budget 1	$1.2 billion	-
… vs. budget 2	$1.3 billion	$6.7 billion

Notes: 4 year savings refer to the financial years ending 2018-2021; 10 year savings refer to the financial years ending 2018-2027. The savings reported are prior to additional spending required for under-funded schools. The additional spend is reported in Chapter 3 and the net result in Chapter 4.
Source: Grattan school funding model

2.2 Assumptions driving the savings

There are seven key assumptions that drive the savings estimates. We first provide a list and then explain each in detail.

1. We assume that wages drive most underlying school expenditure increases year to year and that Education Wage Price Index is therefore a good measure of the increasing cost of delivering education

2. We assume that Education Wage Price Index will hold at current levels of approximately 2.5 per cent over the next 4-10 years based on future inflation expectations

3. We adjust SRS indexation to track wages growth from 2017 onwards because wages growth has already dropped

4. We adjust school funding indexation to track wages growth from 2018 onwards (when current funding arrangements run out), with different rules depending on current funding levels:

    a. Schools at or near SRS (95-100 per cent of SRS) receive funding indexation of 2.5 per cent (equal to wages growth), from both Commonwealth and states, to maintain purchasing power

    b. Schools above SRS receive no indexation of per student funding and funding is reduced over six years (2018-2023) for highly over-funded schools (those >116 per cent of SRS) to realign annual funding to target funding

    c. Schools well below SRS (<95 per cent of SRS) receive funding indexation of 3.6 per cent (higher than target growth), from both Commonwealth and states to speed up alignment of annual funding to target funding[15]

5. We assume student numbers will grow based on current trends in student enrolment growth by sector by state

6. We assume that the savings from returning over-funded schools to SRS target levels accrue largely to the Commonwealth (75 per cent) because the Commonwealth provides an average of 75 per cent of the government funding to independent schools, which form the bulk of the over-funded schools

7. In calculating combined savings (federal and state) we make simplifying assumptions about state funding indexation, depending on the scenario:

    a. The 2014 to 2017 baseline for all scenarios uses the Commonwealth implied view of state funding growth for 2014 to 2017

    b. When projecting forward the legislation and budget scenarios from 2018, we assume indexation of 3.6 per cent on per student funding to schools below SRS, and 3.0 per cent to all other schools (broadly in line with baseline state funding growth)

    c. When projecting forward the compact scenario from 2018, we assume the same funding indexation for all states and the Commonwealth[16]

2.3 Justification and sensitivity of assumptions

1. Wages drive most of the growth in school expenditure

Our savings estimates are highly sensitive to our assumption that wages drive most of the underlying school expenditure increases year to year. Currently wages account for about 80 per cent of the

[15] Note that these schools also receive top-up payments, which are discussed as part of the spending proposal in Chapter 3.

[16] 3.6 per cent for schools below 95 per cent of SRS, 2.5 per cent for schools between 95-100 per cent of SRS, and zero per cent for schools above SRS.

operating expenses of government schools and this proportion has held steady for at least a decade.[17]

There is no precise public breakdown of the remaining 20 per cent of school operating expenses but these 'non-employee costs' are likely to be made up of purchased services and supplies. Increasing costs for purchased services (such as contracts for food, transportation, cleaning services, and professional development for teachers) are likely to be driven by wages growth. Increasing costs for supplies (such as water and books) are likely to track overall CPI, which is lower than wages growth.

Education Wage Price Index is therefore a reasonable or generous estimate of the remaining 20 per cent of school operating expenses and a good estimate of the majority 80 per cent of school operating expenses. An alternative is to use a weighted mix of Education WPI and general CPI.[18] Our assumption of Education WPI is a fraction higher and therefore more conservative for school budgets.

Our recommendation is lower than the 3.56 per cent indexation rate proposed in the 2016 budget, which is a combination of the Education WPI and Education CPI. We argue Education CPI is not a good overall measure (see Box 1).

Box 1: Why not Education CPI?

The compact proposal recommends aligning school funding indexation to the Education Wage Price Index, not the Education Consumer Price Index.

CPI provides a general measure of changes in prices of consumer goods and services purchased by Australian households. CPI is made up of 11 broad goods and services groups, of which Education is one. Education CPI is currently at 3.3 percent compared to the overall CPI of 1 per cent.

Education CPI is not representative of changes in the cost of delivering education, but rather the education fees paid by Australian households. Education CPI takes into account three types of expenses for Australian households:

1. Private and government preschool and primary education fees
2. Private and government secondary education fees
3. Private and government tertiary education fees

Growth in education fees may reflect the aspirations of schools, or what the market will bear, more than underlying cost increases.

Linking government funding indexation to school fees would create a 'ratchet' mechanism whereby increases in school fees cause future increases in government funding. This weakens the incentives of schools to keep fees affordable and tends to inflate costs over time.

[17] Grattan analysis of Report on Government Services (ROGS) data on recurrent expenditure in government schools (Table 4A.14) – operating expenses only (depreciation and user cost of capital removed).
[18] As recommended by the 2014 Commission of Audit, Phase One report, p.127 http://www.ncoa.gov.au/report/docs/phase_one_report.pdf

2. Wages growth likely to be 2.5 per cent over the next decade

Our savings estimates are highly sensitive to our assumption that Education WPI will hold at current levels of approximately 2.5 per cent over the next 4-10 years.

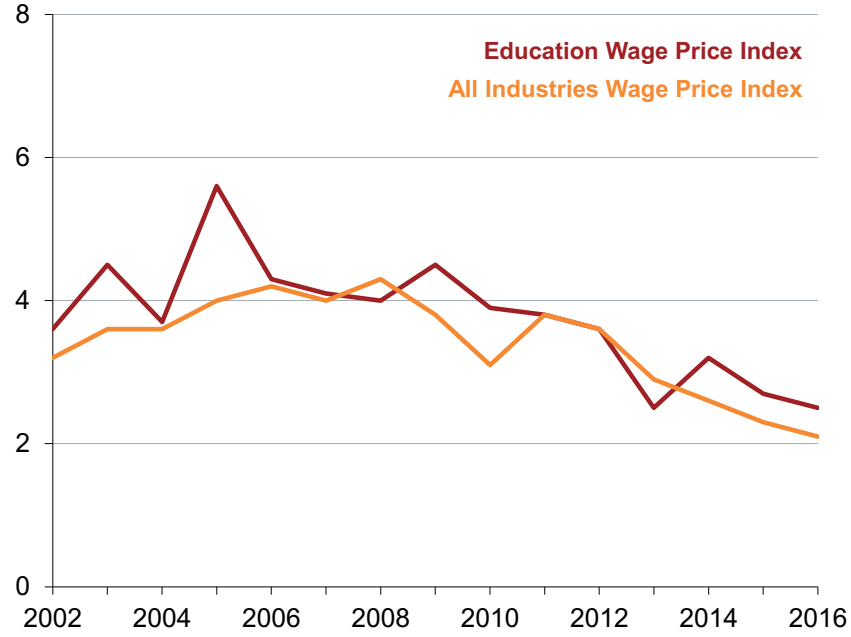
Annual wage increases in education and training closely track the general WPI, averaging just 0.3 per cent higher (see Figure 1). Historically both Education WPI and general WPI have been around 4 per cent but both have been dropping since 2011.

Education WPI has been below 3 per cent since 2015 and is currently 2.3 per cent (as at September 2016).[19] South Australia's recent School Education Staff Enterprise Agreement locked in salary increases of 2.5 per cent for 2016 to 2018.[20]

Markets are pricing the 10-year inflation rate at 1.56 per cent (as at September 2016).[21] Education wages increase annually by about 1 percentage point more than the general Consumer Price Index (CPI, see Figure 2). Thus, if inflation remains low, we should expect education wage growth to remain low.

Our model assumes education wage growth will stay at 2.5 per cent for a decade and then rise to 3.5 per cent in 2026.

Figure 1: Education wages closely track overall wages and have been dropping in recent years
Per cent change from June quarter of previous year



Notes: Wage price indices (WPI) for Australia, public and private, total hourly rates of pay excluding bonuses, June 2002 to June 2016.
Sources: ABS 6345.0 (WPI Series A83895399C and A2603451V).

If Education WPI were to rise much sooner than expected, for example to 3 per cent from 2018 to 2021 and then 3.5 per cent from 2022 this would reduce our 4 year savings estimates by 30

[19] ABS 6345.0 - Wage Price Index, Australia, Jun 2016, available at: http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6345.0Jun%202016?OpenDocument (last accessed 16/11/2016)
[20] South Australian School and Preschool Education Staff Enterprise Agreement 2016
[21] RBA Inflation Expectations (G3) are derived from the difference in yield between 10 year bonds and 10 year inflation-linked bonds. Available at: http://www.rba.gov.au/statistics/tables/#inflation-expectations (last accessed 16/11/2016)

per cent and our 10 year savings estimates by 40 per cent (relative to legislation).[22]

3. SRS target growth should track wages growth from 2017

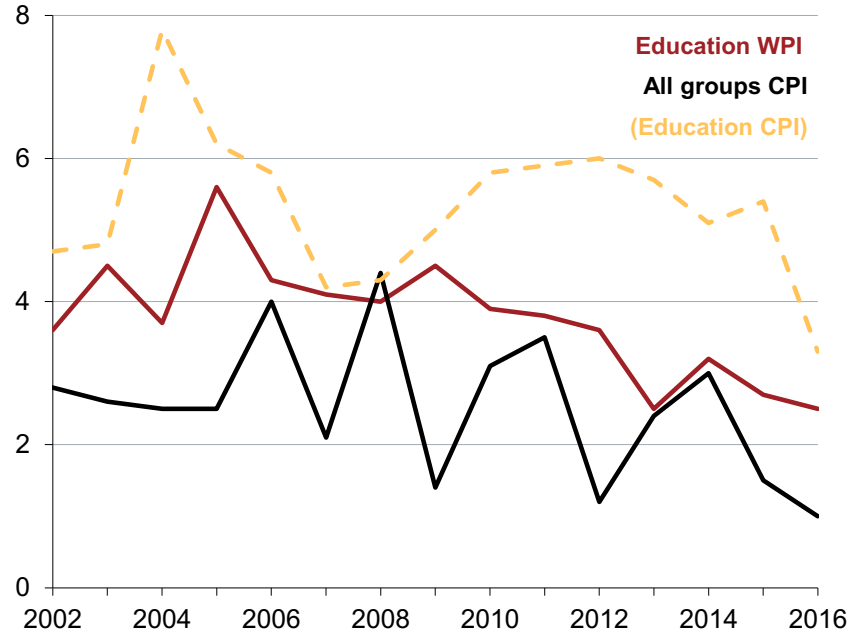
In *Circuit breaker: a new compact on school funding* we argue that indexation of SRS targets should be aligned with wages growth. It is appropriate to align SRS targets to wage growth as soon as possible to ensure the targets do not outgrow their real value (Figure 2 shows that WPI and CPI have been dropping in recent years). We therefore align SRS targets to wage growth from 2017.[23]

This is more a policy recommendation than an assumption, but it has a significant impact on the savings generated and spend required to close the needs-based funding gap.

All schools' SRS targets currently grow at 3.6 per cent under the Education Act. We propose reducing this growth to 2.5 per cent (wage growth) starting from 2017 which means SRS targets would be lower in future than they are currently projected to be.

The decision to align SRS target growth to wage growth from 2017 reduces the spending required to lift schools up to their SRS target between 2018 and 2023.

Figure 2: Education wages grow about one percentage point faster than all groups CPI
Per cent change from June quarter of previous year

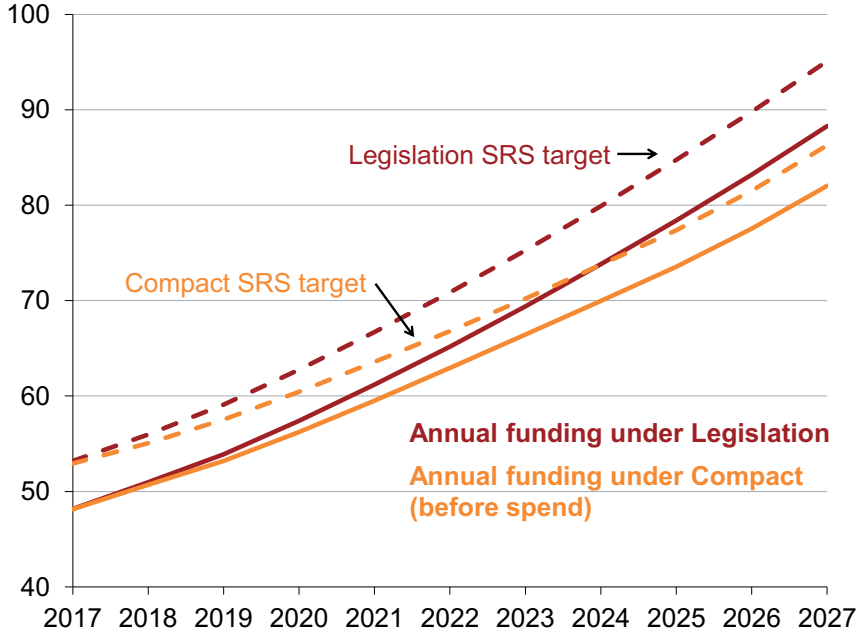


Notes: Education wage price index (WPI) for Australia, public and private, total hourly rates of pay excluding bonuses. Consumer price index (CPI) is shown for all groups, and for education only. Education CPI is included for completeness but we do not recommend aligning school funding to Education CPI (see Box 1).
Sources: ABS 6401.0 (CPI Series A2325847F and A2331427X); ABS 6345.0 (WPI Series A2603451V).

Importantly this is not a loss in real terms – the change is driven by lower inflation than expected, so targets would maintain their real value instead of growing above inflation (see Figure 3).

[22] But note that higher inflation would also imply higher revenue for governments
[23] Changes to SRS targets will not affect schools' 2017 budgets. All other changes proposed in the compact apply from 2018, when current funding arrangements run out.

Figure 3: Under the compact proposal both school funding and SRS targets grow more slowly than under legislation
Projected total school spend ($ billions)



Notes: Compact proposal is shown without the additional savings from reducing funding to overfunded schools and before spend (on top-up payments and teaching initiative). Under the compact, top-up payments close the gap to 95 per cent of SRS in 2023 (not shown).
Source: Grattan school funding model

4. Annual funding indexation should align with wages growth from 2018, with different rates for schools below or above SRS

Under the new compact, indexation of annual funding per student aligns with wage growth. New funding indexation rates would apply from 2018, because current school funding arrangements are locked in until the end of 2017.

Schools funded at or near their SRS target (95 to 100 per cent of SRS)[24] receive per student funding growth of 2.5 per cent under the compact. This matches our wage growth assumption, and therefore maintains their real level of resources.[25]

Different indexation rates apply for schools well below SRS or above SRS. This helps to bring them back in line with the SRS target, at which point their indexation reverts to 2.5 per cent:

- Schools funded below 95 per cent of SRS receive per student funding growth of 3.6 per cent[26] until they reach 95 per cent.[27]
- Schools funded above 100 per cent of SRS receive no annual funding indexation until they return to 100 per cent.[28]

[24] Section 3.2.1 explains why we aim to fund schools to at least 95 per cent of SRS, rather than 100 per cent.
[25] Given that the SRS target also grows in line with wages growth, this means that these schools maintain their funding level as a percentage of SRS.
[26] This 1.1 per cent boost mirrors the approach in the Education Act.
[27] Schools that are funded below 90 per cent of SRS in 2016 would still not reach 95 per cent of SRS by 2023 under this boosted indexation rate. They receive additional top-up payments. Section 3.2.1 explains top-up payments.
[28] This would take decades for some highly over-funded schools, so the compact also applies year-on-year cuts to these schools. See Section 4.2.

5. Growth in student numbers

The changes we propose under the compact affect the indexation of *per student* funding, but our estimates of total school funding under different scenarios rely on assumptions about growth in student numbers.

We use DET's implied view of total student enrolments through to 2025 and ABS projections beyond.[29] We then allocate student numbers by state by sector based on trends in student enrolments between 2015 and 2018, as implied in a recent DET Senate Estimates document.[30] The data did not allow for separate analysis of primary and secondary school enrolment growth.

DET's implied view of student enrolments is broadly in line with ABS projections of the proportion of the population aged 5-18 years over the period to 2025.[31]

As a nation we will spend a lot more if student numbers grow more rapidly than expected (and a lot less if student growth slows). However all our scenarios – legislation, budget and the compact proposal – draw on the same assumptions about student growth, so the relativities and savings are preserved under alternative student growth assumptions.[32]

6. Commonwealth share of savings from schools above SRS

A small portion of the savings (13 per cent of the Commonwealth's 4-year savings) comes from freezing indexation for schools above their SRS target until they return to their SRS level and reducing funding to highly over-funded schools. These savings are shared between the Commonwealth and the states.

The independent school system is the main source of schools above SRS under our model. About one in five independent schools are above SRS. As of today, the Commonwealth contributes on average 75 per cent of the government funding that independent schools receive. We therefore assume that the Commonwealth would capture 75 per cent of any savings from reduced funding to over-funded independent schools.

For government and Catholic schools, our model relies on system-level funding information – we do not have information on funding for individual schools in these sectors.[33] Except for ACT government schools, all government and Catholic school systems are below their SRS target level. The ACT government provides most of the funding to ACT government schools, and would therefore capture most of the savings from reducing funding.

[29] ABS projections of the proportion of the population aged 5-18 years (3222.0 Population Projections, Australia – Persons, Series C)
[30] DET's student enrolment projections are not published, however SQ15-000825 provides a breakdown of total Commonwealth funding by state by sector for 2015 to 2018 alongside a per student breakdown, giving DET's implied view of enrolments for each sector in each state from 2015 to 2018
[31] ABS projections of the proportion of the population aged 5-18 years (3222.0 Population Projections, Australia – Persons, Series C). No breakdown by state and sector available in the ABS projections.
[32] For example, we have tested extreme scenarios that double and halve student growth and found that the savings are highly insensitive to changes in student growth: +/- $10m per year over 4 years and +/- $100m per year over 10 years.
[33] Commonwealth funding for government and Catholic schools is delivered to the system, not individual schools. Some individual government and Catholic schools may well be above SRS, but there is no public data to verify this.

7. State contributions to school funding

It is hard to analyse and project state and territory contributions to school funding. Each state determines its own funding level and the indexation applied to that funding. However, these funding levels and funding growth rates are not publicly reported.

There is a complex arrangement of separate deals between the Commonwealth and each state and school system. Three states[34] signed up to the National Education Reform Agreement (NERA), which commits them to maintaining current funding effort adjusted for indexation. Other states have their own bilateral agreements with the Commonwealth, but the precise indexation levels and how they change over time are not publicly available.

The 2014 to 2017 baseline for state funding levels and annual funding growth is derived from Commonwealth data. The funding levels and growth rates implied by this data appear to be broadly consistent with NERA and other known commitments.[35]

Projecting future funding is further complicated because state funding arrangements beyond 2018 are not yet set. We use a simplifying assumption where all states have the same indexation rules in each scenario. Different scenarios have different rules.

Legislation and budget scenarios: For schools at or above SRS, we assume future funding indexation of 3.0 per cent, in line with NERA. For schools below SRS, we assume indexation of 3.6 per cent. This is higher than the indexation rate in NERA, but reflects the fact that most states agreed to provide 35 per cent of the top-up funding ('additionality') to lift their schools to SRS.

Compact scenario: State funding indexation rates match the Commonwealth rates (see Table 2 for a summary of the rates for all parties). All parties need to maintain schools' purchasing power and contribute to closing the needs-based funding gap.[36]

In practice, all states have different funding trajectories over time, because each state has a different starting point.

Impact of Commonwealth funding on state funding growth

State funding trajectories are also affected by the funding trajectory of the Commonwealth, which differs in each scenario.

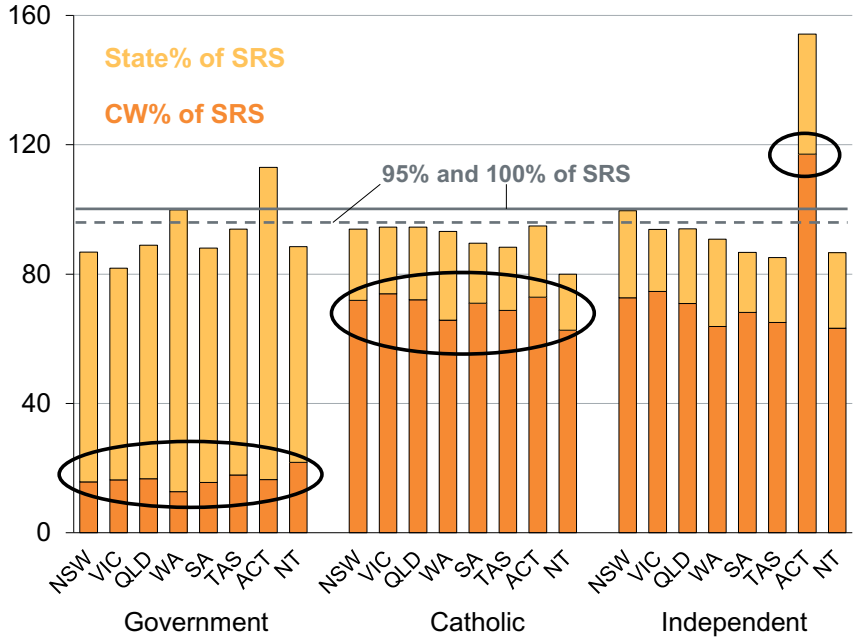
Figure 4 shows that Commonwealth contributions as a percentage of SRS vary substantially across states. Education Minister Birmingham has made it clear that one of his target outcomes from funding negotiations is to remove any disparities in Commonwealth funding among states. In our model we do not factor in any potential future equalisation of Commonwealth contributions across state governments.

We support in broad terms the principle of consistency across states, but in a complex funding system it is dangerous to change one part without considering the impact on the overall system.

[34] New South Wales, South Australia and the Australian Capital Territory.
[35] This data comes from the Commonwealth and may not match actual funding growth delivered by each state. DET responses to Questions on Notice in 2015 and 2016: SQ15-000244 / 000427 / 000430 / 000825 / 000878 / 000890. See Appendix B of the main report for further discussion.
[36] While the Commonwealth and states have the same annual funding indexation arrangements under the compact, the Commonwealth would pay a 65 per cent share of top-up payments (see Section 3.2.1 on top up payments).

Figure 4: Commonwealth funding is highly variable by sector and state

Commonwealth and state government funding as a per cent of SRS, by state by sector in 2016



Notes: State government funding as a percentage of SRS is derived from Commonwealth data and may not reflect actual state funding
Source: Grattan school funding model

2.4 Who contributes to the savings?

All schools contribute to the savings under the compact proposal. This is because the school funding indexation we propose is lower – across all schools – than the funding indexation in the 2016 Budget and under the 2013 Education Act.

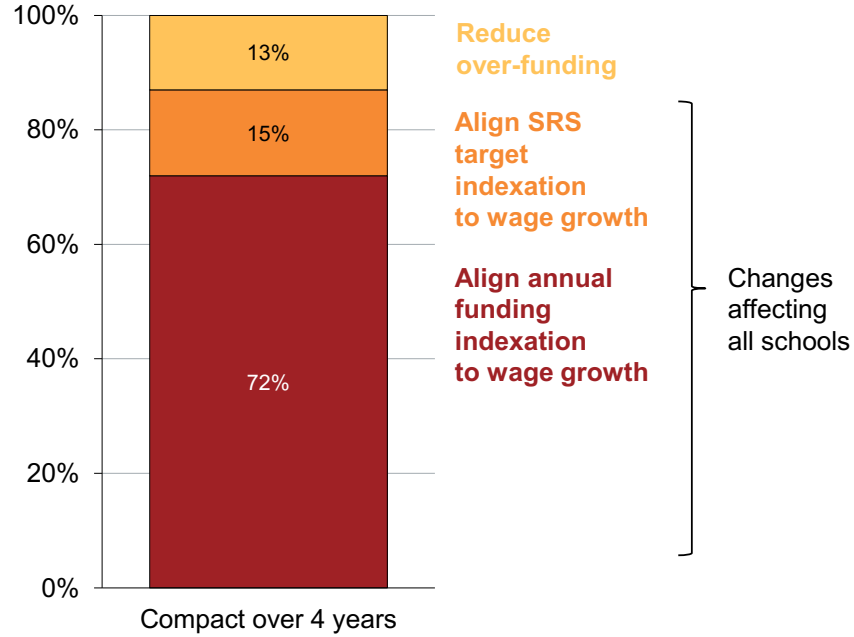
Most of the savings under the compact proposal come from applying a lower indexation rate to funding that matches wages growth. This applies to all schools, with the adjustments for schools above or well below SRS described in Section 2.3.4.

Further savings are achieved by applying a lower indexation rate to the SRS target for all schools. Together, these two changes (which affect all schools) deliver 87 per cent of the four year savings (see Figure 5).

Additional savings (13 per cent) are achieved by bringing over-funded schools back in line with their SRS target over time. The impact of the compact on different groups of schools is discussed further in Section 4.2.

Figure 5: Most of the compact savings come from indexation changes that affect all schools

Percentage of Commonwealth savings by source, over four years



Source: Grattan school funding model

3 Estimating the spending

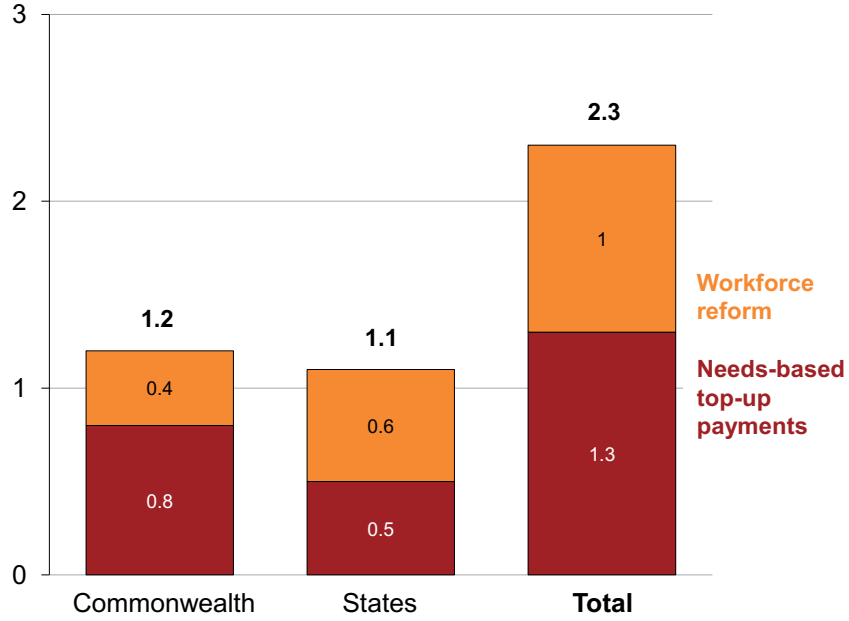
3.1 Summary of the spend

The spending outlined in *Circuit breaker: a new compact on school funding* was guided by three main aims:

1. To align all schools to their SRS target;
2. To invest in workforce reform (quality teaching) – a high priority common aspiration; and
3. To reallocate funding *within* the existing school funding envelope so as to minimise impact on government budgets.

Figure 6 and Table 4 summarise the proposed spending for Commonwealth and states under the compact proposal.

Figure 6: Commonwealth and states spend similar amounts on workforce reform and top-up payments in the short-term
$ billions, added across financial years ending 2018-2021



Notes: The Commonwealth government contributes more than states to needs-based funding (65 per cent) and less to workforce reform (35 per cent). All of the needs-based top-up payments occur in the first 6 years of the proposal, so the Commonwealth contributes more in the early years, but the states contribute more in the long-run (see Table 4). Over 4 years refers to the financial years ending 2018-2021.
Source: Grattan school funding model

Table 4: States collectively spend more than the Commonwealth in the long-run (over 10 years), driven by workforce reform

$ billions	*2018-2021 (4 year spend)*	*2018-2027 (10 year spend)*
Commonwealth	*1.2*	*5.9*
Needs-based funding	0.8	2.0
Workforce reform	0.4	3.9
States	*1.1*	*8.4*
Needs-based funding	0.5	1.0
Workforce reform	0.6	7.4
Total	*2.3*	*14.3*
Needs-based funding	1.3	3.0
Workforce reform	1.0	11.3

Source: Grattan school funding model

3.2 Assumptions behind the spend

3.2.1 Needs-based funding

Three changes contribute to closing the needs-based funding gap under the compact proposal:

- Lower indexation of SRS targets (2.5 per cent, matching wages growth) slows the growth of the target funding required
- Indexation of 3.6 per cent on annual funding - higher than SRS target growth - for schools below their SRS target helps them to catch up
- Additional top-up payments for schools below their SRS target helps them to catch up faster

The size of the needs-based funding gap

In order to calculate the overall cost of top-up funding for schools below their SRS target we needed to know the size of the gap.

The DET data used to construct our school funding baseline included both the aggregate SRS target for each sector in each state as well as the total annual funding for each sector in each state (see Chapter 1). The model projects all these data according the indexation rules in each scenario. This makes it possible to calculate the cost of closing the gap to 95 per cent of SRS for all schools, both as of today and the future gap in different scenarios.

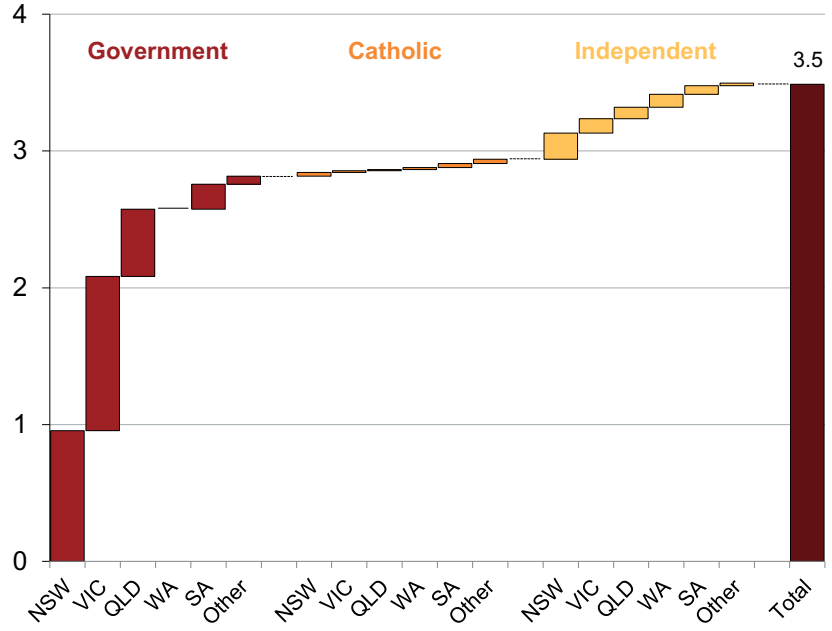
In 2016, lifting all schools to 95 per cent of SRS would cost $3.5 billion (see Figure 7). This is broadly consistent with various public estimates of the cost of getting all schools to 95 per cent of SRS.

The future size of the gap depends on the indexation arrangements for both SRS targets and annual funding, so it varies by scenario and by year.[37]

Under the compact, indexation of the SRS targets is reduced (matching wages growth from 2017). This helps to reduce the gap over time.

[37] Future changes to the SRS formula would also change the size of the gap.

Figure 7: The cost of closing the needs-based funding gap today is about $3.5 billion
Estimated gap to 95 per cent of SRS target in 2016 ($ billions)



Source: *Grattan school funding model*

Needs-based funding phased in over six years

Under the compact proposal, needs-based top-up payments are phased in over six years from 2018, bringing all schools to between 95 and 100 per cent of SRS by 2023.

We apply a six-year phase in rate that is back-end loaded.[38] These are explicit choices, made for two reasons:

First, if schools were to jump to 95 per cent of in one or two years, some schools would receive a very large boost in funding – more than they could be expected to manage and spend well. Under a six-year phase-in, schools receive manageable funding increases each year and can plan for future funding increases.

Second, as savings from indexation grow over time and the gap to 95 per cent of SRS narrows, there are more funds to contribute and a smaller total gap. It is only affordable to fully close the gap in 2023 if the top-up funds are back-end loaded.

Commonwealth and state contributions to closing the NBF gap

We assume that Commonwealth and state contributions to needs-based top-up payments reflect the current arrangement, where the Commonwealth contributes 65 per cent of top-up funding.[39]

Aiming for 95 per cent rather than 100 per cent of SRS

The needs-based funding gap has been calculated as the cost of getting all schools to at least 95 per cent of their SRS target, rather than 100 per cent. This was chosen for three reasons:

[38] We take the total NBF gap to 95 per cent of SRS target in 2023 and divide the funding across the six years from 2018-2023 at a phase-in rate of 15 per cent in 2018, 30 per cent in 2019, 45 per cent in 2020, 60 per cent in 2021, 80 per cent in 2022 and 100 per cent in 2023.
[39] This was the split agreed by the Gillard Government as part of the National Education Reform Agreement negotiations

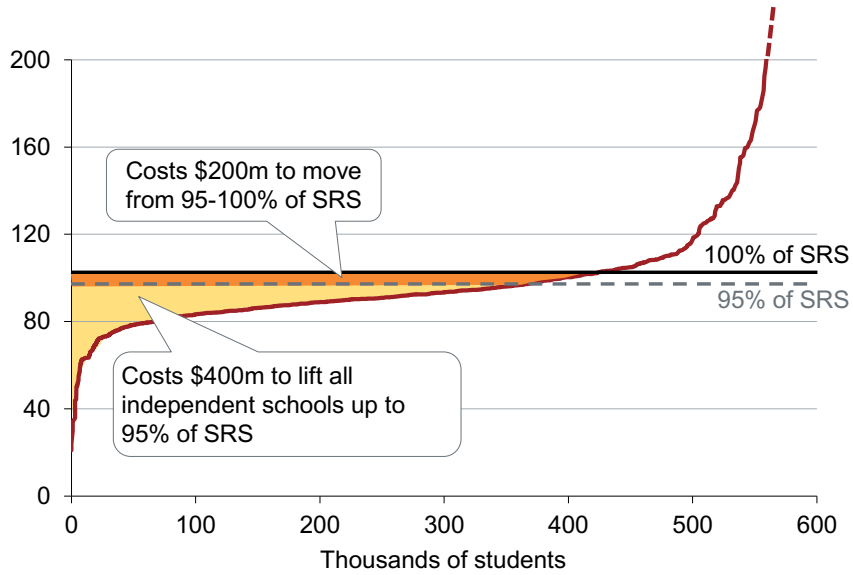
- Getting all schools to 95 per cent of SRS (rather than 100 per cent) leads to much better targeting of funding (see Figure 8)
- For a given funding envelope, it is faster to get all schools to 95 per cent of SRS. Once one set of schools reach 95 per cent, they no longer need top-up funding. The savings from changing indexation thus become increasingly focused on lifting the funding levels of the most under-funded schools
- Aiming for 95 per cent of SRS builds in a degree of future-proofing: if there is a future review of the SRS formula (as we recommend) it ensures there are fewer losers under any proposed changes.

Disabilities funding gap not considered

The SRS formula in the Education Act 2013 does not properly factor in the funding required for students with a disability. At the time there was no comprehensive and nationally comparable data on school students with a disability. An interim disabilities loading was included in the Education Act but it is yet to be updated. [40]

We use the current SRS formula in our proposal, which likely does not include sufficient funding for students with a disability. Future changes to the SRS formula for students with a disability may increase the cost of funding all schools to 95 per cent. If this were the case, additional funding would be required, or top-up payments would need to be phased in over a longer period of time.

Figure 8: Getting to 95% is cheaper and much more targeted than getting to 100%
Percentage of SRS by cumulative number of students, independent schools only



Sources: Grattan analysis of Senate Standing Committee on Education and Employment Supplementary Budget Estimates 2014-2015 Question No. ED0572_15

[40] We note that additional funding for students with a disability was included in the 2016-17 Budget.

3.2.2 Workforce reform (teaching initiative)

We make some explicit choices in the costing of our workforce reform proposal (new roles for highly skilled teachers). All our spending assumptions are summarised in Table 5.

State and Commonwealth contributions to workforce reform

In our modelling we assume the Commonwealth will foot 35 per cent of the bill for this teaching initiative, while states pay the remaining 65 per cent.[41] States are the major funders of schools and employers of teachers, while a one-third contribution from the Commonwealth helps building national consistency.

Costing the new roles

The costing of our 'instructional leaders' proposal assumes that in time 10 per cent of teachers would become instructional leaders and that this appointment would be accompanied by a 30 per cent pay increase for those teachers. We also factor in training costs and time release costs as per Table 5. Schools would continue to pay the base salary of these teachers and would be expected to cover the cost of 50 per cent time release for instructional leaders.

The costing of our 'master teachers' proposal assumes that 1,000 master teachers are appointed Australia-wide at an annual total cost of $250,000 per master teacher (salary and other costs included, in 2016 dollars). We expect 1,000 master teacher positions to enable national coverage of schools and disciplines.[42]

Program set-up costs and phase-in of funding

Our model includes funds of approximately $100 million in 2018 specifically for program design and initial evaluation. We propose a 10 year phase-in for these workforce reforms, allowing time to develop, pilot and evaluate the approach, and enabling a gradual hiring to new positions. This also allows time for state and territory governments to adopt the positions into career structures, and reduces the challenge of identifying and hiring large numbers of teachers for these roles. [43]

[41] This is the reverse split of the needs-based funding top-up payments where the Commonwealth pays 65 per cent and states pay 35 per cent.

[42] There are approximately 6,000 primary schools in Australia and 4,000 high schools. For the sake of illustration, groups of three master teachers could be set up to support 30 primary schools (say, one for English, one for mathematics, and one for science). Groups of five master teachers could support 50 high schools (say, one each for English, mathematics, science, humanities and languages).

[43] It also reduces the difficulties involved in back-filling vacant positions.

Table 5: Assumptions that drive the spending proposal put forward in *Circuit breaker: a new compact on school funding*

Parameter	Parameter assumption
Split of spending between the Commonwealth and States	
Proposed Commonwealth contribution to NBF gap	65%
Proposed Commonwealth contribution to workforce reform	35%
Closing the needs-based funding gap	
SRS target for under-funded schools by 2023	95%
SRS target for over-funded schools by 2023	100%
Estimated cost of closing the needs-based funding gap in 2023	$1.1 bn
Workforce reform (investing in highly skilled teachers)	
Proportion of teachers expected to become instructional leaders	10%
Pay increase for instructional leaders	30%
Extra training costs of instructional leaders (% of base salary)	10%
Release time for other leaders in the school (% of base salary)	20%
Annual cost per master teacher (2016$)	$250,000
Total number of master teachers (#)	1,000
Time to phase in the workforce reform program	10 years

Sources: Grattan school funding model

4 Net result of the compact

4.1 What does the compact mean for budgets?

For the Commonwealth

The net result of our savings estimates (outlined in Chapter 2) and our spending estimates (outlined in Chapter 3) illustrates the overall position of the compact proposal against benchmark scenarios (legislation and budget). Table 6 presents a simple summary of the savings, costs and net result for the Commonwealth government.

Table 6: Net result of the compact proposal for the Commonwealth

Compact proposal after spend…	*C'wealth save*	*C'wealth spend*	*Net result*
vs. Legislation			
over 4 years	$2.8 billion	$1.2 billion	**$1.6 billion**
over 10 years	$18.1 billion	$5.9 billion	**$12.2 billion**
vs. Budget 1 scenario (3.56% 2018-2020 then CPI)			
over 4 years	$1.2 billion	$1.2 billion	**-**
over 10 years	-	$5.9 billion	**-$5.9 billion**
vs. Budget 2 scenario (3.56% ongoing)			
over 4 years	$1.3 billion	$1.2 billion	**$0.1 billion**
over 10 years	$6.7 billion	$5.9 billion	**$0.2 billion**

Notes: Over 4 years refers to the financial years ending 2018-2021; over 10 years refers to the financial years ending 2018-2027.
Sources: Grattan school funding model

For States and Territories

The net result for state and territory budgets is complex. The compact proposal was designed to be budget neutral for the states in aggregate – if our assumptions about recent state funding behaviour hold (see Section 2.3).

The implications however are very different for individual states and for each school sector in each state. Whether an individual state's budget will be better or worse off under the compact depends on the rate at which per student funding is growing at present (information not publicly available) and how many of their schools are currently under-funded.

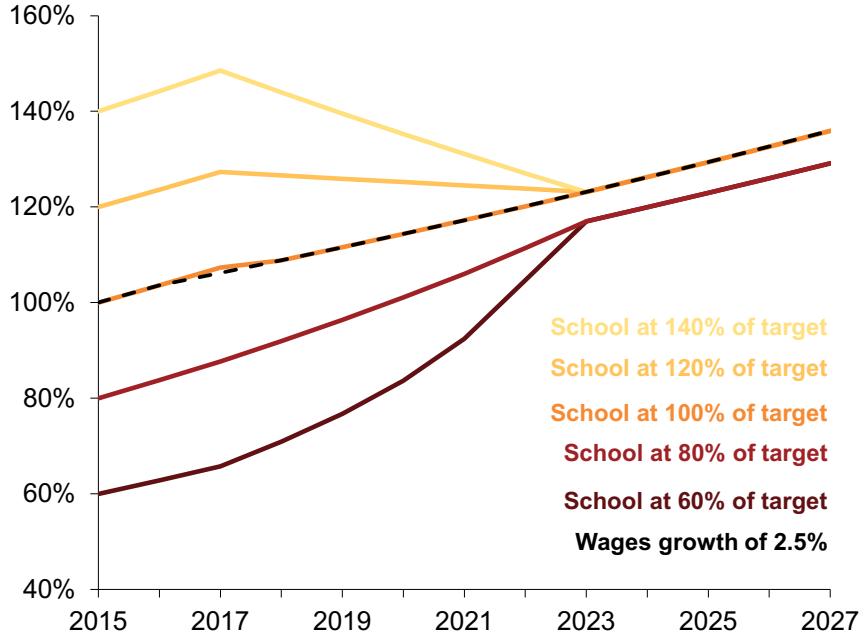
States with under-funded schools (e.g. Victoria's government schools are below SRS) will need to step up under the compact and spend more on their schools than they have in the past. But these states will also receive more Commonwealth funding.

States with over-funded schools (e.g. ACT's government schools are above SRS) can potentially bank savings under the compact. But these states will also receive less Commonwealth funding.

4.2 What does the compact mean for different schools?

The implications of the compact for schools below, at and above their SRS target are summarised in Figure 9. Every school (or school system) in Australia will receive between 95 and 100 per cent of their SRS funding target by 2023.

Figure 9: How the new compact affects schools over and under their target funding level
Projected school funding vs 2015 SRS target



Source: Grattan school funding model

Implications for schools above their SRS target

For schools above their SRS target, we propose that funding should continue to grow in line with student numbers but that no further indexation should be applied until the school returns to their target funding level.

This effectively freezes indexation for over-funded schools until annual funding is realigned with SRS target. Note that funding continues to grow in line with student growth but these schools experience a small loss in real terms because no indexation is applied to that funding.[44]

Once each school returns to 100 per cent of SRS, its future funding would grow in line with wages growth. Schools that are funded between 101 and 116 per cent of their SRS target (in 2017) will return to target levels over the six years from 2018 to 2023 through freezing indexation.

Additional implications for highly over-funded schools

Schools funded at *more than* 116 per cent in 2017 will not return to their SRS target by 2023 through freezing indexation alone. Some highly over-funded schools would take decades to return to their SRS target, even with no funding increases going forward.

We propose a year-on-year decrease in per student funding for these highly over-funded schools to bring them back to their SRS target level by 2023.

[44] The loss is small because inflation is low. The best time to experience an indexation freeze is in a low inflation environment.

A school currently funded at 120 per cent of SRS will lose less than 1 per cent of government funding per student each year. A school currently funded at 150 per cent of SRS would experience a 5 per cent year-on-year decrease in government funding.[45]

Implications for schools at or near their SRS target

We propose that schools close to or at their SRS target should receive indexation on par with wage growth from 2018 onwards. We define 'at or near SRS' as 95 to 100 per cent of SRS.

These schools maintain their purchasing power (for example, they can employ as many teachers in future as they can now) because wage growth is now lower and expected to stay low.

Implications for schools well below their SRS target

Schools well below their SRS target (less than 95 per cent) are the major beneficiaries of the compact. They get a higher rate of annual funding indexation, plus top-up funding if required.

All schools below 95 per cent of their SRS target get the boosted indexation rate of 3.6 per cent, from both the Commonwealth and states. For schools that are currently funded above about 90 per cent of SRS, this is sufficient to get them to 95 per cent of SRS by 2023.

But higher indexation alone will not close the gap in a reasonable timeframe for all schools. Schools well below their SRS target receive automatic funding growth of 3.6 per cent from both the Commonwealth and their state government. They do much better under the compact than under any of the other scenarios we have modelled.

School funding beyond 2023

Under the compact, all schools will be between 95 and 100 per cent of their SRS target by 2023. Over-funded schools will have been brought back into line, which helps to enable top-up funding so that all under-funded schools are lifted up. At this point, school funding is dramatically simpler: all schools will remain funded at an appropriate level using just one indexation rate, and that rate should match wages growth.

[45] Only 28 independent schools are funded at more than 150 per cent of their SRS target in 2017. These schools would need a 5-15 per cent reduction in funding each year for six years to return to target funding levels by 2023. Only four schools would experience annual funding reductions of greater than 10 per cent under our model; and these four schools get most of their funding from fees, not government funding.

Key sources

- Grattan school funding model, available at: http://grattan.edu.au/report/circuit-breaker/
- *Australian Education Act* (2013), available at https://www.education.gov.au/australian-education-act-2013
- Commonwealth Budget (2016), available at http://budget.gov.au/
- Responses to Questions on Notice from Senate Committee: Education and Employment, available at: http://www.aph.gov.au/qon
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