Senate Committee: Education and Employment
QUESTION ON NOTICE
Budget Estimates 1 June 2017

Outcome: Schools and Youth
Department of Education and Training Question No. tbc

How proportionate the data is in relation to population for the states in terms of the number of schools identified as 'reference schools' in the calculation of the primary and secondary base per student price.

See Figures 3-9 in the attached technical report on the calculation of the primary and secondary base per student price.

## Schooling Resource Standard funding amount: 2015 update

## Technical Paper

31 May 2017

## Purpose

The Australian Education Act 2013 calculates the base amount for schools by multiplying the number of students at the schools by the 'SRS funding amount' discounted by the schools capacity to contribute.

This report presents the findings of an analysis undertaken to calculate the SRS funding amount using 2015 My School financial data and 2013-15 NAPLAN data.

## Methodology

For schools funding from 2018, the SRS funding amount for primary and secondary schools has been re-calculated using the most up to date information and the same regression analysis methodology applied by Allen Consulting Group and reported in the Allen Consulting Group 2012: Schooling Resource Standard Technical Paper.

The regression analysis methodology follows three steps:

- Identify reference schools. Reference schools are all schools where at least 80 per cent of students are achieving above the national minimum standard, for their year level, in both reading and numeracy, across a three-year period. This is described in more detail in Attachment A: Reference schools characteristics.
- Apply quantile regression at the 25 th percentile to quantify the variation of the Net recurrent Income per student (NRIPS) as a function of the variables shown in Attachment B. As school level SWD data is not available for all Government schools, an adjustment was made to the NRIPS to account for this, consistent with the previous analyses by the Allen Consulting Group. The method for generating these adjustments is detailed in the original technical report.
- Estimate per student amounts for primary and secondary students using settings based on reference schools, to determine an efficient price for schools with minimal disadvantage.

The statistical analysis was undertaken using SAS. It replicates the results reported by the Allen Consulting Group when used with 2011 data.

## Results

Table 1: SRS base amount

|  | 2011 financial data and <br> $2009-11$ reference schools | New calculations based on 2015 financial data and <br> $2013-15$ reference schools |  |
| :--- | :---: | :---: | :---: |
|  | 2015 SRS funding amount | 2015 SRS funding amount | 2018 SRS funding <br> amount* |
| Primary | $\$ 9,605$ | $\$ 9,853$ | $\$ 10,953$ |
| Secondary | $\$ 12,632$ | $\$ 12,382$ | $\$ 13,764$ |

See attachment B for detailed regression results.

* 2018 data has been calculating by indexing the 2015 amount by 3.6 per cent annually in line with the indexation rates set out in the Australian Education Act 2013.


## Data Collection

The data is sourced from a number of different data collections as set out in the following table.
Matching different sources required a detailed data cleansing process to ensure that information from an individual school was matched with the correct information from other data sets. Some data is collected at campus level and some at a school level. There are a small number of campuses which report their financial data separately in My School. For this regression analysis, similar to the previous analyses, these are considered as separate entities and not aggregated together.
Table 2: Data sources

| Item | Source |
| :---: | :---: |
| Net recurrent Income per student (NRIPS) 2015 <br> Private income percentage | ACARA My School financial data 2015 |
| Primary Students (FTE) 2015 | Enrolments from My School financial data do not categorise by primary/secondary/preschool. The school census 2015 provides the split between primary/secondary/preschool. <br> The match between Census and enrolments is very good, but there are some small differences. Enrolments from My School financial data are used as the primary source to match the Financial data. <br> If the school is a Primary school (and not a government school in Tas or WA) then is set equal to the total enrolments from My School financial data. |
| $\begin{aligned} & \text { Secondary Students (FTE) } \\ & 2015 \end{aligned}$ | If the school is a Secondary school then the Secondary student FTE is set equal to the total enrolments from My School financial data. |
| Preschool funded enrolments (FTE) 2015 | Enrolments from My School financial data in government schools in WA and Tas may include preschool enrolments - this is sourced by comparing differences in FTE between ACARA financial data and Census, for government WA and TAS schools with primary students. |
| Indigenous (FTE) 2015 | School Census 2015 |
| Disadvantaged LBOTE students (2015) | Departmental payment data, originally sourced from ACARA; schools with missing data were coded as zero, since most schools have a zero or small number of disadvantaged LBOTE this is a reasonable assumption. |
| SEA (2015) | SEAAVG, sourced from ACARA is the school level average of the Socio Educational Advantage (SEA) estimates of students within a school used to calculate ICSEA 2015. |
| SWD (FTE) 2015 | School Census 2015. To maintain consistency with the 2011 analysis, only non-government school data was used, though for 2015 there is government school level data available for most states (not NSW and NT). |


| State and sector <br> (Government, Catholic <br> Systemic, Independent) | ACARA My School financial data 2015 |
| :--- | :--- |
| Location (Metropolitan, <br> Provincial, Remote, Very <br> Remote) | ACARA My School - school profile 2015 |
| School type (Primary, <br> Secondary, Combined) | Based on 2015 Census Enrolments |
| Reference School?(Y/N) | Calculated based on 2013-15 NAPLAN data - see attachment A. |

ISEA (Index of Socio-Educational Advantage) was used in the 2011 analysis but is no longer available. It was used as part of the calculations to calculate ICSEA but is no longer used. In this analysis it has been replaced by SEAAVG (2015) sourced from ACARA. There is a good correlation between the two, as shown in the following Figure 1.
Figure 1: Correlation between ISEA and SEAAVG


SEAAVG is more complete, with fewer schools with missing data. If SEAAVG (2015) had been used in the 2011 analysis there would have been no significant difference in the SRS funding amount: 8,370 primary and 11,008 secondary recalculated using SEA as 8,395 and 11,019, and a very slight increase in 'goodness of fit'.

## Number of Schools

The scope is unchanged from the 2011 analysis. The regression analysis includes all regular (ie excluding SAS and special schools) with the requisite financial, enrolment and SEA data. Schools with very high NRIPS (above $\$ 90,000$ per student) are excluded as well as schools in Cocos Island and Christmas Island.

The 2015 data is more complete than the 2011 regression data:

- There were 8778 schools in the 2011 regression analysis compared to 8902 in 2015.
- There were 234 schools missing ISEA data and hence excluded from the 2011 analysis.
- In 2015 there are only 33 schools excluded from the regression analysis because they do not have SEAAVG. Generally these are schools without NAPLAN data (schools only catering only for Years 1 and 2 or senior colleges).
- There are 32 schools without financial data, including 3 reference schools. Generally these schools are closed at the end of 2015 or have undergone a merger.


## Reference Schools

Reference schools are used as a parameter in the regression analysis and their characteristics are used to determine the SRS funding amount. Detailed analysis of these schools is at Attachment A.

Reference schools are all schools where at least 80 per cent of students are achieving above the national minimum standard, for their year level, in both reading and numeracy, across a three-year period. This is described in more detail in Attachment A: Reference schools characteristics.

Table 3 below shows a comparison between the reference schools based on 2009-11 NAPLAN, the basis of the current SRS funding amount for 2014-2017, and reference schools identified using 2013-15 NAPLAN data.

Table 3: Comparison of reference schools compared to all schools

| Sector | type | 2009-11 |  |  | 2013-15 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | No of reference schools | number of schools in regression | Percentage | No of reference schools | number of schools in regression | Percentage |
| Government | Primary | 660 | 4789 | 13.8\% | 739 | 4754 | 15.5\% |
|  | Secondary | 100 | 1029 | 9.7\% | 113 | 1060 | 10.7\% |
|  | Combined | 2 | 470 | 0.4\% | 5 | 492 | 1.0\% |
|  | G Total | 762 | 6288 | 12.1\% | 857 | 6306 | 13.6\% |
| Catholic | Primary | 328 | 1215 | 27.0\% | 380 | 1231 | 30.9\% |
|  | Secondary | 97 | 264 | 36.7\% | 81 | 296 | 27.4\% |
|  | Combined | 12 | 117 | 10.3\% | 13 | 111 | 11.7\% |
|  | C Total | 437 | 1596 | 27.4\% | 474 | 1638 | 28.9\% |
| Independent | Primary | 47 | 199 | 23.6\% | 43 | 205 | 21.0\% |
|  | Secondary | 29 | 52 | 55.8\% | 24 | 56 | 42.9\% |
|  | Combined | 214 | 643 | 33.3\% | 255 | 697 | 36.6\% |
|  | I Total | 290 | 894 | 32.4\% | 322 | 958 | 33.6\% |
| Grand Total |  | 1489 | 8778 | 17.0\% | 1653 | 8902 | 18.6\% |

The definition of a reference school is a fairly exacting one, so there is significant churn:

- 1088 schools were reference schools in both 2009-2011 and 2013-15
- 401 schools were reference schools in 2009-11 but not 2013-15
- 565 schools were new reference schools for 2013-15


## Attachment A: Reference Schools Characteristics

This attachment examines the characteristics of reference schools identified using NAPLAN data for the period 2013-2015.

## Background

The Allen Consulting Group 2012: Schooling Resource Standard Technical Report identified reference schools using 2008-2010 NAPLAN data. This attachment uses the same methodology to identify reference schools, using the 2013 to 2015 NAPLAN data.

## What is a reference school?

A reference school is a school in which at least 80 per cent of students are achieving above the national minimum standard, for their grade, in both reading and numeracy, across 2013, 2014 and 2015.

This is implemented by using Year 3, Year 5 and Year 9 NAPLAN data - Year 7 data is not used to avoid issues connected with Year 7 being the start of Secondary in most states.

## Why are reference schools important?

Reference schools are used as a parameter in the regression analysis and reference schools characteristics are used as settings in the calculation of the SRS primary and secondary per student amounts.

## Reference school characteristics

A total of 1653 reference schools were identified when applying the above student outcome standard to school-level NAPLAN data from 2013 to 2015. Only schools included in the regression analysis are included in this analysis. Special schools were excluded from this analysis, along with regular schools missing requisite data such as Socio-Educational Advantage data. Figure 2 below shows the number of reference schools by sector. The distribution is similar to previous years.

Figure 2: Number of reference schools, by sector


Figure 3 below shows the number of reference schools by State and Territory. As in previous years, reference schools are predominately from NSW (NSW has 38.1\% of all reference schools, and $32.8 \%$ of all schools in the regression analysis) and Victoria (31.3\% of all reference schools and $23.7 \%$ of all schools).

Figure 3: Number of reference schools, by type and jurisdiction


Figures 4 to 9 below show the number and percentage of reference schools in each jurisdiction by sector.

The distribution is similar to previous years. For the first time there are government reference schools in the NT; two primary schools. However one of these is due more to the way students are categorised; previously the school had a significant percentage of students in the exempt category which is included in the calculation of the $80 \%$ above the minimum standard; in 2015 for this school there were no exempt students but a significant percentage of students were withdrawn which is not included in the calculation of the $80 \%$ above the minimum standard.

Figure 4: Number of primary reference schools within each jurisdiction, by sector


Figure 5: Proportion of primary reference schools within each jurisdiction, by sector


Figure 6: Number of secondary reference schools within each jurisdiction, by sector


Figure 7: Proportion of secondary reference schools within each jurisdiction, by sector


Figure 8: Number of combined reference schools within each jurisdiction, by sector


Figure 9: Proportion of combined reference schools within each jurisdiction, by sector


School-level Net Recurrent Income per Student (NRIPS) is fundamental to estimate the SRS. Figures 10 to 12 below compare the distribution of NRIPS by enrolments for both reference and non-reference schools; high NRIPS schools - typically small, remote, and with high proportion of Indigenous students were not identified as reference schools.

Figure 10: Distribution of NRIPS for primary schools


Figure 11: Distribution of NRIPS for secondary schools


Figure 12: Distribution of NRIPS for Combined Schools


Previously the Index of Socio-Educational Advantage (ISEA) was used as a variable in the regression
analysis. ISEA is no longer available and has been replaced in the regression analysis by school level socio-educational advantage (SEA) scores for all schools (i.e. "the average SEA of all students in a school" as used to calculate a school's ICSEA score).

The SEA is sourced from ACARA and is considered to be a suitable alternative parameter for the regression analysis. Reference and non-reference schools have quite different SEA distributions. Reference schools do not have low SEA scores; the lowest score for a reference school is -0.67 ; there are 1726 non-reference schools with lower values.

Figure 13: SEA Distribution for primary schools


Figure 14: SEA Distribution for secondary schools


Figure 15: SEA Distribution for combined schools


Reference schools are predominately metropolitan; there are no very remote reference schools and only 3 remote reference schools. Tables 4 to 6 below show the proportions of reference school compared with the identification frequency, for example, $62.6 \%$ of all reference schools are metropolitan primary schools, however only $30.5 \%$ of all metro primary schools were identified as reference schools. All three remote reference schools have a higher than average absent or withdrawn proportion in 2015.

Table 4: Comparing Location: number of reference schools

|  | Metropolitan | Provincial | Remote | Very Remote | All location |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Primary | 1035 | 125 | 2 | 0 | 1162 |
| Secondary | 196 | 21 | 1 | 0 | 218 |
| Combined | 242 | 31 | 0 | 0 | 273 |
| All School types | 1473 | 177 | 3 | 0 | 1653 |

Table 5: Comparing Location: proportion of reference schools

|  | Metropolitan | Provincial | Remote | Very Remote | All location |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Primary | $62.6 \%$ | $7.6 \%$ | $0.1 \%$ | $0.0 \%$ | $70.3 \%$ |
| Secondary | $11.9 \%$ | $1.3 \%$ | $0.1 \%$ | $0.0 \%$ | $13.2 \%$ |
| Combined | $14.6 \%$ | $1.9 \%$ | $0.0 \%$ | $0.0 \%$ | $16.5 \%$ |
| All School types | $\mathbf{8 9 . 1 \%}$ | $\mathbf{1 0 . 7 \%}$ | $\mathbf{0 . 2 \%}$ | $\mathbf{0 . 0 \%}$ | $\mathbf{1 0 0 . 0 \%}$ |

Table 6: Comparing Location: proportion of reference schools compare to all schools

|  | Metropolitan | Provincial | Remote | Very Remote | All location |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Primary | $30.5 \%$ | $5.0 \%$ | $0.9 \%$ | $0.0 \%$ | $18.8 \%$ |
| Secondary | $21.5 \%$ | $4.5 \%$ | $4.0 \%$ | $0.0 \%$ | $15.4 \%$ |
| Combined | $39.1 \%$ | $7.2 \%$ | $0.0 \%$ | $0.0 \%$ | $\mathbf{2 1 . 0 \%}$ |
| All School types | $\mathbf{2 9 . 9 \%}$ | $\mathbf{5 . 2 \%}$ | $\mathbf{0 . 9 \%}$ | $\mathbf{0 . 0 \%}$ | $\mathbf{1 8 . 6 \%}$ |

Figures 16 to 18 below show the distribution of the proportion of gross private income. The distribution is very similar to previous data, with reference schools tending to have a higher proportion of fee income, particularly for combined schools.

Figure 16: Gross private income proportion for primary schools


Figure 17: Gross private income proportion for secondary schools


Figure 18: Gross private income proportion for combined schools


Figures 19 to 21 below show the distribution of Indigenous students. Reference schools do not have a high proportion of Indigenous students; the highest is $14 \%$. There are 1255 (not reference) schools with a higher proportion of Indigenous students.

## Figure 19: Distribution of Indigenous students in primary schools



Figure 20: Distribution of Indigenous students in secondary schools



## Comparison with previous years

Reference schools have now been identified over a number of periods:

- 2008-10 (Allens Consulting Group's (ACG) 2012 SRS Technical Report),
- 2009-11 (ACG 2013, Schooling Resource Standard: 2011 update)
- 2011-13 (internal Departmental analysis)
- 2012-14 (internal Departmental analysis)
- 2013-15 (this analysis)

Table 7: Proportion of reference schools

| Years | No of reference schools | Number of schools in regression | Proportion |
| :--- | :---: | :---: | :---: |
| $2008-10$ | 1408 | 8923 (2010 financials) | $15.8 \%$ |
| $2009-11$ | 1489 | 8778 (2011 financials) | $17.0 \%$ |
| $2011-13$ | 1619 | 8903 (2013 financials) | $18.2 \%$ |
| $2012-14$ | 1614 | 8901 (2014 financials) | $18.1 \%$ |
| $2013-15$ | 1653 | 8902 (2015 financials) | $18.6 \%$ |

Table 7 above shows that the proportion of reference schools has increased post 2008-10 period, reflecting improved NAPLAN results.

Table 8 below are a comparison between the reference schools based on 2009-11 NAPLAN, the basis of the current SRS funding amount, and the most recent data available (2013-15).

Table 8: Comparison of reference schools

| Sector | type | 2009-11 |  |  | 2013-15 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | No of reference schools | number of schools in regression | Percentage | No of reference schools | number of schools in regression | Percentage |
| Government | Primary | 660 | 4789 | 13.8\% | 739 | 4754 | 15.5\% |
|  | Secondary | 100 | 1029 | 9.7\% | 113 | 1060 | 10.7\% |
|  | Combined | 2 | 470 | 0.4\% | 5 | 492 | 1.0\% |
|  | G Total | 762 | 6288 | 12.1\% | 857 | 6306 | 13.6\% |
| Catholic | Primary | 328 | 1215 | 27.0\% | 380 | 1231 | 30.9\% |
|  | Secondary | 97 | 264 | 36.7\% | 81 | 296 | 27.4\% |
|  | Combined | 12 | 117 | 10.3\% | 13 | 111 | 11.7\% |
|  | C Total | 437 | 1596 | 27.4\% | 474 | 1638 | 28.9\% |
| Independent | Primary | 47 | 199 | 23.6\% | 43 | 205 | 21.0\% |
|  | Secondary | 29 | 52 | 55.8\% | 24 | 56 | 42.9\% |
|  | Combined | 214 | 643 | 33.3\% | 255 | 697 | 36.6\% |
|  | 1 Total | 290 | 894 | 32.4\% | 322 | 958 | 33.6\% |
| Grand Total |  | 1489 | 8778 | 17.0\% | 1653 | 8902 | 18.6\% |

Table 8 highlights the dominance of Independent schools in combined reference schools - with only $1.2 \%$ of Government combined schools, compared to $36.6 \%$ for independent schools. Many Government combined schools have relatively high disadvantage and hence tend not to be reference schools.

The definition of a reference school is a fairly exacting one, so there is significant churn:

- 1088 schools were reference schools in both 2009-2011 and 2013-15
- 401 schools were reference schools in 2009-11 but not 2013-15
- 565 schools were new reference schools for 2013-15


## Attachment B: Regression Results

|  | OLS |  |  |  | 25th percentile quantile Regression |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Estimate | Std Err | Value | Pr>\|t| | Estimate | Std Err | Value ${ }^{\text {t }}$ | Pr>\|t| |
| Intercept | 20,582 | 644 | 32 | <. 0001 | 15,143 | 302 | 50 | <. 0001 |
| Primary enrolments | -26 | 1 | -23 | <. 0001 | -10 | 1 | -15 | <. 0001 |
| Primary enrolments squared | 0 | 0 | 20 | <. 0001 | 0 | 0 | 12 | <. 0001 |
| Secondary enrolments | -8 | 1 | -7 | <. 0001 | -4 | 1 | -8 | <. 0001 |
| Secondary enrolments squared | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 |
| Kindergarten enrolments | -78 | 13 | -6 | <. 0001 | -52 | 7 | -8 | <. 0001 |
| \% of kindergarten enrolments | 16,955 | 5,732 | 3 | 0 | 27,213 | 2,706 | 10 | <. 0001 |
| ATSI students | -10 | 3 | -3 | 0 | -5 | 3 | -1 | 0 |
| ATSI students squared | 0 | 0 | 9 | <. 0001 | 0 | 0 | 2 | 0 |
| \% of ATSI students | 10,171 | 1,405 | 7 | <. 0001 | 7,577 | 1,252 | 6 | <. 0001 |
| \% of LBOTE students | 2,244 | 946 | 2 | 0 | 3,897 | 556 | 7 | <. 0001 |
| SEA values | 45 | 199 | 0 | 1 | -600 | 119 | -5 | <. 0001 |
| \% of private income | -15,916 | 2,772 | -6 | <. 0001 | -5,322 | 1,583 | -3 | 0 |
| Private income squared | 52,139 | 3,484 | 15 | <. 0001 | 24,812 | 2,714 | 9 | <. 0001 |
| Students with disabilities | 32 | 12 | 3 | 0 | 18 | 7 | 3 | 0 |
| NSW | -2,362 | 594 | -4 | <. 0001 | -2,428 | 245 | -10 | <. 0001 |
| NT | -5,340 | 777 | -7 | <. 0001 | -5,364 | 794 | -7 | $<.0001$ |
| QLD | -2,402 | 604 | -4 | <. 0001 | -1,941 | 251 | -8 | <. 0001 |
| SA | -1,771 | 627 | -3 | 0 | -1,610 | 247 | -7 | <. 0001 |
| TAS | -3,155 | 754 | -4 | <. 0001 | -2,596 | 294 | -9 | <. 0001 |
| VIC | -3,808 | 613 | -6 | <. 0001 | -3,352 | 254 | -13 | <. 0001 |
| WA | 454 | 687 | 1 | 1 | -1,279 | 282 | -5 | $<.0001$ |
| Catholic | -904 | 1,248 | -1 | 0 | 403 | 374 | 1 | 0 |
| Independent | -1,936 | 1,650 | -1 | 0 | -1,284 | 1,099 | -1 | 0 |
| Provincial | 3,008 | 302 | 10 | <. 0001 | 695 | 167 | 4 | <. 0001 |
| Remote | 12,391 | 550 | 23 | <. 0001 | 7,044 | 951 | 7 | <. 0001 |
| Very remote | 20,765 | 782 | 27 | <. 0001 | 11,335 | 1,168 | 10 | <. 0001 |
| Secondary | 1,641 | 681 | 2 | 0 | 3,132 | 478 | 7 | <. 0001 |
| Combined | 3,926 | 552 | 7 | <. 0001 | 3,075 | 322 | 10 | <. 0001 |
| Reference school | -15 | 422 | 0 | 1 | 117 | 124 | 1 | 0 |
| SEA values private income (\%) | -2,955 | 905 | -3 | 0 | 1,394 | 567 | 2 | 0 |
| Primary enrolments in Provincial | -8 | 1 | -10 | <. 0001 | -2 | 1 | -5 | <. 0001 |
| Primary enrolments in Remote school | -32 | 3 | -12 | <. 0001 | -25 | 8 | -3 | 0 |
| Primary enrolments in Very Remote school | -57 | 5 | -12 | <. 0001 | -28 | 7 | -4 | 0 |
| Secondary enrolments in Provincial school | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| Secondary enrolments in Remote school | -10 | 3 | -3 | 0 | -4 | 3 | -1 | 0 |
| Secondary enrolments in Very Remote school | 22 | 9 | 2 | 0 | 17 | 18 | 1 | 0 |
| Primary enrolments in Catholic schools | 3 | 1 | 2 | 0 | -2 | 0 | -5 | <. 0001 |


| Primary enrolments in Independent schools | 3 | 1 | 3 | 0 | 0 | 1 | 0 | 1 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Secondary enrolments in Catholic schools | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 |
| Secondary enrolments in Independent schools | 5 | 1 | 5 | <. 0001 | 4 | 0 | 8 | <. 0001 |
| SEA values Primary enrolments | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 0 |
| SEA values Secondary enrolments | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Catholic reference schools | 620 | 416 | 1 | 0 | -181 | 101 | -2 | 0 |
| Independent reference schools | 813 | 559 | 1 | 0 | 10 | 266 | 0 | 1 |
| Primary enrolments in reference schools | -1 | 1 | -1 | 0 | 0 | 0 | 0 | 1 |
| Secondary enrolments in reference schools | -1 | 1 | -1 | 0 | 0 | 0 | 0 | 1 |
| NSW Catholic | 1,991 | 1,175 | 2 | 0 | 1,837 | 346 | 5 | <. 0001 |
| NSW Independent | 2,425 | 1,441 | 2 | 0 | 3,741 | 992 | 4 | 0 |
| NT Catholic | 6,578 | 1,805 | 4 | 0 | 5,844 | 1,030 | 6 | <. 0001 |
| NT Independent | 6,180 | 1,921 | 3 | 0 | 6,773 | 1,618 | 4 | <. 0001 |
| QLD Catholic | 1,785 | 1,193 | 2 | 0 | 1,557 | 367 | 4 | <. 0001 |
| QLD Independent | 3,388 | 1,470 | 2 | 0 | 3,439 | 974 | 4 | 0 |
| SA Catholic | 2,060 | 1,282 | 2 | 0 | 1,716 | 378 | 5 | <. 0001 |
| SA Independent | 1,811 | 1,526 | 1 | 0 | 2,748 | 1,014 | 3 | 0 |
| TAS Catholic | 717 | 1,512 | 0 | 1 | 1,456 | 421 | 3 | 0 |
| TAS Independent | 2,573 | 1,810 | 1 | 0 | 3,399 | 1,211 | 3 | 0 |
| VIC Catholic | 2,284 | 1,189 | 2 | 0 | 1,975 | 335 | 6 | <. 0001 |
| VIC Independent | 3,993 | 1,472 | 3 | 0 | 5,307 | 1,009 | 5 | <. 0001 |
| WA Catholic | -231 | 1,272 | 0 | 1 | 930 | 378 | 2 | 0 |
| WA Independent | 874 | 1,524 | 1 | 1 | 3,422 | 1,028 | 3 | 0 |
| Catholic Secondary school | -420 | 931 | 0 | 1 | -1,372 | 456 | -3 | 0 |
| Independent Secondary school | -3,037 | 1,426 | -2 | 0 | -3,075 | 916 | -3 | 0 |
| Catholic Combined school | 1,291 | 767 | 2 | 0 | -1,222 | 403 | -3 | 0 |
| Independent Combined school | -2,668 | 821 | -3 | 0 | -3,925 | 425 | -9 | <. 0001 |
| Provincial Secondary school | -2,579 | 696 | -4 | 0 | -401 | 396 | -1 | 0 |
| Remote Secondary school | -1,235 | 1,813 | -1 | 0 | -1,020 | 2,177 | 0 | 1 |
| Very Remote Secondary school | -12,811 | 2,643 | -5 | <. 0001 | -616 | 7,931 | 0 | 1 |
| Provincial Combined school | $-1,167$ | 495 | -2 | 0 | 253 | 255 | 1 | 0 |
| Remote Combined school | -4,180 | 835 | -5 | <. 0001 | -953 | 751 | -1 | 0 |
| Very Remote Combined school | $-8,948$ | 919 | -10 | <. 0001 | -3,610 | 1,197 | -3 | 0 |
| \% of ATSI students in Provincial school | -197 | 1,332 | 0 | 1 | 581 | 995 | 1 | 1 |
| \% of ATSI students as in Remote school | -5,104 | 1,581 | -3 | 0 | -2,206 | 1,734 | -1 | 0 |
| \% of ATSI students in Very Remote school | -6,568 | 1,594 | -4 | <. 0001 | -5,211 | 1,701 | -3 | 0 |
| SWD students in Catholic sector | -6 | 16 | 0 | 1 | 5 | 8 | 1 | 1 |
| \% of private income as in Secondary school | 5,838 | 2,688 | 2 | 0 | 3,677 | 1,655 | 2 | 0 |
| \% of private income in Combined school | 2,405 | 2,021 | 1 | 0 | 5,735 | 1,306 | 4 | <. 0001 |
| \% of private income in Catholic sector | -12,343 | 3,263 | -4 | 0 | -8,253 | 1,483 | -6 | <. 0001 |
| \% of private income in Independent sector | -12,460 | 3,328 | -4 | 0 | -8,937 | 2,275 | -4 | <. 0001 |

## After SWD adjustment

|  | 25th percentile quantile Regression |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Estimate | Std Err | t Value | $\operatorname{Pr}>\|t\|$ |
| Intercept | 13,751 | 267 | 51 | <. 0001 |
| Primary enrolments | -9 | 1 | -15 | $<.0001$ |
| Primary enrolments squared | 0 | 0 | 12 | <. 0001 |
| Secondary enrolments | -4 | 1 | -8 | $<.0001$ |
| Secondary enrolments squared | 0 | 0 | 4 | <. 0001 |
| Kindergarten enrolments | -56 | 6 | -9 | <. 0001 |
| \% of kindergarten enrolments | 26,907 | 2,376 | 11 | <. 0001 |
| ATSI students | -4 | 3 | -1 | 0 |
| ATSI students squared | 0 | 0 | 2 | 0 |
| \% of ATSI students | 7,163 | 1,201 | 6 | <. 0001 |
| \% of LBOTE students | 3,983 | 538 | 7 | <. 0001 |
| SEA values | -530 | 111 | -5 | <. 0001 |
| \% of private income | -4,754 | 1,457 | -3 | 0 |
| Private income squared | 26,237 | 2,954 | 9 | <. 0001 |
| Students with disabilities | 17 | 6 | 3 | 0 |
| NSW | -2,371 | 200 | -12 | $<.0001$ |
| NT | -7,078 | 821 | -9 | $<.0001$ |
| QLD | -1,512 | 206 | -7 | $<.0001$ |
| SA | -1,045 | 202 | -5 | <. 0001 |
| TAS | -2,445 | 236 | -10 | <. 0001 |
| VIC | -2,620 | 208 | -13 | <. 0001 |
| WA | -74 | 234 | 0 | 1 |
| Catholic | 1,771 | 377 | 5 | <. 0001 |
| Independent | 243 | 956 | 0 | 1 |
| Provincial | 706 | 178 | 4 | <. 0001 |
| Remote | 6,793 | 856 | 8 | <. 0001 |
| Very remote | 10,504 | 1,168 | 9 | <. 0001 |
| Secondary | 2,886 | 450 | 6 | <. 0001 |
| Combined | 2,861 | 281 | 10 | <. 0001 |
| Reference school | 124 | 115 | 1 | 0 |
| SEA values private income (\%) | 1,014 | 561 | 2 | 0 |
| Primary enrolments in Provincial | -2 | 1 | -5 | <. 0001 |
| Primary enrolments in Remote school | -23 | 7 | -3 | 0 |
| Primary enrolments in Very Remote school | -26 | 7 | -4 | 0 |
| Secondary enrolments in Provincial school | 0 | 0 | 0 | 1 |
| Secondary enrolments in Remote school | -4 | 4 | -1 | 0 |
| Secondary enrolments in Very Remote school | 17 | 15 | 1 | 0 |
| Primary enrolments in Catholic schools | -2 | 0 | -7 | <. 0001 |


| Primary enrolments in Independent schools | 0 | 1 | -1 | 1 |
| :---: | :---: | :---: | :---: | :---: |
| Secondary enrolments in Catholic schools | 1 | 0 | 1 | 0 |
| Secondary enrolments in Independent schools | 4 | 0 | 9 | <. 0001 |
| SEA values Primary enrolments | 1 | 0 | 2 | 0 |
| SEA values Secondary enrolments | 0 | 0 | 1 | 0 |
| Catholic reference schools | -191 | 101 | -2 | 0 |
| Independent reference schools | 30 | 251 | 0 | 1 |
| Primary enrolments in reference schools | 0 | 0 | 0 | 1 |
| Secondary enrolments in reference schools | 0 | 0 | -1 | 1 |
| NSW Catholic | 1,801 | 324 | 6 | <. 0001 |
| NSW Independent | 3,680 | 899 | 4 | <. 0001 |
| NT Catholic | 7,387 | 942 | 8 | <. 0001 |
| NT Independent | 8,471 | 1,421 | 6 | <. 0001 |
| QLD Catholic | 1,149 | 345 | 3 | 0 |
| QLD Independent | 2,997 | 920 | 3 | 0 |
| SA Catholic | 1,113 | 339 | 3 | 0 |
| SA Independent | 2,108 | 893 | 2 | 0 |
| TAS Catholic | 1,294 | 387 | 3 | 0 |
| TAS Independent | 3,165 | 1,087 | 3 | 0 |
| VIC Catholic | 1,226 | 317 | 4 | 0 |
| VIC Independent | 4,473 | 894 | 5 | <. 0001 |
| WA Catholic | -282 | 335 | -1 | 0 |
| WA Independent | 2,145 | 894 | 2 | 0 |
| Catholic Secondary school | -1,172 | 430 | -3 | 0 |
| Independent Secondary school | -2,856 | 831 | -3 | 0 |
| Catholic Combined school | -1,014 | 352 | -3 | 0 |
| Independent Combined school | -3,710 | 379 | -10 | <. 0001 |
| Provincial Secondary school | -295 | 420 | -1 | 0 |
| Remote Secondary school | -1,145 | 2,205 | -1 | 1 |
| Very Remote Secondary school | -1,345 | 8,032 | 0 | 1 |
| Provincial Combined school | 253 | 231 | 1 | 0 |
| Remote Combined school | -1,048 | 745 | -1 | 0 |
| Very Remote Combined school | -3,690 | 1,153 | -3 | 0 |
| \% of ATSI students in Provincial school | 514 | 1,019 | 1 | 1 |
| \% of ATSI students as in Remote school | -1,410 | 1,660 | -1 | 0 |
| \% of ATSI students in Very Remote school | -3,961 | 1,677 | -2 | 0 |
| SWD students in Catholic sector | 6 | 7 | 1 | 0 |
| \% of private income as in Secondary school | 3,646 | 1,465 | 2 | 0 |
| \% of private income in Combined school | 5,490 | 1,197 | 5 | <. 0001 |
| \% of private income in Catholic sector | -9,100 | 1,418 | -6 | <. 0001 |
| \% of private income in Independent sector | -10,301 | 2,213 | -5 | <. 0001 |

