



STATISTICS DIRECTORATE

National Accounts and Financial Statistics Division

An example of quality adjustment in education from Sweden

This document has been prepared by Birgitta Magnusson - Statistics Sweden - under item 3.4 of the draft agenda and is provided for information

Workshop on measuring Education and Health Volume

To be held on 6 & 7 June 2007

Château de la Muette,
Room Roger Ockrent

Beginning at 9:30 a.m. on the first day

An example of quality adjustment in education from Sweden

This paper has a focus on the special quality adjustment that is made in our calculations. For a more comprehensive description of the “total” compilations, please see the paper presented at the London workshop in October 2006.

The Swedish calculations of volume measurements within the school system include specifications of the following six services. Volume indices are calculated for each of these and are then weighted together with the costs as weights.

- A. Teaching
- B. School meals
- C. School transport, travel compensation and board and lodging
- D. Pupil welfare (school nurse, school doctor, study and vocational guidance)
- E. Other services
- F. Pre-school class

A *Teaching* can be divided into two components:

- a) Normal teaching (all teaching except mother tongue¹ and Swedish as a second language)
- b) Mother tongue and Swedish as a second language

a Normal teaching. The volume measurement is the number of pupil-hours. Now only the number of pupils broken down by classes is available. The current curriculum lists a total of 6 665 hours (60 minutes) for all of compulsory school, but does not list how these hours are distributed among the various classes. Teaching time has thus been broken down according to conditions prior to the new curriculum:

1st year class	20 hours per week
2nd year class	24 hours per week
3rd year class	30 hours per week
4th year class	34 hours per week
5th-9th year classes	35 hours per week

The number of pupil hours has been adjusted with **three quality indicators**:

- The number of pupils who have left 9th year class who lack final grades. There is also a small number of pupils who left compulsory school in 7th and 8th year classes without grades, for example because compulsory school attendance has been discontinued. This number is so small that it is insignificant.

¹Previously called home language.

- The merit rating for a pupil who has left compulsory school with final grades is the sum of the grades for pupil's 16 best grades, where G (pass) = 10, VG (pass with distinction) = 15, and MVG (pass with special distinction) = 20. The merit rating for subjects that a pupil has not completed successfully is of course equal to zero.
- The percentage of pupils who have left compulsory school and are eligible for upper secondary school. These pupils have grades in all three of the subjects Swedish, English and mathematics.
- The quality indicators have been compiled according to the following tabulation:

Example of volume calculation including quality adjustments, compulsory school

INDICATOR	Year 1	Year 2	Annual volume change
Pupil hours per calendar year, thousands			
Class 1	51 788	48 453	
Class 2	64 654	61 476	
Class 3	83 729	80 635	
Class 4	96 055	94 287	
Class 5	97 126	98 772	
Class 6	92 771	95 819	
Class 7	88 485	91 589	
Class 8	85 830	88 262	
Class 9, final year	84 726	85 595	
Sum, no quality adjustment	745 166	744 887	0,9996
1. Adjustment of pupil hours for those who do not receive final certificate			
	1 016	982	
Adjusted pupil hours class 9	83 710	84 613	
Adjusted total	744 150	743 905	0,9997
2. Adjustment for meritvalue, 16 subjects			
Meritvalue resp year	202,3	203,0	204,2
Annual change of merit value		1,0034	1,0056
Adjusted pupil hours class 9		83 992	85 089
New adjusted total		744 432	744 381
			0,9999
3. Adjustment for merit value & authority for higher studies			
Share of those with final certificate	90,28%	90,32%	90,59%
Annual change of merit value		1,0034	1,0056
Change in the shares		1,0004	1,0030
Adjusted pupil hours class 9		84 027	85 345
Adjusted total		744 466	744 636
			1,0002

- Unfortunately we have no measures that can be used for the years before 9th class, which would have been preferable. As can be seen from the table above, the quality adjustments used, only affect the volume index from 99,96 to 100,02. This is a most marginal adjustment.

b) Mother tongue and Swedish as a second language (SVA) is considerably more expensive per hour than other teaching. Therefore volume indices have been calculated separately for these two activities with the number of pupils as a volume measurement. Data for the number of hours is missing. Costs for SVA are presented separately up to and including 1997. Weighting factors have

been used for the following years after 1997. The figures are about 1.5 percent for mother tongue and 2.5 percent for Swedish as a second language.

B. School meals Total number of pupils in compulsory school is used as a volume measurement. By and large, all pupils eat at school.

C. School transport, travel compensation and board and lodging. There is no longer any information on the number of pupils who have school transport. In addition, this cost item also includes travel compensation and board and lodging. However, the last-mentioned item ought to be insignificant for compulsory school. In cases where volume indicators are missing, constant prices are calculated by deflating the weight cost with a price index calculated as a weighted average value of the price index for constant-route bus traffic (0.8) and taxis (0.2). A volume index for this item is then calculated based on the deflated values.

D. Pupil welfare All pupils, regardless of their class year, are assumed to visit the school doctor and school nurse equally. However, study and vocational guidance is only assumed to occur in year nine. A volume index for pupil welfare is thus calculated as the total number of pupils with the number in year 9 counted twice.

E. Other services All pupils are assumed to use these not specified services equally.

F. Pre-school class The number of children in pre-school class is used as a volume indicator. The fact that more resources are needed for pupils with language support is also taken into consideration. This is done by increasing the number of these pupils with a factor of 0.2.