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Exploring financing of Swedish primary schools in the 19th century

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Abstract: Primary schooling was made mandatory in Sweden in 1842. Previous literature on this well-known reform centres on the related political discussions at central level. This thesis examines how local school financing evolved in the 19th century in response to increased engagement from the central government and why it evolved the way it did. A particular focus is on the largely overlooked local level and the diverse sources of funding of local school districts. It is shown that more wealthy school districts were ahead in terms of spending levels. There was some convergence between well and less organised school districts over the 19th century, in spite of the fact that state grants were not aimed at redistribution. By way of conclusion a number of venues for future research are proposed.

Key words: Primary schools, reform, finance, grants, Sweden

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Östra skolan, Eslöv

Photo by the author

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1. Introduction

A sunny afternoon in August 2010 I was biking through Eslöv, a small town in Sweden's southernmost county Scania ('*Skåne*'), on my way to my favourite café located close to the railway station. The railway cuts Eslöv in two halves and I was close to the tunnel connecting the two parts when a low, but imposing, brick building caught my eye. I was looking at *Östra skolan (The Eastern School)*, a primary school built in 1876. My curiosity was sparked: How did general schooling, such an important institution for economic and social development, come about? Who paid for it and why? And what can we learn from history in a time when much of the current debate focuses on the declining quality of Swedish education and urgent calls for reforms?

1.1. Background

In 1842 the Swedish Parliament took a landmark decision for the social and economic transformation and modernisation of Sweden; primary schooling was made mandatory across the kingdom. The 1842 reform was followed by a number of decisions that gradually increased the involvement and funding from central government in locally managed primary schooling. However, the central grant system evolved at a slow pace. In the meantime school districts continued to rely on local sources of finance, as they had "always" done (Klose, 1992). The consequence was that the implementation of the reform took time and depended on varying local conditions and existing schooling structures.

The central school reforms and the concomitant political discussions are well documented in both contemporary and modern Swedish literature. However, this literature is for the most parts descriptive – few attempts have been made to systematically analyse the development of primary school finance with quantitative methods. In addition, developments at the local levels have been much less studied than the central reform process. The local level is not only important for our understanding of *how* mandatory primary schooling developed in Sweden, but for attempting explanations of *why* these developments to place. Why were some school districts ahead and some behind in terms of educational spending? Which factors influenced the actions of different school districts?

1.2. Aim and scope

The aim of my thesis is to examine how local school financing evolved in response to increased engagement from the central government and why it evolved the way it did. The research questions I would like to address are:

- How did local and state funding for primary schools progress over time and space?
- How did the funding sources of schools evolve at the school district level before and after the 1842 reform? Did state grants add to or replace local sources of finance?
- How can local variations in school spending be explained?

Due to the lack of research on school finance in Sweden during the 19th century and a scarcity of easily accessible published data from the period an explorative approach is required. This means that the different kinds of data will be used to analyse the issues from different perspectives, favouring a broad understanding rather than in-depth explanations.

1.3. Outline

The remainder of this thesis is organised as follows. *Chapter 2* reviews previous research on school finance in the 19th century in Sweden and other countries, mainly the UK. Suitable modern theories for the study of school finance and the impact of state grants are considered. The chapter leads to the formulation of a simple model of spending decision making. *Chapter 3* starts out by assessing the data availability pertaining to schooling in 19th century Sweden. The chapter moves on to discuss the quantitative methods used in the thesis in the context of limited previous research and data availability.

Chapter 4 presents the empirical findings under three main headings. Spending patterns at national and regional levels on primary schools are reviewed following a brief introduction to the history of primary schooling in Sweden. The relationship between spending levels and educational quality is discussed. The next section contains the main empirical part of the thesis: a longitudinal study of three school districts in Scania with a focus on the main sources of local school finance and how they evolved over time. In the last part of the chapter a simple regression model of school spending at parish level is used to explain differences in the level of school spending between parishes in Scania in 1874. The last chapter summarises the findings by way of conclusion and reflects on areas of future research.

2. Previous research and theoretical considerations

2.1. School finance in a historical context

Previous research on school financing of Swedish primary schools in the 19th century is limited.¹ The main exception is Klose (1992), who deals, *inter alia*, with financing of Swedish primary schools before 1842. She relies on a compilation of source material produced in the context of royal committees that were established to survey rural educational activities in the second half of the 18th century and the first half of the 19th century. She concludes that schools were mainly paid for by the local population, with contributions from the church and owners of local manors. She notes that primary education was more organised in Lund diocese and in Malmö county in particular than in other Swedish regions (p. 54).² She speculates that this could depend on the small size of parishes and the interest of individual priests and manor owners. She points out that schooling and poverty were dealt with jointly at the time. Increasing social problems and poverty forced local communities to take action and schooling was instrumental to this effect.

Westberg (2011b) traces the development of Swedish state grants in the 19th century in order to analyse whether the state took on greater responsibility of school financing over time. He finds that state grants reached around 30% of total funding by the early 1880's and remained rather stable and even declined. Westberg also studies a number of school districts in the Sundsvall region and finds that state grants played a very important role in the 1850's, up to 70% of revenue, but fell to below 40% in 1894. He concludes that state grants played a very important role initially, but that their importance fell over time. His interpretation is that the state grant system was set up to follow the expansion of primary schooling rather than taking on more responsibility for it.

Sjöberg (1996, pp. 167-173) investigates the financial situation of schools in four parishes in Bolstad, in western Sweden, between the 1870's to 1920's. He finds that teacher salaries with two exceptions made up more than 68% of total expenses in between 1880 and 1910. The schools relied on different kinds of revenue, such as state grants, municipal tax paid by the relatively wealthy, individual per capita fees and fees per school child. Pupils and parents also paid for school material. Local financing sources represented around 60% of total revenue over the study period for three of the parishes and around 50% for the fourth one.

Westberg (2008, pp. 56-62) examines the revenue sources of infant schools in Swedish towns during the second half of the 19th century and the first half of the 20th century. In particular, he finds that interest revenue from loans to private individuals made up around 20% of total revenue during the second half of the 19th century, with a gradual shift towards bank deposits. Westberg argues that lending by schools and other philanthropic institutions has not been explored in the literature to any greater extent.

The public and political debate related to Swedish schooling at national level before, during and after the 1842 reform is well-documented e.g. in volumes II (Aquilonius, 1942) and III (Sörensen, 1942) of the series *History of Swedish primary schooling*. Wallner (1938) gives a detailed account of the 1842

¹ See Westberg (2011a) for an introduction to school finance issues in a historical context.

² Sweden was organised into dioceses ('*stift*') and districts ('*härad*'), which assembled a number of parishes ('*socken*'). In 1862, there was a municipal reform that created the municipality ('*kommun*') and the county ('*landsting*') (Gustafsson, 1999, pp. 13-17).

reform and its aftermath. Thunander (1946) centres on the dual character of primary schools during the 19th century: supporting the poor and forming citizens. Wallin (1978) also discusses the organisation and finances of Swedish primary schools during the period 1842-1871.

This literature is largely descriptive and does not contain any systematic analysis of school financing, but it brings out a number of themes of interest here. There was a strong link between poor relief and development of primary schools, why ideological and socio-economic factors influenced heavily the debate. The first half of the 19th century Sweden was characterised by population increase, structural change in agriculture and increasing social stratification in the countryside. There were social problems that needed to be dealt with and schools provided a solution for poor children. At the same time was a debate on the extent to which the general population should be educated from a citizen point of view. The actual organisation and financing of mandatory schooling were (and still is) influenced by the tension between the traditional independence of Swedish municipalities vis-à-vis the increasing interest and involvement of the central authorities both in terms of financial contributions and quality control. This is one reason why it took time for a proper state grant system to develop.

Nilsson and Pettersson (2009) link the local and national aspects of Swedish primary schooling, which illustrates the continuity implicit in the 1842 reform. They centre on the role of freehold farmers who demanded education to handle complex transactions, which fuelled the development of local schooling in freeholder areas. This would support the 'decentralisation explanation' of Peter Lindert (see below). At the same time freeholders were hesitant to support central reforms if they were to foot the bill. Nilsson and Pettersson argue that when farmers were given a stronger political voice in the 1860's, they could influence the design of central reform and hence became more willing to lend support and take on the financial responsibility.

Contrary to the Swedish case there have been attempts to more rigorously study school finance and the impact of state grants in primary schooling in 19th century England. This research is more interesting from an analytical and methodological point of view than the Swedish literature. The UK debate centres on private versus public funding and provision of education. While the management of schools in Sweden was primarily a communal responsibility, in particular after 1842, education in England was predominantly privately managed. The state started to provide subsidies to local schools in 1833, but publicly managed primary schools did not emerge before the 1870's (Morris, 1977, p. 3).

Morris (1977) assesses the impact of a change in the way the government supported local schools in 1862; moving from nine targeted grants to block grants. In addition, educational performance was included as a grant criterion (payment by results). The reform was widely criticized for lowering state spending on education, degrading teacher status and hurting disadvantaged pupils. Morris focuses on the actual cash flows before and after the reform at national level. He shows that state grants would have been reduced also under the old system and that the level of school income per pupil was not significantly reduced since voluntary contributions compensated for reduced grant levels. Morris does not deal with the possible distributional consequences the 1862 reform.

This latter point is the subject of study of Mitch (2010), who asks if payment by results led to a levelling up of funding to schools or widening gaps. He calculates standard deviations over means for county level data to show that there was convergence in educational outcome and the student to

teacher ratio between counties between 1870 and 1890. In addition, the dispersion in cost per scholar was relatively stable over the period. In order to analyse the relationship between educational spending and social and economic factors, Mitch runs regressions of average cost per student on property per capita and agricultural wage, finding a small but significant positive relationship.

In an earlier paper, Mitch (1986) attempts to measure the impact of a rise in state subsidies on primary schooling in England in the second half of the 19th century. He highlights three trends over the 19th century: i) rising state grants increased access to subsidised schooling with lower fees than private schools for the working class population; ii) real expenditure per pupil in subsidised primary schools rose; and iii) fees increased in publicly subsidised primary schools until free access was introduced in 1891. Mitch (p. 391) concludes that subsidies had some impact in terms of lowering fees and raising enrolment, but that other unknown factors, which could be related to demand factors or the establishment of a public school system, account for the majority of the changes in enrolment.

Lindert (2004, pp. 104-105) analyses the evolution of mass schooling in the Western world as part of his study on social spending. He argues that that in the early stages of public schooling, decentralisation of decision-making made it easier for areas with stronger demand for schooling to move ahead, since they could decide on their own taxes and schools. They could do this even though the balance of power was in opposition to tax funded schools at national level. This has come to be called the 'decentralisation explanation' to the emergence of mass schooling in the 19th century. At later stages the opposite effect may occur; weaker areas are allowed to lag behind.³

2.2. Theories related to school finance

The literature referenced above on historical developments gives limited input in terms of theoretical models that can be used to study school finance issues, which is why this section reviews the modern theoretical literature for such inspiration.

Data from the OECD show that public sources of funding represented on average 83% of total educational funding, corresponding to 13.3% of total public expenditure in the OECD in 2007.⁴ Human capital theory provides an obvious rationale for this public interest in education, by highlighting the potential rate of return to education, even though the levels of return vary with factors such as the level of education, country, economic development, gender and the extent to which externalities are quantifiable and included in the calculations (Psacharopoulos and Patrinos, 2004, pp 15-19).

Mitch (2004, p. 265-266) provides an introduction to some common theoretical explanations for the high levels of public funding of education. One set of arguments focuses on market failures, which include positive spill-overs not taken into account in private decision-making such as the role of education in promoting citizenship or reducing crime. In addition, parents may not have the means or the willingness to provide for their children's education, with a concomitant need for redistributive measures to counter underinvestment in education and create equality of opportunity.

³ Goldin and Katz (2008) come to similar conclusions in their study of the emergence of mass schooling in the US.

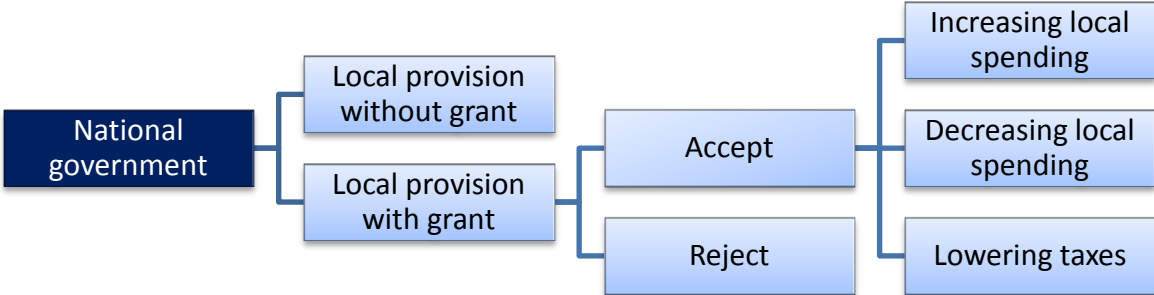
⁴ OECD (2010), Table B3.1, Table B4.1

Another approach reviewed by Mitch (2004, p. 266) is the special interest explanations that focus on the formation of political coalitions – the middle class, teacher unions or government itself - to support public schooling because they stand to gain from the resource transfers involved. In a historical context, this relates to Nilsson and Pettersson (2009) analysis of the multifaceted role of Swedish freeholders in the development of public schooling that was referenced above.

Mitch (2004, p. 278) points out school finance can be studied from a ‘fiscal federalism’ perspective that, when school funding comes from several levels of government.⁵ The basic argument in favour of decentralisation in this theory is that local government is more familiar with local circumstances, but factors such as cost savings and promoting local innovation also come into play. Central intervention may be justified by aiming to correct for regional variations of wealth and the existence of superior knowledge of suitable standards at central level.

The basic sources of funding at various levels of government are taxation and intergovernmental grants between central and lower levels of government (Oates, 1999, pp. 1124-1127). The question of which government level that should tax what is known as the "tax-assignment problem". In order to explore this issue Volden (2008) presents a formal game-theoretic model of federal decision making with two actors; central and local government. The model is presented in a slightly modified form in Figure 1. As a first move the central government needs to decide whether to be involved in provision of the service, to leave it to the local level or to provide a grant. If the central government takes no part in the service, the local government can choose the direction and quantity of the service, which may not correspond to the priorities of the central government. If, instead, the central government decides to provide a grant, three consecutive decisions need to be made. First, the conditions of the grant need to be determined, second, the local government needs to decide whether or not to accept the grant and, third, the local government needs to decide how to spend the money.

Figure 1 Grant spending decision tree model



Source: Based on Volden (2007, p. 212) and Tsang and Levin (1983, p. 332)

Intergovernmental grants either come with restrictions for the user (*conditional grants*) or are provided to the user to use at will (*unconditional grants*). In theory the former is better suited for efficiency purposes, while the latter is related to redistribution (Oates, 1999, pp. 1124-1127). Tsang

⁵ See Oates (1999) for a theoretical discussion on fiscal federalism

and Levin (1983, p. 332-336) provide a useful theoretical taxonomy of the main forms of intergovernmental grants in education:

- *Categorical grants* are used to fund particular types of educational services of national concern, such as bilingual education and aid to disadvantaged students.
- *Matching grants* are used to fund a share of particular types of educational services, with local governments contributing the rest.
- *Revenue sharing* is the practice of returning a share of central revenues to the local level to use freely, whether on education or other priorities.
- *General aid to education* provides funds specifically to educational ends.

Tsang and Levin (1983, pp. 332, 337) also describe the three potential local responses to intergovernmental grants, which are also shown in Figure 1:

- 1) Increasing local educational spending beyond the level usually funded with local resources (*stimulative*);
- 2) Reducing local educational spending through a reallocation of local funding to other local needs (*substitutive*); and
- 3) Reducing taxes that fund support to all local public goods (*dilutive*).

In a review of studies that evaluate the impact of intergovernmental grants on educational spending in the US Tsang and Levin (p. 336) found that on the whole intergovernmental grants for education raise local educational spending per capita or per pupil. There were great variability in local responses, but usually the increase in spending was lower than the original grant.

The traditional approach explain the spending decisions made by the local government and its reaction to central grants have been to use a basic median voter model in which grants are treated as other sources of local government income (Dahlberg et al, 2008, p. 2320). This model presumes that a mix between public and private goods that corresponds to voter preferences has initially been established by the local government. The effect of an external grant will be to replace – *crowd out* - local spending, by shifting local resources to lower taxes or fees. The median voter model fails to account for the so-called ‘fly-paper effect’ that has been observed in empirical studies, which implies that external grants actually tend to *crowd in* local spending. The flypaper effect can be more aptly explained by the budget maximizing bureaucracy model, which argues that bureaucracies will seek to increase their budgets, as long as the utility of the median voter is kept above the pre-grant level (Chandler, 2005, p. 63).

Both external political and socioeconomic factors determine governments’ choice of policy or in this case spending on primary education (Saeki, 2005, p. 245). According to Saeki some scholars argue that socioeconomic factors carry more weight, while others point to the importance of institutional and political factors, such as voter participation and structure of government. Another line of thinking, as presented by Saeki (2005, p. 247-248), focuses on explanatory factors internal to government. The instrumentalist approach emphasises the limitations of the policy making process and in terms of access information. It views policy making as the result of marginal changes to previous policies, which leads to a degree of invariability of policy and spending decisions. Saeki also suggests that another source of invariability could be a tendency for policy makers to increase spending proportionally across sectors. The resulting invariability can be seen to reinforce ‘path

dependency' of political decision-making, which acts "*...to narrow conceptually the choice set and link decision making through time.*" (North, 1990, p. 98)

So what would theory predict of the development of a schooling system. In a historical context, at the early stage, one would initially expect a situation with local provision without central involvement. Over time, state participation would increase and a grant system would develop as central government gets more involved in education for technological, economic and social reasons. At first, grants would be limited and reach a limited number of recipients. As the system matures, amounts and conditions would evolve and become more systematic. In terms of the decision making model it is difficult to imagine cash strapped local school districts not accepting the grant unless there is strong local opposition to state interference. To what extent does the locality really have a choice in accepting or rejecting the grant? In addition, there are other ways for the state to impose its ways through legislation, inspection and teacher education. The conditions attached also determine how locality responds to the grants. Matching grants can be expected to lead to increasing local spending since local districts are obliged to put up their own resources to receive the grant. This means that it may be difficult for poor districts to access such grants, while in districts where high levels of local spending prevail before the grant, a matching grant may initially lead to a decrease in local spending or taxes.

3. Data and methods

3.1. Availability of historical data on school financing in Sweden

Public data on school financing and grants to primary schools is published in the '*Bidrag till Sveriges officiella statistik*' (BISOS) (Contribution to Swedish public statistics).⁶ The BISOS P (Education) series is available for 1868 and from 1882 onwards. It contains both financial and educational data at district (1868 only) and regional level. The BISOS U (Municipal finances and poor relief) series is available from 1874 onwards and contains data on wealth and educational spending at region and parish level. Central government spending on education can be retrieved from the Swedish government accounts, which have been published since fiscal year 1821 (Fregert and Gustafsson, 2008, p. 184) and compiled in Widell (1900) for the years 1850-1897.

The published data on schooling are compiled from nation-wide surveys of school districts. The first surveys of local schools were intermittently conducted in 1768, 1812, 1825, 1839 and 1844 and are presented in Klose (1992). In 1846, the government sent out a request to the dioceses for information on local schools every three years, beginning in 1847. From 1850 onwards pre-printed reporting templates, which changed format a number of times, were used to collect the data (Schelin, 1978, p. 9). The original submissions from parishes can be retrieved from the archives of the Ministry in charge of schooling from 1840 – the Ministry of Education ('*Ecklesiastikdepartementet*') - at the National Archives ('*Riksarkivet*') in Stockholm. The National Archival Database of Sweden⁷ indicates that the Ministry archives may also contain unpublished compiled statistics produced by its statistics department, but this has not been verified during the thesis work.

Time-series data on school attendance aggregated at national level has been compiled for mandatory schools in SCB (1974) for the period 1847-1962 and for non-mandatory schools in SCB (1977) for the period 1864-1970. Schelin (1978) contains a compilation of the school attendance part of the above-mentioned survey responses for every three years between 1847 and 1881, aggregated at district level. Unfortunately no financial information is included.

The archives of Lund diocese located at the Regional State Archive ('*Landsarkivet*') in Lund contain school district accounts and educational information filed by year for various years, thus providing a good source for cross-sectional analysis. Lastly, individual parish archives, also located at the Regional State Archive in Lund contain records which are more suitable for longitudinal case study. The records include school district account books and summaries of school council meetings.

The reliability and quality of the submissions from the parishes and consequently the public school data have been disputed. Reporting difficulties and problems with the school finance statistics are explored in detail in BISOS P 1882 (pp. 33-39). The Parliamentarian and teacher Emil Hammarlund, also an active reading advocate, petitioned the Parliament for improved school statistics as late as 1895 (Hammarlund, 1895). BISOS U 1874, p. IX lists the problems related to collecting municipal finances, such as low knowledge of accounting practices and payment in kind. Waldow (2002, p. 153) picks up on these weaknesses and calls for using the same critical examination of quantitative data as for qualitative data.

⁶ Available at http://www.scb.se/Pages/List_257373.aspx.

⁷ <http://nad.ra.se/>

3.2. Study methods and data

The overall approach of this thesis is explorative, which is motivated by the lack of previous theory-based research and easily accessible time-series data on local school finance. In addition, the limited reliability of the existing data requires caution in the interpretation of results. The methods used are mainly quantitative, since there seems to be a real gap in this area in the previous research on Swedish school finance.

Methodological inspiration comes in particular from Mitch (2010) that was reviewed briefly above. Mitch uses various quantitative methods to analyse the change in dispersion between UK parishes over time in terms of educational outcomes and inputs and a simple regression model to analyse the relationship between average cost per scholar and taxable property value per capita.

Monetary values have been converted into SEK (*krona*), which is the currency unit in use in Sweden since 1873. Amounts expressed in the old currency unit *Riksdaler riksgälds* (until 1854) have been converted to SEK by multiplying by 1.5 (Fregert and Gustafsson, 2008, p. 10). Conversion to real prices (using 1914 as a base year) has been done using Swedish Consumer Price Index (CPI) data published in Edvinsson and Söderberg (2007).⁸

The empirical part of the thesis is based on quantitative analysis of three distinct data sets that offer distinct perspectives on school financing and are explained in the following.

a) Spending pattern at national and regional level

As a first step it is necessary to establish the broad lines in terms of local spending and state grants at national and regional levels. Such macro-level background is necessary in order to interpret developments at the local level. This part relies on published statistics, with the advantage that they include data on both funding and educational performance, thus allowing for preliminary testing of the relationship between inputs and outputs. In the absence of time-series data from before 1882, a selection of points in time has been used to illustrate developments. The following data will be used:

Variables	Coverage	Years	Sources
Local sources of finance	National	1868	BISOS P 1868
State grants	County (' <i>Län</i> ')	1880	BISOS P 1882
Children in permanent schools	Diocese (' <i>Stift</i> ')	1882	BISOS P 1890
Number of school children		1890	BISOS P 1900
Total population		1900	

The level of divergence or convergence between different regions over time in terms of school inputs and outputs is analysed by calculating the coefficient of variation (standard deviation divided by the mean). The relationship between local funding and state grants between regions is presented graphically and the trend line is estimated using Excel. A higher number indicates higher variation. Lastly, the coefficient of correlation (covariance divided by the standard deviations) is calculated to analyse the relationship between school inputs and outputs for Swedish regions at various points in time. A coefficient of +/-1 indicates perfect positive/negative correlation, while a coefficient of 0 implies complete absence of correlation.

⁸ To convert into 2006 prices, one should multiply the amounts by 41.5.

b) School finance from a local perspective

The published data do not allow for a longitudinal study of school finance issues before 1882. Data at school district level are particularly scarce. This severely limits the possibility to understand how school finance evolved over time from before the 1842 reform and beyond. In order to address these deficiencies detailed case studies of three school districts - *Barsebäck*, *Västra Sallerup* and *Vedby* - are undertaken based on the revenue side of the respective school district accounts.⁹ All parishes are in the Lund diocese. Barsebäck and Västra Sallerup are in Harjager district and Vedby in Södra Åsbo district (see map in Appendix 2). The following sources are used:

School district	Period	Source
Barsebäck	1835-1890	Barsebäck church archive at the Regional state archive in Lund
Västra Sallerup	1847-1894	Vedby church archive at the Regional state archive in Lund
Vedby	1856-1900 (gap 1879-1888)	Västra Sallerup church archive at the Regional state archive in Lund

It is necessary to limit the number of cases, since the school accounts are handwritten and stored in archives, which means it is a time-consuming task to digitalise the data, even though the accounts themselves are relatively clear and legible for a modern reader. The parishes were chosen to represent different characteristics: Barsebäck was a pioneer in terms of education, thanks to the philanthropic owner of the local manor, Västra Sallerup was also relatively early and well-organised, but less dependent on local nobility, and Vedby was a poorer and more peripheral late-comer in terms of schooling. Another critical selection criterion was the availability of local accounts over time in the archives.

This selection approach is consistent with what King et al (1994, p. 139) call ‘intentional selection of observations’, which they propose when the number of cases to be studied is small and a random selection process is less appropriate. They recommend that intentional selection should be applied in a manner that is consistent with the chosen research objectives and strategy. Cases should be selected based on the explanatory variable (e.g. socio-economic characteristics) instead of the dependent variable (e.g. school spending). This allows for variation in the dependent variable and selection bias can be avoided.

The school district annual accounts are compiled in accounting books, which enhances accessibility and consistency over time. They are basically structured in the following way as explained by BISOS P 1882 (p. 33):

Debit	Credit
Assets, beginning of year	Debt, beginning of year
Revenue	Expenses
Debt, end of year	Assets, end of year
TOTAL	TOTAL

The time-period covered for each case depends on the availability of accounts. Taken together, the time-series reflect developments of Swedish primary schooling during a 65 year period. The focus has

⁹ It should be noted that parishes and school districts do not always coincide, since several parishes could belong to one school district.

been almost exclusively on the revenue side of the accounts. Analysis of both the cost side of the accounts and the narrative information of preserved school district protocols, which would provide more full explanations of the events at parish level, has been left to future research.

There are two main problematic issues when compiling the accounts. The first issue is that loans are not dealt with in a consistent way. For most part they are not included on the revenue side, but sometimes they are, e.g. in Västra Sallerup in 1869/70. An effort has been made to exclude such instances in the analysis.

The second issue is the existence of in-kind contributions that may not have been included in the accounts, in particular in the early years. Westberg (2011, p. 16) emphasises that school accounts only reflect the monetised part of the school finances. One can see a tendency to monetise revenue over time, e.g. in the Barsebäck accounts an in-kind contribution from the municipality appears as revenue in 1876 and the rental cost of lodging for school teachers in 1882. It can be assumed that these items existed before they appeared in the accounts. In-kind items have been included in the analysis only when they appear in the accounts with a monetary value. As a consequence levels of spending and shares of funding should be considered indicative up until the 1880's.

c) Regression model

In order to assess the importance of different determinants of school spending between parishes a cross-sectional multivariate OLS model is constructed using parish-level data for the single year 1874. The sample consists of 376 observations covering all parishes in Scania with the exception of Fjälkestad/Råbelöf and Södra Vram, which are excluded because of lack of data, and the country side parishes of Lund, Trelleborg and Helsingborg, the first two of which did not receive state support in 1874. The following variables are used:¹⁰

Variable	Source
State support to primary education (SEK)	BISOS U 1874
Property value (SEK)	BISOS U 1874
Population	BISOS U 1874
Presence of manor	List in v. Schwerin (1934, pp. 420-424)
Ethno-geographical classification	Map in Campbell (1928, p. 279)

The year 1874 was chosen because it is the only year with published parish level data on school spending, unfortunately without any information on educational attainment or structure. Such data could possibly be retrieved from the archives, but that is beyond the scope of this thesis. Any attempt at constructing a longitudinal model is confronted by a similar need to go to the archives in order to compile school accounts or submissions to the authorities.

Cross-sectional and longitudinal regressions have long been applied to modern-day data to analyse both the determinants of government spending and the impact of intergovernmental grants on local schools. In a review of studies Tsang and Levin (1983, p. 336) conclude that the typical study in the latter group is based on a single equation regression model with local or total educational expenditures (on a per capita or per pupil basis) as the dependent variables and influential factors

¹⁰ See below for the formal formulation of the model and a discussion of the included variables

such as intergovernmental grants, income, population density and property as explanatory variables. Nord (1983) identifies 13 statistically significant determinants of public educational expenditures from previous cross-sectional studies. The most significant are income value, property value and percentage of school children. Other factors listed are state aid, population density and other public expenditure excluding education.

Clearly, there are many potential variables that influence local school spending in complex ways. In that context it is important to emphasise that an OLS models only allow for the study of correlations, but not causality. In addition, cross-sectional analysis is relevant to use when studying local spending at a given point in time, but it is not appropriate when studying how spending develops over time as pointed out by Tsang and Levin (1983, p. 362). In particular it is not possible to analyse local response to state grants, since it tends to vary over time.

4. Empirical findings

4.1. Historical background

Primary schools emerged in Sweden from the end of the 16th century and 40-50 schools are recorded by the end of the 17th century (BISOS P 1882, p. 2). These schools were financed by donations or by state or church taxes. Home instruction was promoted by the Church Law of 1686 that required catechetical household examinations (Sjöberg, 1996, p. 6). By the end of the 18th century the ability to read religious texts was widespread, but not necessarily the ability to write and read unknown texts (Nilsson and Pettersson, 2009, p. 2).

There were continuous discussions at state level on how to improve education for the common people and a first official commission for education was established in 1768 (Klose, 1992, p. 57). Nevertheless, education was considered a parental and local responsibility and no system of state support was established until the 1842 reform (Nilsson and Pettersson, 2009, p. 2). Meanwhile an educational system developed from below and by 1839 half of all parishes are reported to have had at least one school (Sjöberg, 1996, p. 7), but only one out of seven children is estimated to have attended a school in that year and the regional variations were great and (Aquilonius, 1942, p. 268). The existing schools were short of resources; facilities, teachers, teaching material and money were lacking (Schelin, 1978, p. 7). The City of Stockholm and Lund diocese appear to have been the leading localities in terms of having established permanent schools (BISOS P 1882, p. 7). The reasons for Lund's lead have not been systematically explored in the literature, but Thunander (1946, p. 30) finds explanations in Lund's proximity to Denmark, efforts of dedicated individuals, short distances and proletarianisation of the countryside.

The 1842 reform was revolutionary in that it prescribed mandatory schooling, but as was mentioned above financial support from the state was limited and the law did not stipulate how implementation should take place. At the same time the state did take a firmer grip on teachers' training and introduced minimum knowledge requirements (Wallner, 1938, p. 52, 96f). The 1842 reform also created a new administrative unit – the school district - which corresponded to one or more town or countryside parishes (Wallner, 1938, p. 15-26). A school board was established in each district, with the parish priest as chairman and responsible for school accounts. The other board members were local parishioners elected by the parish. The schools were initially placed under the parish council, until primary schooling was transferred to the church council through the municipal reform in 1862.

The main expenses to be covered when organising primary education in the parishes were related to school buildings, teacher salaries and to a lesser extent school material. We have already seen that local parishioners to a large degree paid for their own schools before the 1942 reform (Klose, 1992, p. 213). 98 schools are reported to receive state funding in 1839 according to the first publicly available overview of schools in Sweden (BISOS P 1882, p. 6). The 1842 reform did not change this pattern: localities should continue to finance their schools from local resources and limited state support was allotted to local schools in need and teachers training. Local school districts were allowed to charge fees for pupils and tax individual parishioners. A school tax was also created based on an existing tax. State grants should only be used in cases when it was necessary for schools to be established (Wallner, 1938, p. 141).

Implementation of the 1842 reform was slow and the first decade following the reform is described as a crisis for mandatory schooling by Aquilonius (1942, p. 325). He gives a number of reasons for this: population increase in rural communities, weaknesses in the 1842 law, lack of trained teachers, opposition from parents unwilling to lose their children as labour and the view that primary schooling was related to poor relief and hence should be the responsibility of the municipalities.

4.2. Spending patterns at national and regional levels

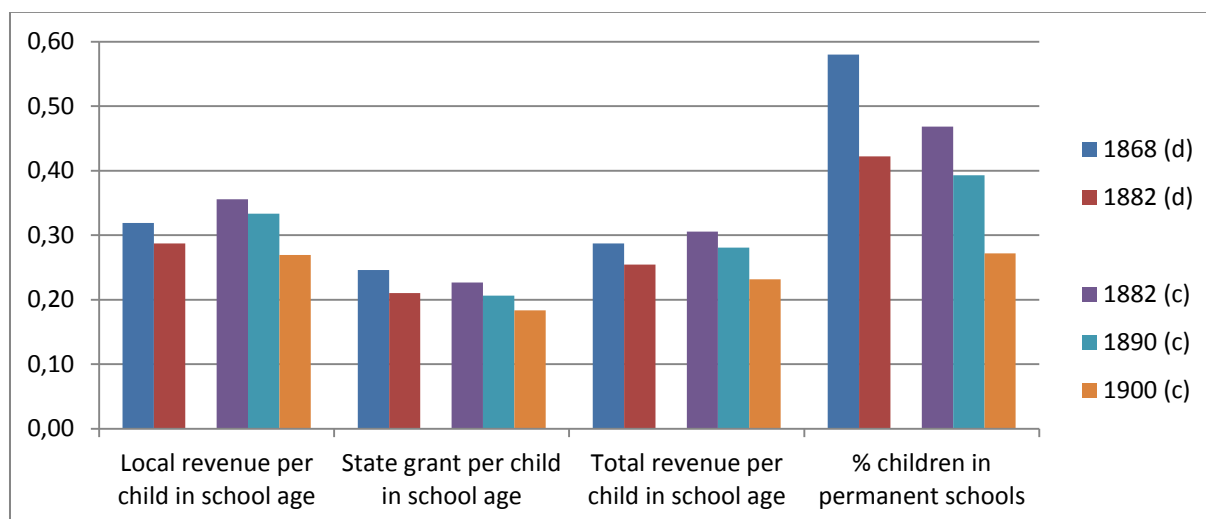
After a slow start spending on Swedish schools grew rapidly in the second half of the 19th century. Total spending on Swedish primary schools increased around eight times in real terms from SEK 3.0 million in 1868 to SEK 24.4 million in 1900 in 1914 prices (Table 1). Per capita spending grew slightly less – 5.3 times - because of the population increase. State grants represented around 30% all through the period.¹¹

Table 1 Funding sources of local schools 1868, 1880, 1890, 1900, million SEK in 1914 prices

	1868	%	1880	%	1890	%	1900	%
Local sources	2.0	68%	8.0	72%	11.8	69%	17.5	72%
State grants	1.0	32%	3.1	28%	5.4	31%	6.9	28%
Total	3.0		11.1		17.2		24.4	
- per capita (SEK)	0.9		2.4		3.6		4.8	

Source: BISOS P 1868, BISOS P 1882, BISOS P 1890, BISOS P 1900

Figure 2 Variation between Swedish regions in school inputs and outputs in 1868, 1882, 1890, 1900, coefficient of variation



Note: (d) = dioceses, (c) = counties. City of Stockholm excluded. Source: BISOS P 1868, BISOS P 1882, BISOS P 1890, BISOS P 1900

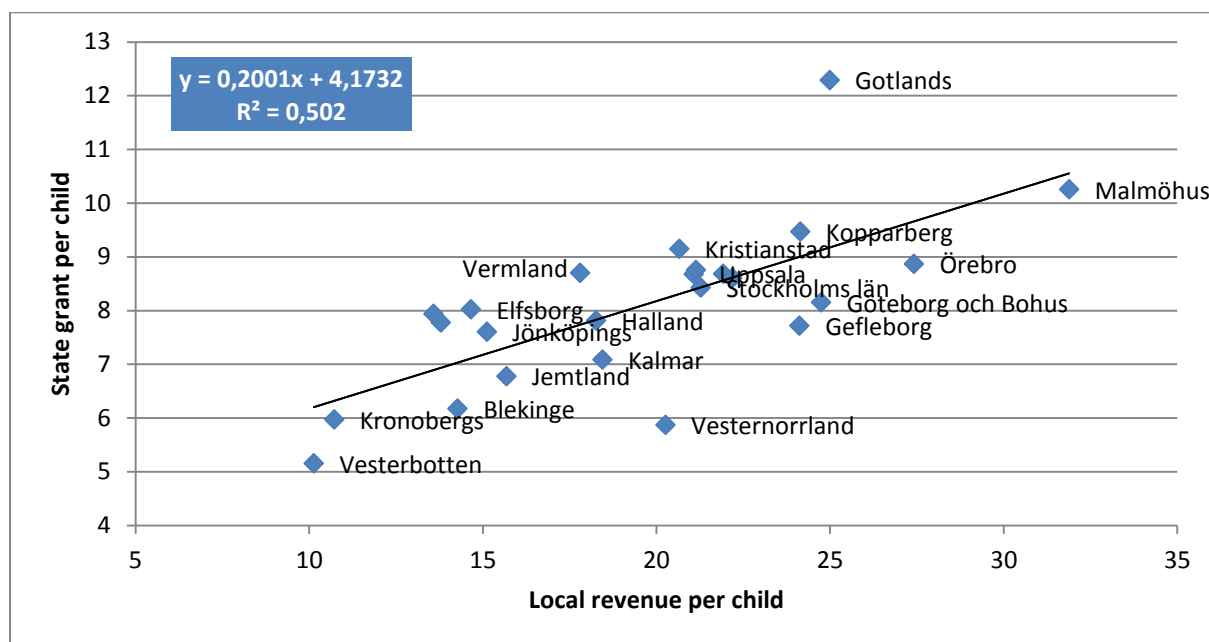
There were considerable regional differences both in terms of local funding and state grants. Unfortunately the data for 1868 are categorised by diocese, while the data for 1890 and 1900 are by county, why one has to interpret changes over the period with caution.¹² In terms of local spending per child in school age there was converging trend through the period as measured by the coefficient

¹¹ See Westberg (2011b, p. 15) for a discussion of the quality of these data.

¹² There were 13 dioceses and 25 counties in Sweden.

of variation (Figure 2). Nevertheless, differences between counties were still substantial in 1900, with Malmöhus county spending over three times more of local resources per child on primary education than the northern county Vesterbotten (Figure 3). Gotland appears as a clear outlier in terms of state funding all through the study period. The state grants were overall more equally distributed than local spending and convergence was less marked over the period. The end result in terms of variation of total spending on schools at county level was a drop in CV to 0.23 in 1900 from 0.31 in 1882.

Figure 3 Local funding and state grants in 1900, SEK in 1914 prices



Note: Some counties are not labelled to increase legibility. Source: BISOS P 1900.

The correlation between state grants and local spending was high all through the period, with a correlation coefficient of 0.88 at diocese level in 1868. This means that the counties that were able to hoard higher local revenue also received higher levels of state grants all through the period, which can be explained by the matching grant character of the state grants (see below). The coefficient fell over time to 0.77 in 1880 at county level and to 0.70 in 1900. For some reason state grants became slightly less focused on the high spending countries over time, an issue that would deserve further investigation.

In parallel with the convergence of local spending and the expansion of state funding there was a marked convergence between different regions over time in terms of quality of schooling. Here only one variable will be studied - the share of children attending permanent schools, which is used as a proxy for the maturity of the local schooling system.¹³ Figure 2 shows that the variation between Swedish regions in terms of share of children attending permanent schools was higher than for revenue levels in the beginning of the study period. One reason is likely to be that the choice of educational method was affected by non-financial factors, such as norms, religious zealotness and the need to use children as labour that may have favoured more flexible approaches to education.¹⁴ The CV then fell to a level approaching that of revenue levels by 1900, but substantial variation remained in terms of establishing permanent schools. Lund diocese reported that 54% pupils

¹³ Home education and mobile schools were less “modern” forms of local schooling.

¹⁴ See Sjöberg (1996) who analyses local opposition to school reform in the 1920’s.

attended such schools in 1868 and Malmöhus county reached 88% in 1900, while Kronoberg and Vesterbotten counties remained at 26% and 32% respectively in 1900

There was a clear association between spending levels and the share of pupils attending permanent schools over the study period. Table 2 indicates that the association between share of children in permanent schools and local revenue per child in particular was very strong in 1868. It fell in 1882, but increased slightly in 1890. By 1900 the coefficient of correlation between total revenue and permanent schools had fallen to 0.72. This fall is likely to be explained by the observation made above that the variation between counties in terms of permanent schools fell more quickly than the variation in spending.

Table 2 Coefficient of correlation between funding and share of children in permanent schools for Swedish diocese and counties, 1868, 1882, 1890, 1900

	1868	1882	1890	1900
State grant per child in school age	0.62	0.80	0.78	0.69
Local revenue per child in school age	0.87	0.72	0.77	0.68
Total revenue per child in school age	0.85	0.77	0.80	0.72

Source: BISOS P 1868 (diocese), BISOS P 1882 (counties), BISOS P 1890 (counties), BISOS P 1900 (counties)

Hitherto we have only studied associations at individual years using published data, the quality of which has been the subject of criticism. In order to study evolution over time in more detail and lower the risk of errors as far as possible it is now time to turn to archival records at district level.

4.3. School financing from a local perspective

In this section we turn to the study of the three school districts in Lund diocese that were briefly introduced above. The various sources of funding and differences between the parishes are discussed by category. The funding patterns of the three parishes are summarised in Figure 4 to Figure 6.

Figure 4 Funding sources for Västra Sallerup parish, 1848-1887

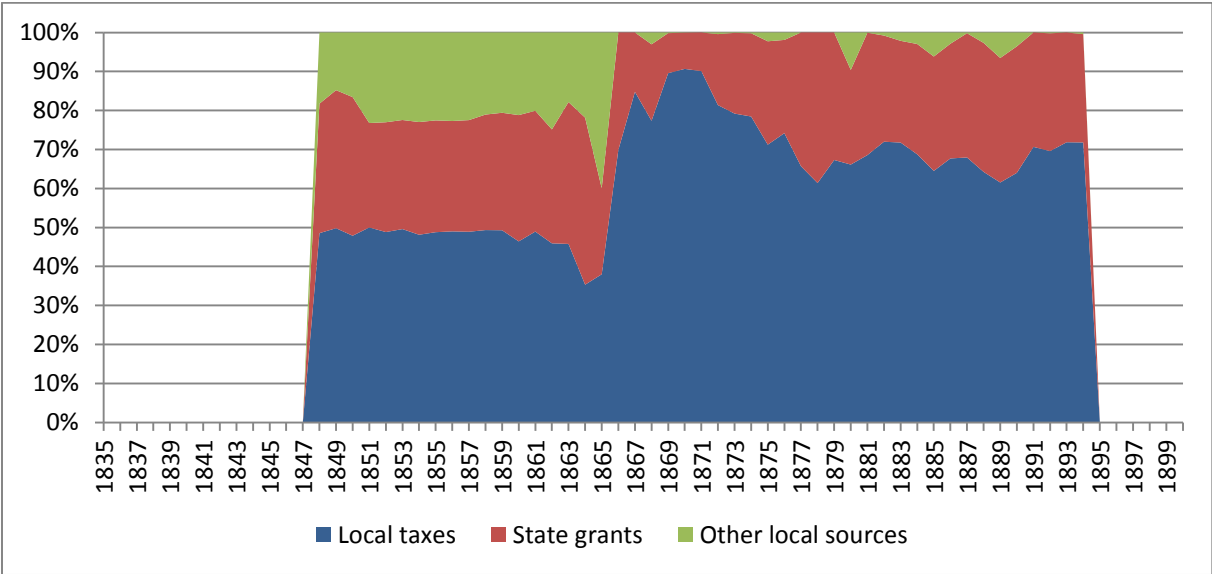


Figure 5 Funding sources for Barsebäck parish, 1835-1890

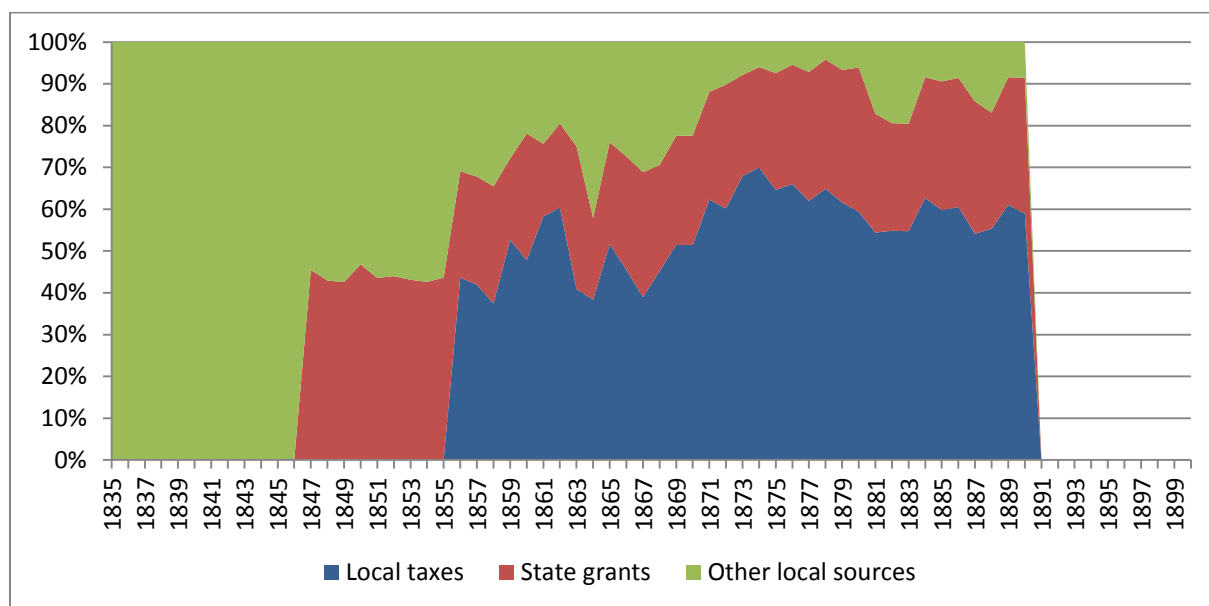
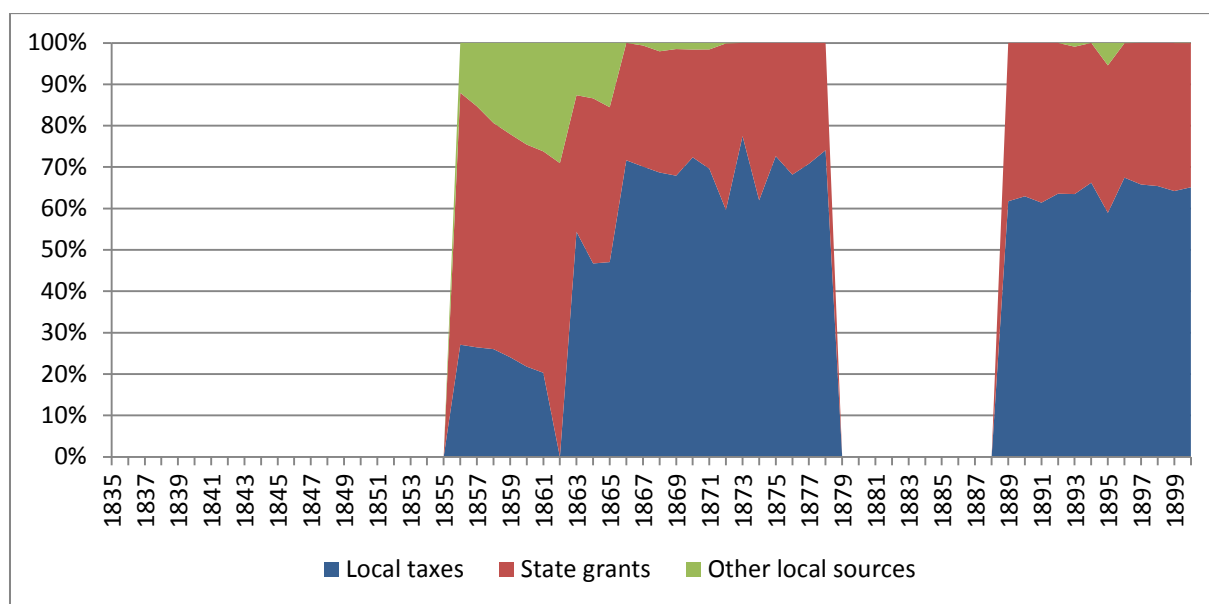


Figure 6 Funding sources for Vedby parish, 1857-1900 (no data 1879-1888)



4.3.1 Sources of finance¹⁵

a) Local fees and taxes

Klose (1992, pp. 111-116, 171-182) shows that the local population contributed to early schools both in cash and in kind. These contributions came in a variety of forms and the size of the contributions were highly individualised with the landless probably paying less. A general pattern seems to have been a per capita fee combined with a fee per child attending school, mainly aimed at covering

¹⁵ To shorten the account, some less significant in-kind contributions, sales and contribution from counties are not considered.

teacher salaries and subsistence. The parish assembly determined the levels of remuneration and it was the responsibility of the teachers themselves to get paid.

The 1842 law allowed the parishes to charge all taxable individuals a fee – within a specified interval – to finance local schools, if other means were not available (Wallner, 1939, p. 137). It is difficult from official statistics to get an overview of how this was applied in different parishes. BISOS H 1856-1860 (p. 83) and BISOS U 1874 (p. X) both note that the type of taxes and the taxable bases differ widely between municipalities. In addition, in kind contributions also make calculations and comparisons difficult.

The lack of data may be explained by the fact that local communities and towns can be considered to have been separated from the state in the early 19th century (Olsson, 2005, p. 83-84). Local fees for specific local activities such as schooling existed outside the state tax system. As local responsibilities in areas such as poor relief and education grew, municipalities were gradually given more formal rights to tax their citizens, such as the right to levy general taxes granted in the 1862 municipal reform.

Turning to the case studies, Västra Sallerup relied on various types of local fees until 1864. They had different labels - '*personella afgifter*', '*mantalspenningar*', '*hemmansavgift*' and '*läsepenningar*' - but they were all probably paid by individuals registered to pay taxes. These revenue sources were rather stable over their existence, since they were imposed as a fixed amount per tax payer. Consequently it was difficult to increase revenues. The 1862 municipal reform appears as revolutionary in this respect as it initiates a vast expansion of local funding sources to primary schools. In Västra Sallerup local taxes, excluding the school tax, increased almost 17 times between 1865 and 1870, and in Vedby 12 times between 1861 and 1866. In Barsebäck this process started later and was more gradual, with the most dramatic expansion being a doubling of local tax revenue in 1876.

In Västra Sallerup a 'contribution from the parish' emerges in 1865 to be replaced by a contribution from the municipal council in 1866. In addition, an item related to the old per capita fees '*personella avgifter/läsepenningar*' as a contribution from the municipality remains in the accounts between 1869 and 1884. From 1885, there is a single unified contribution from the municipality in the accounts. In Vedby, both monetary and in-kind contributions from the municipality appear from 1863. From that year there are also various other items related to municipal contributions both in cash and in kind that have become insignificant by 1878, when there is a break in the time series. From 1889 onwards there is one unified the contribution from the municipality.

In Barsebäck, a contribution from the parish appears in 1862 and continues until 1875. From 1876 onwards it is replaced by a contribution from the municipality. In addition, monetised in-kind contributions from the parish/municipality are reported from 1859 onwards, covering housing and other expenditures in the local minor schools that opened that year. This is replaced by a general in-kind contribution from 1876 to 1889. The annual rental cost of lodging the teachers is introduced in the accounts in 1882 and prevails through the study period.

Barsebäck is the only of the three parishes that relied on '*Helgonskylden*' as a source of school revenue from 1856 onwards. *Helgonskylden* was a local tax that was introduced in the 16th century when parts of Southern Sweden were Danish (Wallner, 1938, pp. 157-161). It was paid in grain and imposed on parishes within 20 km from towns to support certain schools in Lund, Malmö,

Kristianstad, Helsingborg, Landskrona, Ystad and Simrishamn in Scania, Sölvesborg in Blekinge and Halmstad, Falkenberg and Varberg in Halland. In 1856 the government decided that the tax revenue from *helgonskylden* should go back to the parishes to support local schools or the local church clerk/organist. When the tax was introduced in the accounts of Barsebäck it was fully stimulative and increased total revenue by 82%. It was stable over time in nominal terms and varied between 200 and 280 SEK. This also meant that it gradually lost importance as a source of revenue from a 44% share the year it was introduced to 22% in 1870 and 5% in 1890. *Helgonskylden* was abolished in 1900.¹⁶

b) School fees

The 1842 reform allowed local school districts to continue to rely on school fees charged per pupil. By 1879 school fees were used in little less than half of the school districts in Sweden and in 39% of the districts in Scania (BISOS P 1882, p. 14). School fees are not a particularly strong feature in the accounts of the three parishes examined here. For Västra Sallerup they existed already in 1847 and made up 29% of total revenue. They disappear from the accounts in 1857 when they represented around 20% of total revenue. Until the municipal reform in 1865 the fees remain as an item grouped with local per capita taxes. School fees for minor schools are entered in the Barsebäck accounts for the years 1859-61, while there are no fees reported from Vedby. Poor people were exempt from the fees according to Wallner (1938, p. 139), who asserts that in practice they were only paid by wealthy parents and contributed little to school finances. The Swedish Parliament abolished school fees in 1883 (Sörensen, 1942, p. 81).

c) Donations and interest revenue

Donations were an important source up local school finance up until the 1842 reform (Klose, 1992, pp. 116-117). In the 1839 survey of Swedish schools, 322 schools received donations from individuals, 218 had been bequeathed funds and only 98 schools had received state grants, out of a total of 2,308 reported schools (BISOS P 1882, p. 6). Donations remained a well-established way to finance primary schools after the 1842 reform and they are presented separately in official statistics all through the century. However, annual donations represented less than 5% of total school revenue by 1868 (BISOS P 1868, pp. 66-67), even though it is unclear what was been reported as donations in the statistics, for example the extent to which interest revenue emanating from donations is included.

Count Hamilton of Barsebäck manor donated SEK 1800 (300 riksdaler), or around SEK 18,000 in 1914 prices, to the Barsebäck school in 1767. In the school accounts the only sources of revenue until 1846 are interest paid by the Count and some other parties, in addition to a SEK 37.5 annual contribution from the manor to the school that prevailed in nominal terms all through the period. Interest revenue from the manor decreased by over 40% in 1847, when the school tax emerges as revenue, something that could interpreted as a dilutive effect. From that point the importance of contributions from the manor drops off to 3% of total revenue in 1867, the first year without interest revenue from the Count, to below 1% from 1882 onwards. The exception is a SEK 300 (SEK 400 in 1914 prices) donation from Countess Hamilton in 1864.

Donations from the owner of Ellinge manor in Västra Sallerup were less important. They were given during the 12 year period 1850-1861 to be used to pay interest on school district debt in nearby

¹⁶ <http://svenskuppslagsbok.se/tag/prasterskap/> accessed on 18 May 2011

Lund, representing a declining share of total revenue from 18% in 1850 to 8% in 1861. Donations could also come from people connected to the school or local funds, even though they were never important in relative terms. No donations are recorded for Vedby school district.

Interest revenue represented more than 80% of total revenue in Barsebäck until 1846, over 40% between 1847 and 1855 and 18% as late as 1870, before it lost importance. In Vedby interest revenue represented between 11% and 29% of total revenue between 1856 and 1865 before being reduced to insignificance. Interest revenue was introduced in the accounts for 1850 in Västra Sallerup and grew gradually from 2% to a 22% peak in 1864. From 1866 onwards no interest revenue is recorded in the accounts of Västra Sallerup. The recipients of the loans have not been analysed in detail, but the loans seem to have been made to private individuals, with the exception of the Barsebäck case before 1852. For a sample period 1850-55, when the loaning activities were developing in Västra Sallerup, ten borrowers in the parish or neighbouring parishes are recorded, with loans ranging from SEK 50 to 600 in current prices at 6% interest.¹⁷ The borrowers all carried common family names (ending with '-son'), apart from the priest of the neighbouring parish. By 1869, any excess liquidity seems to have been placed in banks, as indicated by the entry of modest receipts of bank loan interest during the period 1869-73.

These observations are consistent with the findings of Westberg (2008, pp. 56-62), who finds that interest revenue from loans to private individuals made up around 20% of total infant school revenue during the second half of the 19th century, with a gradual shift towards bank deposits. In an analysis of the credit market for farmers in Scania in the years 1800-1870, Svensson (2001) finds that individuals had access to a number of credit options of which loans from parish/school resources was one, an activity with roots in the middle-ages. In a review of 108 loans in three parishes in Scania Svensson (p. 170) shows that all of the borrowers were men and 70% were farmers, while the rest included groups such as crofters, craftsmen and soldiers.

d) The school tax

The most important financial innovation from the central authorities in the context of the 1842 reform was the creation of the school tax (*'folkskoleavgiften'*) in 1846 by replacing half of an existing tax (*'skyddsavgiften'*) (Aquilonius, 1942, p. 339). The school tax was a per capita tax that in total amounted to around SEK 644,000 in 1847 and SEK 713,000 in 1868 in 1914 prices (BISOS P 1868, pp XIX-XXI), thus increasing only 11% in real terms in 21 years. It is important to distinguish this tax from the local fees and taxes analysed above and the state grants discussed below. The school tax was collected through the state tax collection system and was restored to the parishes under the condition that they organised their schooling according to the 1842 law, in particular by hiring a qualified teacher (Wallner, 1938, p. 148). In Tsang and Levin's (1983) taxonomy of intergovernmental grants, the school tax could be labelled conditional general aid to education.

The school tax was criticised in Parliament for favouring large parishes, since it was based on the number of inhabitants rather than the number of teachers or schools (Sörensen, 1943, pp. 69-77). Parliamentarians also suspected that parishes accumulated tax revenue instead of financing education. There were also proposals to increase parish revenues by using the other half of the *skyddsavgift*. In 1871 a solution was found when the school tax was merged with the various state grants and allocated by teacher. In 1883 the Parliament decided that municipal expenses for

¹⁷ The interest level was fixed by law at 6% (Sjöberg, 2001, p. 148)

schooling should be financed through the regular local taxing system, but municipalities were allowed to charge a limited per capita school tax if they so wished. (Sörensen, 1943, p. 82). The same year the *skyddsavgift* was abolished.

The school tax features from the beginning of the available time series for Västra Sallerup (1847) and Vedby (1856). For Barsebäck it enters the accounts in 1847, with the simultaneous drop in interest revenue that has already been mentioned above. The school tax accounted for over 40% of revenue for Barsebäck until 1856 when the share drops to 25%, due to the addition of the *helgonskylden* in the accounts (see above). For Vedby the school tax accounted for over 60% of revenue until 1863, when other local sources of revenue and state grants appear. Västra Sallerup was the least dependent on the school tax of the three parishes since it also relied on local fees; it made up around 30% of school revenues until 1865. In all three parishes, the school tax grew slowly over the period, why it gradually lost importance compared to other expanding sources of revenue in particular from the mid-1860s. The tax disappears from the accounts in 1871 and is replaced by considerably higher state grants in 1872 as the state support system was reformed.

e) State grants

By 1839 only 98 schools had received targeted state grants, out of a total of 2,308 reported schools (BISOS P 1882, p. 6). These grants were set up as a separate budget item for the first time during the 1840 Parliamentary session, but the amounts were limited to nominal SEK 100,000 per year (BISOS P 1868, p. xix-xxii). Over time the allocations grew and reached nominal SEK 515,000 in the mid 1860's, one third of which went to teachers' training, school inspection and higher-level primary schools. The rest was dedicated to supporting school districts, which had to apply for the funds and match the grants in various proportions with their own resources. By 1868 1,139 parishes received support for the improvement of schools, 1,326 to increase teacher salaries and 430 because they were poor.

In the 1871 reform of the state grant system all individual grants and the school tax were merged into a single budgetary item to be allocated proportional to the number of teachers employed in each school district and corresponding to first half and in 1875 two thirds of their salaries. The recipient school districts also had to live up to certain organisational requirements. Wallin (1978, p. 382) argues that the state in practice took over financial and organisational control of primary schooling through the 1871 grant reform, even though local parishes continued to have the main responsibility.¹⁸

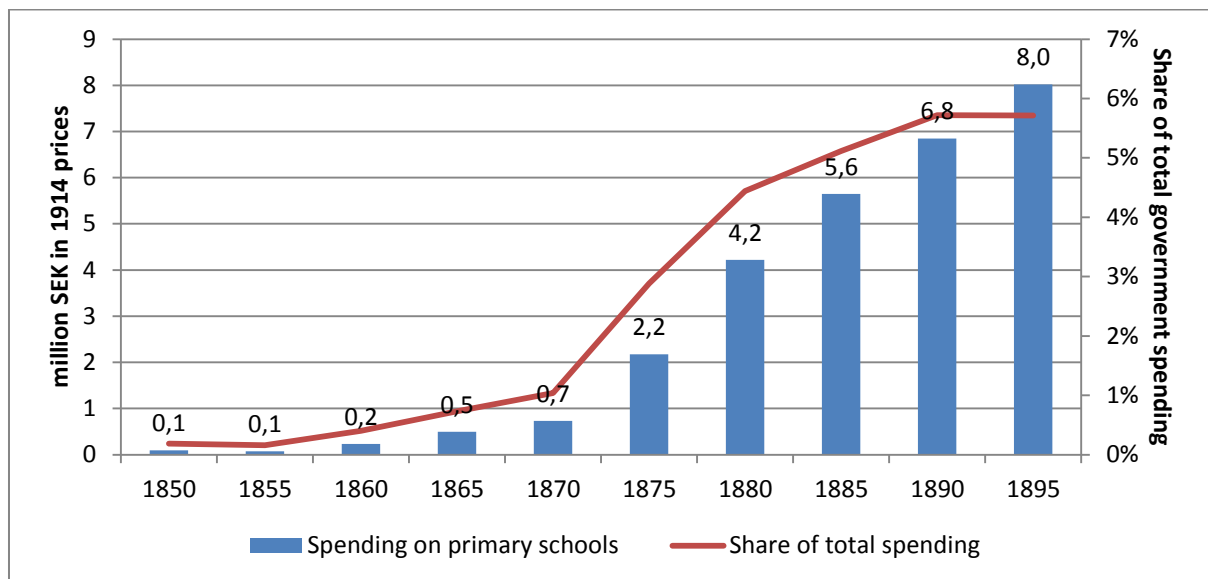
The 1871 reform led to a rapid expansion of state support to primary education, in particular until around 1880 (Figure 7).¹⁹ By 1895, spending on education, including primary and secondary education and universities, made up almost 11% of total central government spending, making it the largest sector after defence (which represented almost half of total expenses). Disbursements to primary schools alone represented 5.7% of total central government spending in 1895, up from a

¹⁸ The state continued to increase its involvement in primary schooling over time. After the Second World War there were a number of reforms that aimed to create more equal educational opportunities for all children. By the 1970's state grants were distributed by number of pupils. In 1989 the system was upheaved through a total decentralisation of both primary and secondary education to the municipalities. State grants are now delinked from schools and each municipality is free to decide on how much to spend on children's education. In parallel, a number of targeted state grants have been created (Skolverket, 2008, p. 12-13).

¹⁹ For a more detailed investigation of state grants in 1868-1900, see Westberg (2011b)

very low level in 1850.²⁰ However, local spending grew as well, why the share of state grants of school funding remained stable at around 30% as was shown in Table 1 above.

Figure 7 Annual central government spending on primary schools, per lustrum, 1850-1895



Source: Widell 1900, p. 154, 167.

Barsebäck received its first targeted state grants in 1860 and on a continuous basis from 1863. Vedby received state grants from 1863 and Västra Sallerup from 1864. In all parishes the appearance of targeted state grants in the accounts coincided with that of the new local contributions related to the 1861 municipal reform. As we have already seen local sources of finance grew rapidly during this first period in Västra Sallerup and Vedby, why it is difficult to argue that state grants displaced local funding to any greater extent. In Barsebäck there was a decrease in local funding when state grants appeared in 1863, but the level was restored in 1864 and from 1867 local funding was on the increase. By 1871, state grants including the school tax represented 10% in Västra Sallerup, 26% in Barsebäck and 29% in Vedby.

Following the 1871 state grant reform state, when the school tax was integrated into the state grant system, state grants more than doubled in Västra Sallerup in 1872, while they increased 37% in Barsebäck compared to the combined revenue from school tax and state grants in 1871. In Vedby state grants actually decreased 17% between 1871 and 1873, before increasing 70% in 1874. It seems as if Vedby lost out from the 1871 reform as was the case for six out of nine school districts in the Sundsvall region in the county of Vesternorrland analysed by Westberg (2011b, p. 11).

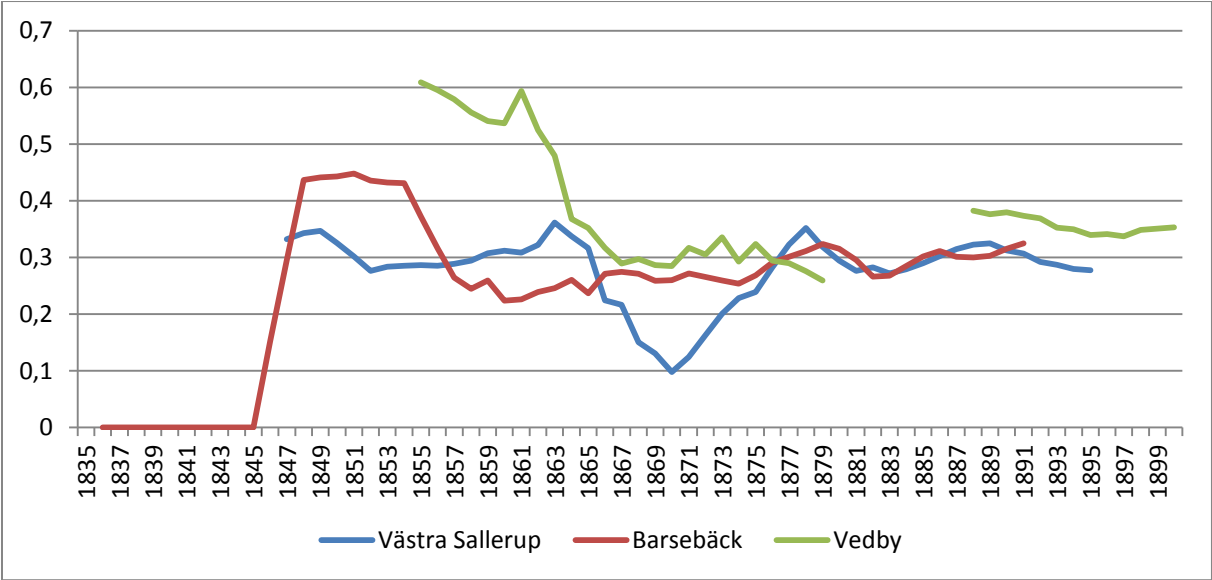
What was the reaction of the state grants on local spending post-1871? A viable answer to that question would require further statistical testing than has been possible here. In Barsebäck, local spending doubled between 1871 and 1874. In Vedby local spending dropped almost 40% in 1872, but more than doubled in 1873. In Västra Sallerup local spending grew in 1872 and the dropped off in 1873 as did the state grants. Over the studied periods, total school spending continued to grow in the three parishes, albeit with some annual variations. This first appreciation would favour the view that state grants on the whole were stimulative.

²⁰ Cost-of-living index excluding direct taxes and social benefits is available in SCB (2004)

From 1876 onwards, state grants represented around 30% of annual school funds for Barsebäck and Västra Sallerup, while it reached 38% in Vedby in 1889 after the gap in the time series. Sjöberg (1996, pp. 170-171) finds that between 40% and 50% of school funding was from state and other external sources in four parishes in Bolstad in Elsfborg county in western Sweden between 1875 and 1920. The Sundsvall parishes reviewed by Westberg (2011b, p. 16) relied almost exclusively on state grants in the 1850's. By the 1880's the share had fallen to between 30% and 40%. Westberg argues that the state grant system was most important in the initial years of mandatory schooling to create conditions for a school money economy.

Figure 8 gives an overview of the share of state support of total spending in the three Scania parishes. Vedby can be said to be the one most resembling the Sundsvall parishes, but all of the Scania parishes were oscillating around 30% already by the end of the 1860's. State contributions were becoming insignificant for Västra Sallerup, but this trend was countered by the state grant reforms in the 1870's.

Figure 8 Share of state contributions of total spending on schools in three Scania parishes 1835-1900, three year moving averages



4.3.2 Exploring the differences

In this section we have so far focused on the different sources of revenue and their evolution. It is time to take a step back and assess the overall development of funding sources over time and to discuss the differences between the school districts. Characteristics of the three case school districts are presented in Appendix 1.

Barsebäck and Västra Sallerup are both located in Malmö County on the open plains close to Lund. A school was founded in Barsebäck as early as 1727 under the impetus of the owner of Barsebäck manor, who owned all land in the parish. It relied entirely on donations from the manor for its funding until the school tax was introduced in 1847, but donations and related interest revenue continued to represent an important funding source all through the study period. A school was founded relatively early in Västra Sallerup. When the accounts start the main funding source is local

taxes and the school tax with limited contributions from the local manor – Ellinge. The parish was relatively wealthy and around half of the land was owned by independent farmers. The population grew rapidly in the second half of the 19th century, which could be associated the establishment of the railway in Eslöv in 1858. Vedby is more peripheral than the two other parishes; located as it is in forested areas in Kristianstad County.²¹ The school accounts start in 1856 and the local sources of funding were limited. Around 1860 total spending on schools per capita was around a third of that of Barsebäck and little more than half that of Västra Sallerup. Vedby was large and not very densely populated. There was no manor and 80% of the land was in the hands of private farmers.

In terms of total spending per capita the relative levels shift between the three parishes over time. Västra Sallerup had the highest level in 1850, but was surpassed by far by Barsebäck in 1860. In 1870 the positions were reversed again, with Vedby surpassing Barsebäck. Barsebäck's level, and to some extent that of Vedby, rose rapidly until 1890, while that of Västra Sallerup stagnated. In 1890 Vedby spent more per capita on primary education than Västra Sallerup, which could be described as a catching up phenomenon. This reversal was not only due to faster population growth in Västra Sallerup; total spending grew 20 times in real terms in Vedby between 1856 and 1890 compared to around 15 times in Västra Sallerup.

4.4. Explaining differences in spending among parishes in Scania

Theory and the case studies above indicate that differences in terms of the composition and level of school funding between local communities are related to their socioeconomic characteristics. A selection of these characteristics will be tested in a cross-sectional multivariate regression on parishes in Scania in 1874 based on 376 parishes listed in BISOS U 1874. The following Ordinary Least Square equation will be estimated using Excel:

$$\text{STATE SUPPORT} = a + b_1 * \text{PROPERTY} + b_2 * \text{MANOR} + b_3 * \text{PLAINS}$$

The variables are summarised in Table 3 and discussed below.²² The results are presented in Table 4.

Table 3 Summary statistics for model variables

Variable	Description	Average/ share	Standard deviation
STATE SUPPORT	State support to primary education per capita in 1874 (SEK current prices)	0.48	0.22
PROPERTY	Property value per capita in 1873 (SEK current prices)	835	361
MANOR	Presence of manor in the parish	35%	-
PLAINS	Parishes located in the plains area of Scania	35%	-
a	Constant	-	-

Dependent variable:

STATE SUPPORT: As we have seen there is a correlation between state support and local funding sources, which can be explained by the fact that the former came in the form of matching grants in

²¹ Campbell (1928, p. 279)

²² The sources have been presented above. The population data are from 1872.

particular after 1871. State support is chosen here as the dependent variable, because it is likely to be a safer measure of the state of schooling in a parish. It has a relatively smooth development over time, is clearly monetised and is more likely to be reported correctly than local contributions. In addition it does not contain any extraordinary items, such as investments in school buildings, which may distort the results for a single year, or in-kind contributions.

Independent variables:

PROPERTY: Land property values were introduced around 1802 to be used as a basis for taxation of land (Olsson, 2005, p. 76). The values were to be based on the quality and production potential of land, but in practice there were local variations in how this was done. Consequently, property values are not a perfect measure of wealth. In the UK context, Mitch (2010, p. 26) finds a statistically significant correlation for 42 counties between property value per capita for 1859 and average cost per student in 1879 (coefficient = 0.055, $R_2 = 0.341$).²³ One could expect a positive relationship between wealth and school spending. Since the state contribution in Sweden was designed as a matching grant, a positive coefficient is also to be expected between wealth and state grants.

MANOR: A dummy variable is used with the values: 1=presence of manor, 0=no presence of manor.²⁴ The case of Barsebäck clearly highlights the potential positive role of large land-owners in the development of early primary schools. Klose (1992, p. 66-77) lists a number of other cases. However, large estates may have acted as a conservative force later on. Svensson (2001, p. 242) and Nilsson (1995, p. 18) both argue that freeholders (provided their land holdings were not too small) had higher motivation to become entrepreneurs and to learn how to read and write, e.g. by being able to participate actively in land distribution reforms. One should note in this context that Barsebäck has the lowest level of spending per capita on primary schools among the three case parishes by 1870 (see Appendix 1). As a consequence it is difficult to predict the sign of the coefficient.

PLAINS: A dummy variable is used with the values: 1=located in the plains area in the south and southwest, 0=located in middle and forest areas in the rest of Scania. The purpose is to account for the effect of ethno-geographical proximity to Denmark and Lund. Klose (1993, p. 102) shows that the early schools in Scania (built 1727–1814) were concentrated in the south and south-west, with a small group in the middle and a few schools scattered in east and north-east. Between 1815 and 1839 the south-west of Malmö country was still the best performer in terms of school construction with a propagation of schools towards the north-west and the north-east (Idem, p. 182). In addition, Svensson (2001, p. 243) asserts that investment in education was higher in central areas close to grain trading centres such as Landskrona. Appendix 2 shows that in 1874 there is an apparent higher level of state grants per capita in the south west at district level, but not in the south. Consequently, the ethno-geographical classification may not be fully relevant in the 1874 context, but a positive coefficient is to be expected.

The results of the regression are showed in Table 4. The PROPERTY and the MANOR variables are clearly statistically significant (p value below 0.05), but the coefficients have low values. The regression yields an explanatory power (R_2) of 40%, which is comparable to Mitch (2010, p. 26). The coefficient for PROPERTY is positive as was expected - a SEK 100 increase in property value per capita

²³ He also controls for differences in wage level, which will not be done here since the parishes are

²⁴ This measure should be considered a proxy for more exact data on land-ownership.

increases state grants per capita by SEK 0.04. This means that for the average parish a 12% increase in taxable property can be associated with an 8% increase in state grants. The result lends support to the hypothesis that more wealthy parishes have more developed schooling.

The presence of manors in a parish has a slightly negative effect (- SEK 0.07) on school spending per capita. This could be attributed to the conservative effect of large estates, but the effect is likely to vary over time. It is not unlikely that a positive effect of manors could be isolated for earlier points in time, e.g. before the 1842 reform. The coefficient of PLAINS is negative, which is somewhat counter-intuitive, but it is not statistically significant. A tentative explanation is that the ethno-geographical variable groups the high-spending parishes in the south-west with low-spending parishes in the south. A measure based on purely geographical distances from Lund/Malmö and possibly Kristianstad may have been preferable. Another variable that should be included in future research is population growth/density.

Table 4 OLS regression results for STATE SUPPORT

R₂	0.401		
Adjusted R₂	0.396		
No observations	376		
	Coefficient	Standard error	p value
a	0.19236	0.02	1.724E-15
b ₁ (PROPERTY)	0.00039	2.67E-05	8.086E-39
b ₂ (MANOR)	-0.07053	0.02	1.8357E-04
b ₃ (PLAINS)	-0.03896	0.02	0.059

5. Conclusions

By way of conclusions we start by addressing to the original research questions:

How did local and state funding for primary schools evolve over time and space?

Before the 1842 reform local schools were funded by local taxes and fees, with ad-hoc contributions from the state and the church. Post -1842, some key milestones can be identified that extended state involvement in school funding. First there is the introduction of modest state grants through the 1842 reform and the creation of the school tax in 1847, which was the first real effort by the state to support primary schooling. A municipal reform in 1862 strengthened the taxing rights of municipalities and is associated with the start of growth in local tax revenue. The state grant reforms of 1871 and 1875 created a unified support structure that grew in absolute terms, but not relative to local funding. State support to Swedish primary schooling remained at around 30% until the end of the study period.

There were, however, considerable regional differences both in terms of local funding and state grants that also prevailed through the study period. The south-western part of Scania was clearly a leading region. Over time, there was greater convergence in local funding than in state grants. In terms of the taxonomy of intergovernmental grants, the state contributions rapidly took on a matching grant character. This means that they were not primarily aimed at redistribution. There was a clear correlation between state grants and the level of local funding in the Swedish regions that declined slightly over the period. In addition, school districts with high levels of spending were also likely to have more developed schooling (in terms of the share of pupils in permanent schools), even though this association was also becoming less strong at the end of the century.

How did the funding sources of schools evolve at the school district level before and after the 1842 reform? Did state grants add to or replace local sources of finance?

The three case parishes reveal distinct differences in terms of the composition and evolution of funding. Barsebäck was funded by donations and interest revenue until 1847, when local taxes and the school tax appeared in the accounts. The old sources of funding remained a relatively important revenue source until the 1870's and even thereafter. Västra Sallerup was dependent on local taxes, school fees and the school tax from the beginning of the study period. The school tax was the most important for Vedby of the three parishes, but it diminished in importance from 1862 when new local tax funding is introduced, as was the case for Västra Sallerup a bit later in time. All of the Scania parishes were oscillating around a 30% share of state contributions from the end of the 1860's. The 1871 state grant reform benefited Västra Sallerup and Barsebäck, but reduced state funding momentarily to Vedby.

Further testing with more detailed longitudinal data is needed to determine the impact of state grants on local spending. One can hypothesise that if anything there were periods of crowd in up until the 1871 state grant reform, since the share of the share of state contributions in the accounts fell due to strong growth in local tax revenue. In the 1870's and 1880's, when state grants kept pace with local spending, it is possible that there were cases of crowd out.

How can local variations in school spending and resources be explained?

Theory tells us that both external political and socioeconomic factors influence the level of spending on primary education. Indeed, the three case parishes have different characteristics that may help to explain differences in the composition and level of spending. Factors of potential relevance identified above are the existence of a manor in the parish, geographical situation, wealth and population growth. However, the importance of these factors varied over time. This effect is difficult to capture with a model based on panel data as the one used in this thesis. Using 1874 data resulted in a statistically significant but weak positive contribution of property value and a very weak negative contribution of the existence of manor in the parish to the level of state grants.

Back to theory

What are the implications of these observations on the grant spending decision tree model presented in Figure 1? The model is useful since it allows us to structure the decision making process related to state grants. However, a major drawback is that it lacks a dynamic perspective, which is necessary in the study of institutions over long time periods. It is apparent that initial conditions matter. Västra Sallerup appears as much less affected by state grants than Vedby or parishes in Skellefteå. Over time, the conditions and relative performance change; early starters may be surpassed during a catch-up process. In addition, in the Swedish situation with a cash-strapped local level and a strong central state, more research is needed to reveal whether school districts really had a choice in accepting or rejecting state contributions. Finally, the model seems to underestimate the local dynamism in terms of the local spending decisions that are made even though a state grant and its conditions are accepted by the local community. This is evident from the fact that there was convergence between Swedish regions in terms of school spending and performance in spite of the fact that the central grant system was not aimed at redistribution.

Another approach could be to construct a simple typology of local communities that may be used to analyse local differences in decision-making and behaviour. A very rough first classification based on the few parishes discussed above could be:

- *Top-down early-movers* – Well-endowed parishes such as Barsebäck, where a centrally placed institution or individual initiates local schooling. Such a parish may have inherent power structures that may make it less able to adapt to modernisation.
- *Bottom-up early-movers* – Parishes such as Västra Sallerup, which are wealthy and dominated by free-holders. Such a parish may be more amenable to adapt to modernisation and accumulate local taxes.
- *Late movers* – Poor parishes with little incentive to organise formal schooling, but that may become relatively dynamic as wealth is spread and structures modernised. Social or religious support or opposition to mandatory schooling may also be a central factor.

Implications for future research

This has only been a first exploratory attempt to analyse school funding and concomitant state grants following the 1842 reform using various quantitative methods. There are a number of possible venues to continue this line of research:

- A first concern is to collect and compile time-series data on local funding and state grant allocations at parish, district, county and central level along the lines of what was done for the school attendance by Schelin (1978). A problematic area is the existence of in-kind items not included in school accounts.
- Secondly, there is a need for more case studies at parish level to learn more of local conditions and behaviour and improve on the typology of local communities proposed above. The cases should ideally be broader and deeper than what has been possible here. They should include both in-kind funding and the revenue sides to get a more comprehensive picture of the financial side of the development of schooling. In addition, parish and school district protocols would need to be analysed in order to improve the understanding of the underlying factors influencing spending decisions.
- More thorough testing to find determinants of school spending would be valuable, in particular by using longitudinal data or panel data from different periods in time. Other explanatory variables such as population growth, population density and measures of ownership structures should be used.
- With more data, more systematic analysis of the effects of state grants on local spending can be attempted taking the effects of the 1861 municipal reform and the state grant reforms of the 1870's as a starting point.
- Finally, and no less important, the analysis of the 19th century could be extended to link up with the developments of later and modern periods in order to analyse path dependency at both national and local levels.

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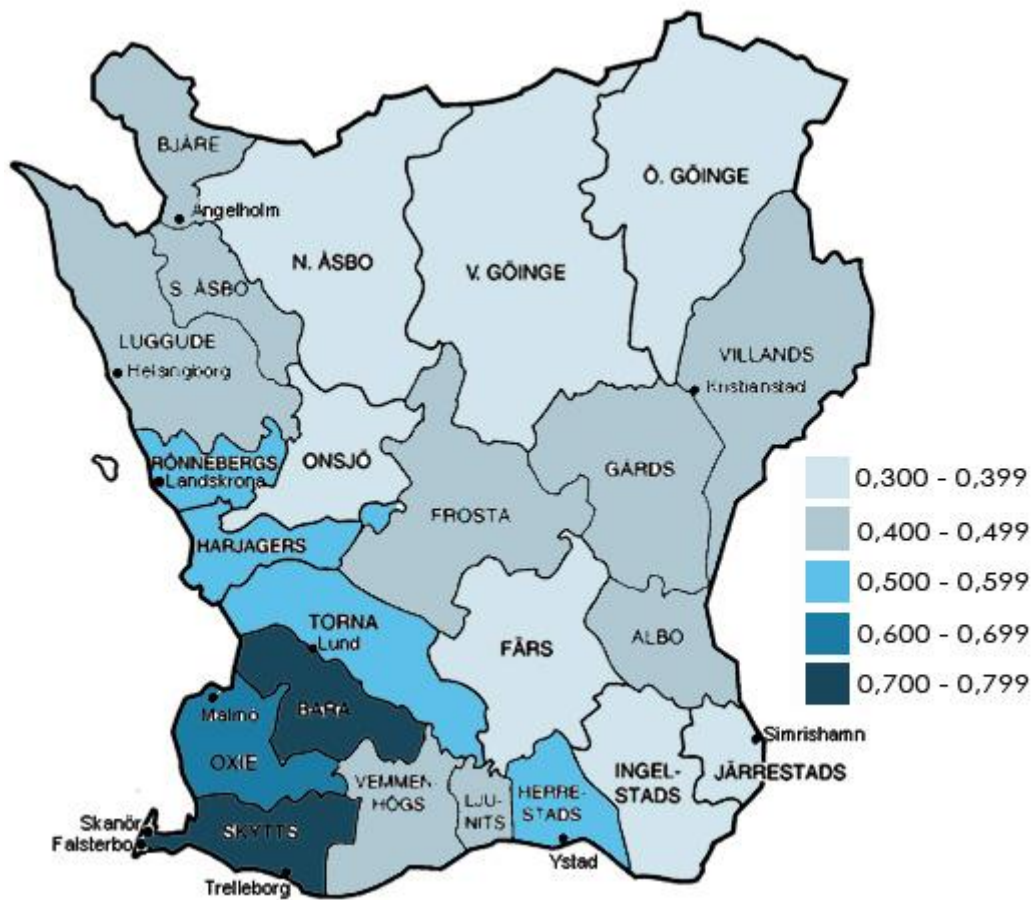
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Appendix 1 Characteristics of the three case school districts

	<i>Year/ period</i>	Västra Sallerup	Barsebäck	Vedby
Modern municipality		Eslöv	Kävlinge	Klippan
Distance to Lund (km)		17	20	59
Area (kvm)		32	15	67
Population	<i>1810</i>	1,135	696	722
	<i>1850</i>	1,766	1,010	1,284
	<i>1890</i>	4,405	909	1,603
Population density	<i>1850</i>	55	67	19
	<i>1890</i>	138	61	24
Taxable property /capita (1914 SEK)	<i>1856</i>	149	153	78
	<i>1874</i>	1,227	873	809
Manors		Ellinge	Barsebäck	None
Share of taxable land belonging to independent farmers	<i>1857</i>	47%	0%	80%
Year first school on record		1,781	1,727	N/A
Total revenue/capita, average (1914 SEK)	<i>1850</i>	0.69	0.46	N/A
	<i>1860</i>	0.56	1.10	0.32
	<i>1870</i>	2.13	1.31	1.47
	<i>1880</i>	2.30	2.85	N/A
	<i>1890</i>	3.23	6.34	4.16
	<i>1900</i>	N/A	N/A	5.67
State grants as share of total revenue	<i>1860-90</i>	28%	28%	35%*
Local taxes as share of total revenue	<i>1860-90</i>	69%	53%	64%*
Other sources as share of total revenue	<i>1860-90</i>	3%	19%	1%*

Note: * Excluding 1879-1888 (information missing). Source: Distance to Lund: Google map, walking distance, from parish church to central Lund. Area: Harlén (2003). Population: Umeå Demographic database. Taxable property: Hammar (1860) and BISOS U 1874. Manors: Schwerin (1934). Share of taxable land: Hammar (1860). Year first school: Klose (1992). Revenue and grants: Church archives

Appendix 2 State grants per capita per district in 1874



Source: Based on map published on the Website of the Demographical Database for Southern Sweden (<http://www.ddss.nu>) accessed on 2011-05-20