

**Parental Contributions, School-level Finances, and
Decentralization:
An Analysis of Nicaraguan Autonomous School Budgets**

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Summary

The Nicaraguan Autonomous School Program is unique among school governance decentralization reforms in the Americas in the degree of control given to parents, especially in decisions regarding the allocation of school resources. Much of schools' discretionary spending was accumulated through various school charges. This paper analyzes rare school-level budget data to determine the portion of resources that derived from parental contributions and other school-based commercial activity. We find the contributions to be significant, highly varied, and correlated with income. The results have implications for many decentralization reforms that encourage local contributions as part of both their financing and accountability strategies.

Introduction

Over the past decade, the multilateral development community—especially the World Bank—has advocated decentralization of school governance in Latin America.ⁱ Very little is known about the actual attributes of such policies (Behrman and King 2001), which often go hand in hand with a call for increased parental and community participation as a means of improving accountability. Since 1993, Nicaragua has set in motion one of the most radical educational decentralization experiments in the world. The Autonomous Schools Program implements a system of school-based management that relies on school-site councils that 1) have a voting majority of parents and 2) allocate resources that derive from fees charged to parents. These councils have broad powers including hiring and firing school principals. Nowhere in the Americas have parents officially been given so much responsibility, and nowhere have they been asked to provide directly such a large proportion of school resources.

The most controversial element of the Autonomous Schools reform in Nicaragua has been school charges or “cuotas,” monthly parental financial contributions. The charges were supposedly “voluntary” and parents were officially not obligated to pay them, though the social dynamic at the schools surrounding these charges was not so

clear cut.ⁱⁱ The charges were set by school-site councils, the governing body of the Autonomous school, who have a voting majority of parents and also include teachers and students. School councils in Autonomous schools had discretion in how 100 percent of the funds were located, while in non-autonomous schools 50 percent of the funds were returned to the government (Edge 2000). The guidelines for the charges were established by the central government, the Nicaraguan Ministry of Education, Culture and Sports (MECD). In 1999 the MECD mandated that school administrators not require students pay the contribution;ⁱⁱⁱ however, parents were often expected to pay cuotas in both secondary and primary schools. The MECD mandated that the monthly sum of the contribution was not to exceed 20 Cordobas (about US\$1.50 in 2000) and encouraged secondary schools to collect 10 Cordobas (Edge 2000).

Along with the charges, parents pay a variety of fees including testing fees and fees for the use of text books. These fees are more compulsory than the attendance charges (at least officially). Arcia (2000) finds that these non-voluntary fees make up between 49 to 58 percent of all fees for primary school students and between 59 and 78 percent for secondary school students. Usually a family's willingness to pay fees is linked closely to income (Glewwe and Patrinos 1998).

Locally generated revenue was often used to supplement teacher salaries providing performance incentives. Considering that elementary school teachers in Nicaragua earn less than US\$1000 per year, the contribution can make a significant difference in teacher salary. Also, Gershberg (1999a) states that the potential for increased salary through the charges was important for teachers in encouraging their acceptance of the Autonomous reform and that without them the reform might never have

taken hold as it has.^{iv} According to Fuller and Rivarola (1999) it was believed that autonomous schools would be better able “to draw resources from the local community via tuition charges and contributed labor.”^v

The school-level funds have also played a very large role in covering the costs of basic maintenance and utilities. However, given that charges have often not been truly voluntary and the difficulty poorer parents might encounter in paying them makes them problematic unless proper equity enhancing measures are implemented, especially since the impacts of poverty on access to school have been well documented (e.g., Psacharopoulos 1977). This study makes use of a rare database detailing monthly budget income and expenditures at the school level. We are able to compute the proportion of school budgets that derive from school and community contributions, as well as from the sales of goods and services and other commercial activity. Thus, we shed light on the manner in and extent to which parents—even poor parents—are willing to contribute privately to public school education. While analysts have paid some attention to the private costs of public education (e.g., Arcia, 2000), such investigations are done at the household rather than at the school level and do not usually capture information about the school-level income derived from commercial activities like selling goods and services. Whether one is an advocate or an opponent of such direct parental financing of schools, it is important to gain an understanding of the magnitude of such contributions. And on-the-ground, school-level knowledge is essential given the fact that many influential education policy organizations are strongly recommending school autonomy and the transfer of power and responsibility to parents in Central America.^{vi}

In addition, the Nicaragua school reform model is often touted as a success in development circles (King and Ozler (1998), and Preal (2001a)). Thus, it is also important to examine the level and nature of parental and other private financial support for public schools, while also considering the potential equity issues raised by such reforms.

This study analyzes Nicaraguan Autonomous school budget data from 1999 and 2000 to determine the portion that the parent contribution and other local sources of funds made up of the total school budget both for primary and secondary Autonomous schools throughout Nicaragua. It includes data from 720 Autonomous schools, including 582 primary schools and 138 secondary schools. The Nicaraguan Ministerio de Educacion provided the data, which is a collection of monthly revenue and expense accounts for the 720 schools. Such data are extremely rare for developing countries.^{vii} In order to compare and analyze these school budget data, monthly revenue information for each school was combined and used to produce revenue ratios for each school. We combined the available budget data for the schools to see what portion of each total annual school budget came from voluntary support and other school based charges. The three ratios we develop examine the sources of school revenue focusing on the percentage of school revenue that was generated at the local level in comparison to funding by the central government. We find that secondary schools collected more than primary schools, but both often collected a significant portion of their overall budgets from the cuotas. In fact, for more than 28 percent of the schools, cuotas made up over 5 percent of the overall budget. This could easily represent 100 percent of discretionary funds and even 5 percent of the budget we consider to be very significant. We also find that the extent of extreme poverty negatively

impacted local contributions, but that some poor communities still contributed significantly to their school budgets. These results have implications for both the equity and efficiency potential of such decentralization reform policies.

Attendance Charges as a Percentage of Central Transfers [Ratio 1]

First, we examine the percentage of “voluntary” support provided by parents monthly and at the time of annual registration by the students. The monthly contributions are called *Aporte Voluntario (AV)* or voluntary charges and the annual voluntary matriculation charge is called *Matricula*; these two sources represent what the public and education officials and analysts generally referred to as “school fees” associated with the Autonomous Schools. We call them “Attendance Charges.” We combine registration fees (*MA*) and monthly contributions (*AV*) to compare their size and significance relative to the central government transfer to each school, called *Transferencias Corrientes (TC)*, which makes up the lion’s share of what schools receive from the government to pay for teacher salaries and other costs.^{viii} The ratio is thus a measure of one source of local finance as a proportion of central financing. To compare them we grouped schools according to the proportion of their basic budget accounted for by these attendance charges as a percentage of the central transfer, and we examine various ranges (see Table I). An example of how to read Table I would be that 33 schools, or 4.54% of all schools collected between 3 and 3.99% of their budget from these attendance charges.^{ix} Table I also gives some basic information on our sample, which includes all autonomous schools at the time.^x Most schools collected at least some funds directly from parents in the form of monthly or matriculation attendance charges. While most schools collections were also

modest, they are clearly significant at a considerable number of schools. When primary and secondary schools are combined, attendance charges make up between 5 and 20 percent of the total budget in nearly a quarter of all the schools.^{xi}

(insert Table I here)

It is, however, more instructive to examine primary and secondary schools separately. As can be observed in columns 1 and 4 of Table II, for the majority of primary schools (52 percent) attendance charges were less than .5 percent of the size of the central transfer. However, 7.7 percent of the primary schools fell within in the range of 5-9.99 percent, and over 18 percent bring in attendance charges valued at 3 percent or more of the funds they receive from the central government.^{xii} The secondary schools collected a more significant contribution from attendance charges. Nearly 70 percent of the secondary schools collected attendance charges that augmented their school budget between 5 and 19.99 percent.

We also find a significant negative correlation between the proportion of school funds raised locally and poverty. To perform this analysis poverty data were collected for the municipalities of the 101 secondary schools included in the data set that are outside of Managua. Schools within Managua were not included because of the difficulty of determining the poverty level for the areas in which the schools are located in the city. The Nicaraguan Poverty Map was used to determine the degree of poverty for the 97 of the 101 secondary schools outside of Managua.^{xiii} We looked at poverty for each of these schools by examining the “extreme poverty gap”^{xiv} for each of the municipalities in which the schools were located. Not surprisingly, school located in areas of extreme poverty contributed less than schools located in districts with lower levels of poverty and

there is a significant and negative correlation between poverty and contribution of attendance charges (-0.227).^{xv}

On the one hand, this finding raises equity concerns. On the other hand, while not in “extreme poverty” by the Nicaraguan government’s standards, the schools raising significant funds are still in areas considered quite poor by international standards, suggesting that it is possible to raise funds locally even in poor areas.

Table II: All School-Related Charges as a Percentage of Central Transfers [Ratio 2]

Next, in columns 2 and 5 of Table II we combine all additional charges that the school collects from the students and that relate to educational or school-related activities with the Matricula and Aporte Voluntario from Ratio 1. These additional charges include everything from charges to students for taking tests and transferring diplomas to school identity cards and patches with the school logo.^{xvi} We think of these charges as those that a student could not really avoid in the course of getting an education; thus, the measure is intended to capture the overall proportion of the school budgets that comes from parents and students.^{xvii} In addition, these kinds of charges are far more common in many Latin American and developing countries (though attendance fees are found in Africa). In fact, they have become an almost accepted part of the school and parental culture.

(insert Table II here)

For this ratio there was less of a discrepancy between the primary and secondary schools. For 12.34 percent of the primary schools and 12.32 of the secondary schools, the combination of charges made up 5-9.99 percent of the central transfer. However, the secondary collected a greater proportion of revenue from charges, with nearly 60 percent

of the schools falling in the 15 to 34.99 percent range. It is clear that the overall contribution of parents and students to the school budgets is significant, and more so than when we considered attendance charges alone. Also, the correlation between the combined charges as a proportion of the central transfer and poverty is once again significant.^{xviii}

As mentioned above, these kinds of school charges are more common practice in many countries—as well as far less politically controversial and far less unpopular with parents than collections associated with attendance. As Arcia (2000) explains about Nicaragua:

The evidence from the review of the sector's performance clearly indicates a strong negative link between poverty, enrollment and performance. Although public schooling is free, parents are asked to contribute with some fees—which are supposed to be optional—and to cover the cost of registration, uniforms, school snacks, and transportation. Overall, the average annual expenditure (excluding food at school) per primary student per family was C\$438 (approx. US\$41), varying from C\$240 (approx. US\$23) per student per year in rural areas, to C\$600 (approx. US\$57) in urban areas. Considering that in 1998 the Government spent approximately US\$41 per year per primary school student, and US\$32 per year per secondary school student, the overall average family expenditures represent about one-half of the total cost of sending a child to a public school. The biggest educational expenditure for families are (*sic*) school uniforms, which account for 40% of the annual per student expenditures. Nearly 80% of per student expenditures are for bus transportation, uniforms, and school supplies.

Thus, it is clear that the private costs of education are high, but that the school-level proportion of those costs is relatively small. For instance, while schools may sell some

supplies and uniforms, the proportion of those is generally small and certainly the schools are not generally selling the transportation. Regarding fees, Arcia (2000) states that:

...among the poor, fees represent almost 10% of total expenditures for primary students. For secondary students, fees represent 20% of total expenditures. Although both are significant expenditures, their magnitude is not proportional to the level of dissatisfaction expressed by parents.

Our analysis captures only those portions of the parental expenses captured by the school. But, it is important to be able to distinguish between private costs that accrue to the school and those that do not. At least the former augment school budgets, can be invested directly in to the students' education, and also can play a role in improving the incentive environment for accountability. It is also important to disentangle the sources of direct funding for schools since doing so reveals that they have had to become quite entrepreneurial. This was a stated goal of the reform in Nicaragua, yet it also makes the school system vulnerable to accusations of "commercialization" and "turning schools into businesses." Whether one is for or against such activities, it is clear that in a political context, teachers unions and other powerful stakeholders can use such accusations to their advantage, sometimes to the detriment of the goal of the reform. Our next section explores this school level dynamic and budgetary environment by considering all the commercial activities in which schools are engaged to augment their budgets.

All School-Related Charges and other Commercial Activities as a Percentage of Central Transfers [Ratio 3]

Ratio 3 combines all of the school related charges from Ratios 1 and 2 with the money generated from school commercial activity and donations in order to capture fully

all school revenue generated locally. The commercial revenue is generated through micro level activities such as the sale of food and beverages. In total, there are 12 commercial related variables that are included in the ratio.^{xix} Unfortunately, we were unable to attain sufficient school level information on expenses and are therefore not sure what schools spent in order to attain the commercial goods. For example, we have data on the proceeds from the sale of soda, but not on the cost of purchasing the soda. Thus, this ratio likely overstates the true extent of commercial activity and must be viewed as suggestive of a rough approximation. We find that many primary schools are taking advantage of these types of commercial activities (Table II, columns 3 and 6). 31.44 percent of the primary schools make between 5 and 15 percent of their total revenue from the collection of the school charges and commercial activity and donations. The number of total schools in the 5 and 15 percent range increases 15.32 percent when the commercial activity and donations are included in the ratio.^{xx} Over 40 percent of primary schools and nearly all secondary schools derive more than 5 percent of their budget from parental and student payments and other commercial activities. In fact nearly 60 percent of secondary schools derive more than 20 percent of their budget from such activities. It is hard to escape the fact that schools rely heavily on funds from students, parents and their communities. Indeed schools must be quite entrepreneurial, akin to being like little businesses, to survive.^{xxi}

Average Cordobas per Student from School Charges and Commercial Activity

How much do these charges and other payments amount to per pupil? We are able to provide very rough estimates for the secondary schools.^{xxii} To calculate the average

Cordobas per Student, we calculated the sums of the variables used in the ratios above and divided by the number students. Therefore, for variables used in Ratio 1, we combined the two variables that make up the attendance charges for each school, and divided by the number of students attending that school. The analysis was only performed on secondary school.^{xxiii} We did the same for all school related charges (the variables included in Ratio 2) and all school related charges and other commercial activity (the variables included in Ratio 3).

The revenue generated per student is significant. The average secondary school generated 251 Cordobas (approximately US \$20 dollars in 2000) a month per student when all charges and the commercial activity are included (Ratio 3). One also notes a large variation in the amount collected per student across schools. The secondary schools for which attendance charges make up 10 percent or less of the total budget (Ratio 1), collect an average of 32 Cordobas (US \$2.50) per student per month. About 35 percent of schools fall into this category. However, for the other 65 percent, secondary schools collect an average of 203 Cordobas (US \$16) a month per student. There is a similar, although not quite as dramatic variation when the other charges and commercial activity are included. Schools raising 10 percent or less of the total budget from all school related charges (Ratio 2) generated 73 Cordobas (US\$6) a month per student. Schools collecting between 10 and 35 percent of the budget from all charges, raised an average of 195 Cordobas (US \$15). School collecting less than 10 percent from fees and commercial activity (Ratio 3), raised 80 Cordobas (US\$6). School collecting between 10 and 35 percent raised 247 Cordobas (US \$20).^{xxiv} It is important to ask how these funds might be

distributed more equitably, as well as to recognize the level of private costs of public education.

Conclusion

School based charges were a significant component of many Nicaraguan Autonomous schools, especially for secondary schools. They helped schools generate and use money locally and provided a performance incentive to teachers, which was especially important considering the extremely low teacher salaries in Nicaragua. Thus, the local contributions are not inherently bad. Unlike other private costs of education (such as transportation), the funds can be directly invested in educational activities and used to create accountability incentives. As, for instance, Gershberg (1999a,b) has argued, these charges may be far more efficient (particularly for parents) than raising the same funds through the country's weak tax system, especially if they have a positive impact on school accountability—as the PREAL (2001a) report on education in Central America and others have argued it has (e.g., Gershberg, 1999a).. However, there are obvious equity issues in considering the charges. The fact that poorer communities contributed significantly less to the school based charges is concerning. These are the communities where extra resources are needed the most; the level of costs must be both recognized and incorporated into any analyses of ability and willingness to pay. It is important to ask if there is a way for the MECD to distribute money to the municipalities to the poorer communities that are unable to collect school based charges so that children in these communities can receive the necessary resources? One possibility would be for the central government to match local contributions and have the matching rate rise with

the poverty of the school community. This would maintain all the accountability and other positive incentives inherent in the local contributions but help improve equity and have a compensatory component.

Also of concern is the ambiguous nature of the “voluntary charges.” Are the charges keeping children from enrolling or forcing them to drop out? And if so, is there a way for the charges to be truly voluntary and still be a substantial and helpful contribution to school budgets. With the implementation of the Ley de Participacion Educativa this issue may become a moot point in Nicaragua if in fact the local school councils are informed about the law and abide by it and stop charging parents the cuota. However, the law may lead to the other extreme, forcing schools to forgo these significant sources of funds—which will not likely be replaced by tax money, thus lowering the overall amount of resources invested in education. It will also be interesting to see how teachers react to having the performance incentive removed and no increase in a salary that is decidedly insufficient. Overall, we believe it is important for the central government and Ministry of Education to find a way to maintain some form of direct parental contributions to school budgets, but to do so in an equity-enhancing and compensatory manner. It seems reasonable to assert that this lesson derived from the Nicaraguan experience is applicable to many other developing countries undergoing similar reforms.

Table I: Attendance charges¹ as a Proportion of Basic School Budget, Primary and Secondary Schools, Nicaragua 1998-1999

Aportes Voluntarios and Matriculas as a Percentage of central transfers (TC) for all autonomous schools: $(AV+MA)/(AV + MA + TC)$

Proportion of Budget	Number of Schools	Percentage Total Schools
0.0 to 0.99 percent	311	42.78
1 to 1.99 percent	106	14.58
2 to 2.99 percent	58	7.98
3 to 3.99 percent	33	4.54
4 to 4.99 percent	21	2.89
5 to 9.99 percent	80	11.00
10 to 14.99 percent	59	8.12
15 to 19.99 percent	32	4.40
20 to 24.99 percent	13	1.79
25 to 29.99 percent	8	1.10
More than 30 percent	6	0.83
Total Number of Schools	727	100
Maximum percentage: 35 %		

Type of School

Type	Number of Schools	Percentage of Total Schools
Primary	582	80
Secondary	138	19
Primary/Secondary	1	0
Not Reported	6	1
Total	727	100

¹ Schools charge or encourage contributions for a wide range of activities and services, such as computer use, food, school supplies, uniforms, and even library use. Here we look at only “aportes voluntarios,” which are voluntary monthly contributions, and “matriculas,” which are funds solicited upon enrollment.

Table II: Local School Revenues as a Percent of School Budgets
 Three Different Measures of Local Revenue:

R(1): Attendance charges as a Percentage of Central Transfer							
R(2): Combination of All School Related Charges and Charges as a Percentage of Central Transfer							
R(3): Combination of All School Related Charges and Charges Along with All School Commercial Activity as a Percentage of Central Transfer							
	1	2	3	4	5	6	
Range of % of Budget Derived from Local Revenue	% Primary R(1)	% Primary R(2)	% Primary R(3)	% Secondary R(1)	% Secondary R(2)	% Secondary R(3)	
0-.49%	52.06	32.95	24.05	1.45	0.72	0	
.5-.99%	9.62	13.8	6.87	1.45	0.72	0	
1-1.99%	14.09	15.85	11	4.35	2.17	1.45	
2-2.99%	6.01	8.72	10.31	1.45	0.72	2.17	
3-3.99%	4.12	6.54	6.87	2.17	0.72	0	
4-4.99%	3.26	4.81	4.67	2.9	3.62	0.72	
5-9.99%	7.73	12.34	21.82	20.29	12.32	10.14	
10-14.99%	2.41	3.79	9.62	28.26	14.5	11.59	
15-19.99%	0.35	0.5	2.75	21.01	25.36	15.94	
20-24.99%	0	0.5	1.55	7.97	10.87	19.57	
25-29.99%	0	0	0.17	5.8	13.77	10.14	
30-34.99%	0.35	0.17	0.17	2.9	9.42	13.04	
35-39.99%	0	0	0	0	3.63	7.97	
40-44.99%	0	0.03	0.34	0	1.46	5.07	
45-50%	0	0	0	0	0	2.17	
Total	100	100	100	100	100	100	

Appendix: Variable Lists and Components of Local Revenue Source Ratios

Basic Charges as a Percentage of Central Transfer [Ratio 1]

Monthly budget data were combined for each school for:

TC: The central government's transfer (transferencia corriente)

MA: The annual matriculation fee charged to students (Matricula)

AV: Parents monthly contribution to the school (aportes voluntaries)

Using these sums the following ration was computed for each school:

$$(AV+MA)/AV+MA+TC)$$

All School-Related Charges as a Percentage of Central Transfers [Ratio 2]

Along with MA and AV this ratio includes several other sources of income derived from parents. The B variables are basic fees charged to students for filing and record keeping. The C variables are fees charged to students for school supplies and testing. The D variables are fees that relate to school uniforms and the E variable is the fee for computer classes/ All, along with MA and AV, are fees considered unavoidable for students in the course of getting an education. They include:

B1: Certificado: Fee charged to issue the student report card

B2: Constancia: Fee charged for record keeping.

B3: Tramite de diploma: Fee charged for transferring student diploma

B4: Tarjeta control de aportes: Charge for cards used to monitor monthly contribution

C1: Exámenes: Fee charged to secondary school students for taking tests

C2: Alquiler de textos: Annual fee charged for maintaining school texts

C3: Boletines: Fee charged for student reports

C4: Carnet: Fee charged for student identification cards

C5: Tarjetas de disciplina: Fee charged for student discipline cards

C6: Guia de estudio: Fee charged for study guides

C7: Reparacion de pupitre: Fee charged to students every semester for the maintenance of desks and chairs

D1: Escarapelas: Fee charged for the acquisition of school insignia for uniforms

D2: Camisetas: Fee charged for school tee shirts

E1: Computacion: Fee charged for computer classes

Using these sums the following ratio was computed for each school:

$$(AV+MA+B+C+D+E)/ (AV+MA+ B+C+D+E+TC)$$

All School-Related Charges and Other Commercial Activities as a Percentage of Central Transfers [Ratio 3]

This ratio combines all of the previous school related fees with money generated from commercial activity and donations. The F variables are variables not covered in the other groups. The G variables represent income generated in the school from the sale of food and other items. WHAT'S THE DISTINCTION BETWEEN H AND I? ALSO, IT SEEMS LIKE PROMOCION SHOULD BE INCLUDED IN THE I VARIABLES, RIGHT?:

F1: Otros (ingresos propios): Money generated in the school through other types of commercial activity

F2: Otros (ingresos financieros): Money generated through interest accumulated on school revenue

G1: Bar: Money generated from the sale of beverages (non-alcoholic) within the school

G2: Libreria: Money generated from the sale of books within the school

G3: Bus: Money the school receives for transporting students

G4: Bar2: Money generated from the sale of food within the school

G5: Fiestas: Money generated from fund raising parties in the school

G6: Paseos: Money generated from school excursions

G7: Kermess: Money generated from school bake sales

G8: Fotocopias: Money generated from charging students and teachers for the photocopies

G9: Festividades varias: Money donated by students and families for school holiday celebrations

H1: Fotografia: Money generated from school photographs

H2: Promocion: Money donated to schools by student godparents on graduation

H3: Broches: Money generated from the sale of school pins

H4: Corsach: Money generated from the sale of corsage for graduation

I1: Ingresos por cooperacion: Donations for investment and operating expenses

I2: Donaciones para gastos operativas: Donations for teacher bonus salaries and other expenses

Using these sums the following ratio was computed

for each school:

$$(AV+MA+B+C+D+E+F+G+H+I)/ (AV+MA+ B+C+D+E+ F+G+H+I+TC)$$

Cordobas per Alumno

This analysis determined the impact of parental contribution on the individual student. For each of the ratios the sums of parental voluntary support **R(1)**, school charges **R(2)**, and money generated within the school **R(3)**, was divided by the number of students matriculated in the school. To determine the number of students the mode of the variable “initial matriculation” was selected. This variable represents the number of students that matriculate in the school at the beginning of each school year. However, in some cases, schools reported different numbers of matriculated students within the same school year. To deal with this variation within schools, the mode of initial matriculation was selected. In cases where there was no clear mode, the highest matriculation number was selected. If we could not confidently impute the average monthly attendance, we dropped the observation.

N= 112 (71 Secondary schools were dropped from the analysis due to missing or unreliable data)

The sums from the previous ratios were calculated and divided by the number of students reported for each school:

R(1): $(AV+MA)/\text{Alumnos}$

R(2): $(AV+MA+B+C+D+E)/\text{Alumnos}$

R(3): $(AV+MA+B+C+D+E+F+G+H+I)/\text{Alumnos}$

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ⁱ See for example World Bank (1998), IDB (1994), and PREAL (2001a) and (2001b).

ⁱⁱ For instance, Gershberg (1999b) has documented various pressures put on parents and students to pay.

ⁱⁱⁱ In February 2003 legislation was passed that outlaws school charges of any kind in Nicaragua through the Ley de Participacion Educativa.

^{iv} In addition, Fox and Riew (1984) argue that families with children in school should pay partial tuition as long as needs based adjustments are made. Gertler and Glewwe (1990) argue that even poor families may be willing to pay significant fees under certain conditions.

^v See Behrman and King for a discussion of how decentralization and parental investments may improve efficiency and the tradeoffs of educational decentralization policies.

^{vi} See in particular PREAL (2001a)

^{vii} The data were provided by the Ministry of Education and are used by Ministry staff to create school budget reports. Using administrative data for analytic purposes is always problematic, and the conversion in this case was difficult and time consuming. For instance, some of the schools report just a few months of data while others have more than 30 months. We have had to make guesses in some cases as to the most likely interpretation of the data. Where we have done so, we note in the text and where necessary, we have eliminated observations. For instance, in some cases it appears likely that a year's worth of data were merged into one or a few months, so we used these figures as annual rather than monthly data. The results in this study must thus be interpreted in this light; however, we do believe we portray an accurate general picture of the school charges and the roles they play in school budgets. That is, the general nature of our findings would not be altered with improved data.

^{viii} Therefore the ratio is: $(AV+MA)/AV+MA+TC$.

^{ix} The same is true for reading Table II.

^x Not all schools were autonomous. See: Gershberg, A (1999)a for details on the process rules by which so called "traditional schools" became autonomous. According to Arcia and Belli (1998), in 1998, 81 percent of secondary students in Nicaragua attended autonomous schools and 47 percent of primary students.

^{xi} $11 + 8.12 + 4.4 = 23.52$.

^{xii} Note also that 28% bring in between 1 and 5 percent of their budget from these attendance charges. Even this seemingly small amount is significant as a proportion of discretionary funds and the school council's ability to perform basic maintenance and compensate selected teachers with bonuses and other incentives.

^{xiii} Poverty Gap statistics are taken from: Gobierno de Nicaragua (2001). Mapa de Pobreza Extrema de Nicaragua- Censo 1995 – EMNV 1998, Instituto Nacional de Estadísticas y Censos.

^{xiv} The United Nations Statistics Division defines the poverty gap index as, "The mean distance below the

poverty line as a proportion of the poverty line where the mean is taken over the whole population, counting the non-poor as having zero poverty gap. That is the mean shortfall from the poverty line (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line.”

^{xv} This correlation (Pearson Correlation) is significant at the 95 percent confidence level.

^{xvi} Interestingly, one of the variables included in our analysis was a fee for a card used to monitor parent’s monthly contribution. It is odd that schools would have a means of monitoring a contribution that is voluntary. According to the MECD, these cards are no longer used.

^{xvii} In total, there were 16 different types of school charges, which are detailed in the Appendix.

^{xviii} $r=-.27$, Significant at the 95 percent confidence level.

^{xix} Also in the ratio, are three variables that relate to donations from both local business and local and international NGOs. These donations are both monetary and gifts in kind. See the Appendix for the complete list of commercial activities.

^{xx} The increase is not as pronounced for secondary schools.

^{xxi} Once again the correlation with poverty ($r=.22$) is significant (at the 95 percent confidence level), but the magnitude is smaller than for Ratios 1 and 2. This implies that such commercial activity is more common at all schools, even at extremely poor ones.

^{xxii} Calculations for the primary schools are not included due to the irregularity of the data from primary schools. There were 206 primary schools that did not report their monthly matriculation in the data set.

^{xxiii} Primary school data for the number of students attending schools varied greatly from month to month and in many cases was missing. Unfortunately, even though data for the secondary schools regarding monthly matriculation was much more consistent than for primary schools, the number of students reported month-to-month in some of the secondary schools varied greatly. To deal with the variation, the matriculation number that was repeated the most was selected in nearly all of the cases. In cases where there was no clear mode, the highest matriculation number was selected. If we could not confidently impute the average monthly attendance, we dropped the observation. Of the 138 secondary schools in our database, we were able to include 112, or 81 percent of this portion in the analysis

^{xxiv} 25 percent of secondary schools raised less than 10 percent of their total revenue from all school related charges and 17 percent raised less than 10 percent from all school related and commercial activity.