

The Effect of Poverty, Gender Exclusion, and Child Labor on Out-of-School Rates for Female Children

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Abstract

In this paper, we analyze the effect of poverty, social exclusion, and child labor on out-of-school rates for female children. Our empirical study is based on a dynamic panel model for a sample of 216 countries over the period 1970-2010. Results based on the Generalized Method of Moments (GMM) of Arellano and Bond (1991) and the tests of causality and zero autocorrelation to the panel data show a negative and significant relation between Contributing Family Workers (female) and Number of Primary School-Age Children Out of School (female) in Europe and Central Asia region. However, we cannot find empirical evidence between Primary School-Age Children Out of School rates (female) and the variables used to analyze the effect of poverty and social exclusion (poverty headcount ratio at national poverty line and total vulnerable employment). Moreover, the article identifies effects of other variables like proportion of seats held by women in national parliaments. In addition, this article examines geographic regions separately, with the anticipation that differentials in livelihood strategies and opportunities could be reflected in female child schooling decisions.

Keywords: child labor, poverty, social exclusion, out-of-school rates

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Education is a human right that ought to be accessible to everyone, without any discrimination. According to the recent *EFA Global Monitoring Report* (2012), all children must be able to go to school, and thereby benefit from the same opportunities to build a future. Education also must be free so that children from disadvantaged environments are able to enjoy this right¹. However, according to Lewis and Lockheed (2006), nearly three-quarters of the 60 million girls still not in school belong to ethnic, religious, linguistic, racial, or other minorities. Before this disheartening fact became known, many authors (e.g., Herz & Sperling, 2004; Lewis & Lockheed, 2006; Tembon, 2008) tried to analyze female child education.

Herz and Sperling (2004) consider that policymakers will need to make special efforts to address the economic, social, and cultural barriers that keep even larger proportions of girls in poor countries out of school. In a similar way, Lewis and Lockheed (2006) point out that enrolling and retaining excluded children, in particular girls, in school requires new strategies, and reaching them can be costly since it requires new methods tailored to each group.

Taking into account these recommendations, Tembon and Fort (2008) suggest several strategic directions for advancing gender equality in education, such as improving the quality of not only primary but also secondary education and focusing on the most vulnerable groups. On the other

hand, it is important to improve the relationship between public sector, private sector, and non-profit organizations. All this implies improving studies regarding gender, poverty, and the development and presentation of policymakers' information.²

Taking into account the above considerations, we propose an empirical study based on some of the patterns of inequalities in educational attainment proposed by Filmer (2006). These include significant differences between and within countries and inequality associated with economic status, gender, child labor, etc.³

To conduct the empirical analysis, we employ a dynamic panel model for a sample of 213 countries over the period 2003-2007. With this objective in mind, the work is organized as follows: In the next section, we present a brief empirical background about the effect of poverty, social exclusion, and child labor on out-of-school female children rates. In section 3, we develop the methodology used for the empirical analysis. In section 4, we present the main empirical results obtained. In section 5, we present a summary of the main conclusions. Finally, Section 6 ends with some policy implications.

Background: Out-of-School Female Children Rates Factors

According to Yu (2007), each country has its own educational policies and goals/functions and these system-wide differences in educational goals emphasize that the criteria for judging/determining school effectiveness should take into account the contextual factors within which each school/nation operates.

Taking into account the above consideration, the main object of this section is to find some empirical support that allows a satisfactory understanding of the role that poverty, social exclusion, and child labor could play in the out-of-school female children rates. With this idea in mind, we propose a systematic revision of the most relevant empirical studies (according to our objectives) conducted at the country level.

The Effect of Poverty

In order to analyze the effect of poverty in education, we selected some studies country by country in the developing world, focusing on the works published by several important authors, and considered their main conclusions about this issue.

To begin with, we can see that family structure and a child's relationship to the head of the household are found to be significant influences and important factors on investments in children's education, according to Shapiro and Tambashe (2001), along with the place of residence and the economic status of the household. Jonathan Morduch (1999) believes that poverty can be related to vulnerability, as numerous poor households are exposed to many risks, including economic ones, that carry negative implications for the oncoming generation, reducing rates of children in school.

In regard to family structure, by the examination of the possibility that parents obtain informal income insurance by letting their children work, Gubert and Robilliard (2006) conclude that transitory income affects children's school dropout behaviors significantly but not their school entrance. The probability of school entrance nevertheless appears to be sensitive to shocks in the demographic structure of the household, since it is negatively correlated with the death or moving out of elderly household members. Monetary and non-monetary costs of education are a great burden on the poorest households and act as a significant barrier to education. The indirect costs are also considerable, with seasonal variations relating to the demand for labor, according to Boyle, Brock, Mace, and Sibbons (2002). As a result, this seasonal cycle of opportunity costs impacts attendance patterns, which, in turn, influence permanent premature removal from school.

As we find that increased economic well-being translates into greater investments in children's education for both females and males, Shapiro and Tambashe (2001) determine that improved economic status does not necessarily result in reduced gender differences in school outcomes. As well, Brown and Park (2002) use direct measures of credit limits and women's empowerment, finding evidence of gender bias in which academically weak girls are more likely to drop out in primary school while most boys continue on to junior secondary school.

Analyzing the areas of location of the household, Mugisha (2006) explores patterns of school enrollment comparing urban slum, urban non-slum, and rural children. The results suggest that

school enrollment is higher in urban non-slum than in urban slum, and is higher in slums than in rural areas at younger ages. Factors contributing to these results point to the poor quality of primary schools in slums, limited access to secondary schools for slum children, increased vulnerability to coercion into sexual activity and other ills that hinder school participation, disabling environment at home, and increased child labor.

Another subject, studied by Deon Filmer (2005), is the relationship between whether a young person has a disability, the poverty status of their household, and their school participation. According to Filmer, youth with disabilities are almost always substantially less likely to start school, and, in some countries, have lower transition rates resulting in lower schooling attainment. The order of magnitude of the school participation disability deficit is often larger than those associated with the other characteristics we have read before, such as gender, area of residence, or economic status differentials.

A very important matter we have to consider as we deal with the effect of poverty on households and children's education are the possible benefits of conditional cash transfers (CCT). As the authors agree that conditional transfers can provide a high and positive impact in increasing school attendance, acting as safety nets for the schooling of the poor, certain kind of conditions (for example, requiring enrolling children into public schools) and right strategies are necessary in order to make these transfers reach their real purpose.

De Janvry, Finan, Sadoulet, and Vakis (2006) found that conditional transfers helped protect enrollment, but did not prevent parents from increasing child work in response to shocks. In this sense, to reduce the poverty headcount ratio by increasing incomes among poor households, cash transfers would have to be sizeable. Even then, an increase in income, by itself, would not suffice to significantly increase school attendance. Higher impacts at lower cost could be achieved by making transfers targeted and conditional (Kakwani, Soares, & Son, 2006). Extending this conclusion, Son and Florentino (2008) found that the targeted CCT program would lead to greater school attendance and poverty reduction. Designing a program with a weak or non-existent targeting strategy not only reduces the transfer cost per beneficiary but also leads to leakages to the non-poor, driving down its

impact and effectiveness. Using a similar simulation methodology, Kumara and Pfau (2011) find that cash transfer programs targeting poor children would be the most cost-effective way to reduce child poverty and encourage school attendance. Their findings suggest that even a limited program budget can provide significant impacts. On the other hand, Bourguignon, Ferreira, and Leite (2003) evaluated the “Bolsa Escola” program in Brazil, with results that suggest approximately 60% of poor children from 10 to 15 years old not in school enroll in response to the program. They conclude that the targeting of this CCT is accurate, but that poverty reduction, while effective, does not cause a large positive effect. Therefore, governments must transfer cash in an intelligent and efficient way, substantially increasing the amounts if they hope to cause bigger effects in reducing poverty.

Gender Exclusion

Reviewing some studies country by country in the developing world, conducted by some significant authors, we continue to analyze the effect of gender exclusion in education. One of the main factors found to be a cause for the gender gap in child education is cultural, taking an elevated importance in the household decisions.

Related to this, Colclough, Rose, and Tembon (2000) argue that poverty is associated with an under-enrollment of school-age children, but that the gendered outcomes of such under-enrollment are the product of cultural practice, rather than of poverty per se. Their study shows the variety and extent of adverse cultural practice, which impede the attendance and performance of girls at school, relative to boys. Taking into account these findings, the authors warn that gender inequalities in schooling outcomes, measured in both qualitative and quantitative terms, will not necessarily be reduced as incomes rise. Defining the cultural aspect in rural areas, the presence of a public school for girls in the village makes an enormous difference for girls in primary enrollment, given parents’ reluctance for girls to travel far from home. Lloyd, Mete, and Sathar (2005) find that girls’ enrollment in public primary school is particularly responsive to improvements in some aspects of school quality, in particular whether or not the teacher resides in the village. This would suggest that school quality is important not only for retention but also for enrollment. As a proof, Sawada

and Lokshin (2009) discovered serious supply-side constraints that might arise from a village-level lack of demand for primary schools for girls.

It is also important to take into account the education level of the head of the household, as Rose and Al-Samarrai (2001) did by showing that the probability of attending and completing school was lower for girls than for boys in economically constrained households with illiterate parents but was equal for girls and boys in better-endowed households.

Furthermore, the economic changes also affect the rates of schooling in rural areas. Kajisa and Palanichamy (2010) found that the initial high correlation between children's attainment of basic schooling and the household's assets for farming disappeared during the mid-1980s. However, even after that time, the attainment of advanced education is still affected by rainfall and thus by farm income, indicating the lack of insurance markets and the segregation of poor households under agriculturally unfavorable conditions from advanced education. Meanwhile, segregation based on gender and adult members' education has been disappearing.

Analyzing the gender gap in child education, some authors locate the larger difference between boys' and girls' attendance in the primary school-age group. For example, Sawada and Lokshin (2009) revealed a high education retention rate and observed that school progression rates between male and female students after secondary school are comparable. In particular, they find gender-specific and schooling-stage-specific birth-order effects on education. Their overall findings are consistent with the implications of optimal schooling behavior under binding credit constraints and the self-selection of education-friendly households. On the other hand, Aslam and Kingdon (2008) investigated whether the intra-household allocation of educational expenditure favors males over females, finding that in middle and secondary school ages, evidence points to significant pro-male biases in both the enrollment decision as well as the decision of how much to spend conditional on enrollment. However, in the primary school, only the former channel of bias applies. Their results suggest that the observed strong gender difference in education expenditure is within rather than across household phenomena.

Child Labor

Finally, focusing on the works of some authors, country by country in the developing world, we can analyze the effect of child labor in education, taking it into account as a clearly huge obstacle for children's education. As we have previously read in some conclusions, children from poor households and households with parents with a low level of education are less likely to attend school and, by consequence, are more likely to be engaged in child labor, giving strength to the hypothesis that poverty is the root cause of child labor, according to Friedrich Huebler (2008). As well, Jensen and Nielson (1997) investigate what affects school attendance and child labor, and find with the empirical analysis that both economic and sociological variables are important determinants for the choice between school attendance and child labor. In particular, Jensen and Nielson find some support for the hypothesis that poverty forces households to keep their children away from school.

The labor force participation is non-trivial among those below the legal working age or supposed to be in school and these working children contribute significantly to total household income, according to Psacharopoulos (1997). The fact that a child is working reduces his or her education attainment by about two years of schooling relative to the control group of non-working children. Also, Psacharopoulos found that grade repetition is closely associated with child labor.

Nevertheless, poverty does not appear alone among the causes that enhance child labor. The empirical analysis by Canagarajah and Coulombe (1998), analyzing the determinants of child labor in conjunction with decision to school, shows, although not very convincingly, proof that poverty is the main culprit of child labor; however, it is correlated significantly with attendance and enrollment in school. They show a significant negative relationship between going to school and working. According to the authors, the high cost of schooling and the low quality and weak relevance of education has also pushed many children into work. On the other hand, family characteristics have a big role to play in the decision about children going to school or work, and the parents' education has a significant negative effect on child labor and the effect is stronger for girls than boys. In addition, Moyi (2011) finds that socioeconomic status and structure of the household have a strong effect on child labor.

In regard to the household structure, Patrinos and Psacharopoulos (1997) analyzed the effects of being indigenous, number of siblings, sibling activities, and sibling age structure on child schooling progress and child non-school activity. Their analysis shows that family size is important. However, the analysis also demonstrates the importance of taking into consideration the siblings' activities. The age structure of siblings is important, but in conjunction with their activities. According to these authors, having a greater number of younger siblings implies less schooling, more age-grade distortion in the classroom, and more child labor.

Paying attention to the gender differences inside child work, Canagarajah and Coulombe (1998) show some clear gender-based distinctions in the type of tasks performed by a girl and boy worker (girls do more household chores, while boys are in labor force). As work, broadly defined, substantially reduces schooling for both boys and girls, Assaad, Levison, and Zibani (2007) present evidence that lower rates of school attendance for girls are caused by a substantial burden of household work. While market work is a serious impediment to schooling for boys, a much larger proportion of girls than boys engage in substantial hours of work, when work is defined to include both labor force and domestic work.

By studying rural areas in particular and comparing them with urban areas, Ersado (2005) finds that while strong evidence shows that poverty drives child labor in rural areas, there is a general lack of support for the poverty hypothesis in urban areas. This suggests that policies such as a ban on child labor in rural areas could have an adverse effect, as child labor decisions are more likely a response to poverty and subsistence requirements. Similarly improving access to credit has greater potential for alleviating child labor and enhancing school enrollment in rural than urban areas. On the other hand, the availability of alternative child care options appears to considerably decrease child labor and create conditions for higher school attendance rates in urban than in rural areas. Finally, the evidence indicates that efforts to bolster adult education levels and wages will help curb the prevalence and intensity of child labor and improve the likelihood that children stay in school.

Concerning the actions taken to reduce child labor and increasing children's schooling, Ravallion and Wodon (1999) studied the effects on children's labor force participation and school enrollments of

the pure school-price change induced by a targeted enrollment subsidy. In their theoretical model, these authors predict that the subsidy increases schooling, but its effect on child labor is ambiguous. Their empirical findings indicate that the subsidy increased schooling by far more than it reduced child labor⁴. Moreover, Hazarika and Bedi (2002) draw a distinction between child labor within the household (intra-household) and child work in the labor market (extra-household), and examine the separate effects of schooling costs on the two types of child labor. The authors found that extra-household child labor and schooling costs are positively related, while intra-household child labor is insensitive to changes in schooling costs. Lastly, their results suggested that reduction in schooling costs will have limited success in the abatement of child labor.

It is also important to indicate that a large proportion of working children attend school. According to Moyi (2011), if the consequence of working is to hinder educational attainment, then policymakers need to focus on the dimension of education inequality between students who combine work and school and those who do not.

Methodology

In order to solve some methodological problems related with the evaluation of the models by traditional methods⁵, we propose one method (based on Arellano and Bond, 1991) that consists in obtaining consistent estimators.

As a result of the above consideration, we propose an empirical study based on a dynamic panel model for a sample of 216 countries over the period 1970-2010. With this objective in mind, in the next sub-sections we develop the methodology used for the empirical analysis and present the main empirical results obtained.

Econometric Model

Arellano and Bond (1991) proposed an extension of GMM introduced initially by Hansen (1982), to the case of panel data for a simple model AR₍₁₎:

$$y_{it} = \alpha \cdot y_{it-1} + \mu_i + v_{it} \quad \text{where } |\gamma| < 0 \quad (1)$$

As we noted, our sample has 216 countries over the period 1970-2010. For this reason, we consider the case where temporal dimension is small or medium ($T = 41$), while individual dimension ($N = 216$) is important. Also, we consider that individual effects are stationary and we assume traditional hypotheses of residues. Difference models (1) can be written as below:

$$\Delta y_{it} = \alpha \cdot \Delta y_{it-1} + u_{it} \quad \text{where } |\alpha| < 1 \quad (2)$$

Where $u_{it} = v_{it} - v_{it-1}$. The gait of Arellano and Bond, in presence of the exogenous variables, consists in estimating the model in difference⁶:

$$\Delta y_{it} = \sum_{k=1}^p \alpha_k \Delta y_{i(t-k)} + \beta'(L)X_{it} + \Delta v_{it} \quad (3)$$

The preceding dynamic model can be rewritten for each individual in the following form:

$$y_i = W_i \cdot \delta + \tau_i \cdot \mu_i + V_i \quad (4)$$

Where τ is a vector of parameter and W_i is a matrix that contains the retarded dependent variable and explanatory variables⁷.

In order to have previous value GMM, it is necessary to pass by a first stage that consists of making wished transformation (first difference or orthogonal deviation), to find and to use instruments matrix and to achieve a first evaluation, named “evaluation of first stage.” This stage corresponds to an evaluation that allows for providing estimated residues after transformation. The objective of transformation is, as at Anderson and Hsiao (1982), to eliminate individual heterogeneity of the model⁸.

Finally, Arellano and Bond (1991) propose a test verifying the absence of autocorrelation of first and second order⁹.

We specify a dynamic model characterized by presence of one endogenous variable delayed among explanatory variables. Our specified model is a dynamic panel model given by:

$$y_{it} = \alpha \cdot y_{it-1} + \beta' \cdot X_{it} + \mu_i + v_{it} \quad (5)$$

Where y_{it} is the endogenous variable, y_{it-1} symbolizes endogenous variable appears in the regression as being a retarded explanatory variable. X represents the vector of exogenous variables, (α, β)

designate parameters to estimate, and μ_i is the specific effect of country (i). This specific effect can be a stationary or uncertain effect, and constitute individual heterogeneity as: $\mu_i \text{ i.i.d } \sim N[(0,1)]$; v_{it} is stochastic term as: $v_{it} \sim \text{i.i.d } N[(0,1)]$. The bias is positive and increases with the variance of the specific effect. Indeed, y_{it} is function of v_{it} and y_{it-1} is also. y_{it-1} is an explanatory variable correlated with stochastic term. It introduces a bias in the value of ordinary least squares. Even as putting hypothesis that stochastic terms are not correlated, this value is non-convergent¹⁰.

In our model, y_{it} is the rate of primary school-age female Children Out of School ($COSf_{it}$) in period (t) and country (i). This rate is explained by: (i) $COSf_{it}$ of the period ($t-1$); (ii) Family Workers Contributing¹¹, female ($FWCF_{it}$) (% of females employed); (iii) Total Vulnerable Employment (TVE_{it}) (% of total employment); (iv) Poverty Headcount Ratio at national poverty line¹² (PHR_{it}) (% of population); (v) Proportion of Seats held by Women in national Parliaments (SWP_{it}) (%); and (vi) Total Population (TP_{it}) like control variable.

Under another form, one can write our model as below:

$$COSf_{it} = \alpha \cdot COSf_{it-1} + \beta_1 \cdot CFWF_{it} + \beta_2 \cdot TVE_{it} + \beta_3 \cdot PHR_{it} + \beta_4 \cdot SWP_{it} + \beta_5 \cdot TP_{it} + \mu_i + v_{it} \quad (6)$$

Data and Variables

The statistical sources used for this analysis are the World Bank's World Development Indicators¹³ (WDI) and the World Bank's Education Statistics¹⁴ (ES).

The primary World Bank collection of development indicators is compiled from officially recognized international sources. It presents the most current and accurate global development data available, and includes national, regional, and global estimates.

The World Bank compiles data on education inputs, participation, efficiency, and outcomes. Data on education are compiled by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics from official responses to surveys and from reports provided by education authorities in each country (for more details about the data, see The World Bank EdStatsQuery¹⁵).

These databases provide more than 800 development indicators, with time series for 209 countries and 18 country groups from 1960 to 2011. Table 1 presents a summary of the key variables used to empirically validate the dynamic models proposed.

[INSERT TABLE 1]

From the World Bank's World Development Indicators (WDI) and World Bank's Education Statistics (ES), we have temporal observations ($T = 41$) by countries for the period 1970-2010. We are able to form a balanced panel data; see descriptive statistics of variables in Table 2.

[INSERT TABLE 2]

Empirical Results

Starting with a descriptive analysis of data, Table 3 shows large differences between regions when we compare the current rates (total and only female) of primary school-age children out of school for 1970-2010 in low-income countries. We can underline the rates of East Asia and Pacific (50.6 and 50.1, respectively) and Europe and Central Asia (7.50 and 7.03, respectively). The other regions have values of 39.27 and 37.72 (Sub-Saharan Africa), 26.98 and 24.14 (South Asia), and 34.4 and 29.6 (Latin America & Caribbean).

If we are considering countries with lower middle income, taxes will be substantially reduced in East Asia and Pacific, going from 50.1 to 12.68 (one fourth), similar to what occurs in Latin America and the Caribbean, reducing female dropout rate to one third.

[INSERT TABLE 3]

Taking into account the current rates (total and only female) of contributing family workers, we can highlight for 1970-2010 the cases of East Asia and Pacific (43.97 and 56.15, respectively, in low-income countries) and 11.90 and 11.20 (Latin America & Caribbean). The other regions have values of 30.74 and 40.45 (Sub-Saharan Africa), 15.78 and 21.53 (Europe and Central Asia), and 24.56 and 54.30 (South Asia).

Finally, when comparing the proportion of seats held by women in national parliaments (%) by income level, we can see large differences between regions that are reduced as we compare them to

samples of countries with higher incomes within each region. Focusing on low-income level countries, we can underline the cases of East Asia and Pacific (15.06), South Asia (13.83), Sub-Saharan Africa (13.17), Europe and Central Asia (10.30), and Latin America & Caribbean (3.88).

On the other hand, Table 4 shows small differences between regions when we compare the current percentages (by income level) of the population that is female. These differences are higher when we compare the rates of the population between the ages 0 to 14 as a percentage of the total population. The low-income East Asia and Pacific region has a value of 35.45. The other regions have values of 39.54 (Europe and Central Asia), 40.89 (Latin America & Caribbean), 42.86 (South Asia), and 45.14 (Sub-Saharan Africa).

[INSERT TABLE 4]

In Table 4, we also can see large differences between regions when we compare the Poverty headcount ratios at national poverty line (in terms of % of population). Focusing on low income level, we can highlight the cases of Latin America & Caribbean (77.00), Europe and Central Asia (59.67), Sub-Saharan Africa (54.40), South Asia (42.14), and East Asia and Pacific (36.98).

Finally, taking into account the current rates (total and only female) of Vulnerable employment (in terms of % of total employment) (see Table 4), we can emphasize for 1970-2010 the cases of East Asia and Pacific (84.90 and 87.05, respectively, in low-income countries). The other regions have values of 82.69 and 88.58 (Sub-Saharan Africa), 75.60 and 84.28 (South Asia), and 49.62 and 49.54 (Europe and Central Asia).

The evaluation that we present in Table 5 corresponds to the GMM evaluation of Arellano and Bond (1991). In Table 5, the empirical evaluations show a negative relation between Contributing Family Workers (female) and Primary School-Age Children Out of School Rate (female), in Europe and Central Asia region. In this case for GMM method in first difference, the variable Contributing Family Workers (female) is negative and significant (-.5869098), (T-Stat = .3082361). The result is consistent with the findings of Canagarajah and Coulombe (1998), who report some clear gender-based distinctions in the type of tasks performed by a girl and a boy worker; girls do more household chores, while boys are in labor force.

[INSERT TABLE 5]

However, we cannot find empirical evidence between Primary School-Age Children Out of School Rate (female) and the variables used to analyze the effect of poverty and social exclusion (poverty headcount ratio at national poverty line and total vulnerable employment, respectively). In other words, like in Colclough, Rose, and Tembon (2000), we do not find sufficient evidence that poverty is associated with an under-enrollment of school-age female children. In other words, the gendered outcomes of such under-enrollment could be the product of cultural practice, rather than of poverty per se. Under this point of view, and according to these authors, gender inequalities in schooling outcomes, measured in both qualitative and quantitative terms, will not necessarily be reduced as incomes rise.

Finally, identification of effects of other variables is far from being obvious according to different evaluations. For example, a positive and significant value on proportion of seats held by women in national parliaments (.2914276) with a (T-Stat = .1309497) in Europe and Central Asia region. This result is not consistent with the findings of Brown and Park (2002). According to these authors, women's empowerment reduces the likelihood of dropping out.

Summary and Conclusions

The literature on poverty, gender exclusion, and child labor and schooling is large and continually growing. This article considered the impact of each of these factors, while controlling others at the same time. It examined geographic regions individually and separately, with the anticipation that differentials in livelihood strategies and opportunities could be reflected in female child schooling decisions.

Given the data, it is noteworthy that in most low-income countries, the male dropout rate is higher than female rate, which may give us a first indication of the relationship between child labor (more men than women) and dropouts.

Another finding of note is that while in poor countries in East Asia and the Pacific, the proportion of women contributing to family workers is higher than the total (56.9 vs. 43.9), in terms

of dropout percentage coincides (50.1 and 56.1), in regions such as Latin America and Caribbean, this percentage of contribution of family workers is much lower compared to the female dropout rate (29.6 and 11.2). In Europe, it is the opposite, this relation is inverse, with a 21.6 female family contributions and 7.03 female dropout rate.

It seems that some correlation exists between female dropouts and contributing family workers and the level of development of the region. As we analyze the poorest regions (in global terms), contributing family workers and dropout have similar rates (women leave school and go to work on their own, the economy has high rates of informal employment that can withstand it); this is the case in East Asia and Pacific, where the dropout rate is much lower than the proportion of contributing family workers in the most developed region, while school dropout is much higher in less-developed regions with high levels of inequality income—although the number of women working on their own is lower, like in Latin American and Caribbean.

Our econometric analysis shows a negative and significant relation between Contributing Family Workers (female) and Primary School-Age Children Out of School Rate (female), in Europe and Central Asia region. However, we cannot find empirical evidence between Primary School-Age Children Out of School Rate (female) and the variables used to analyze the effect of poverty and social exclusion when we analyze other regions (poverty headcount ratio at national poverty line and total vulnerable employment).

Moreover, identification of effects of other variables, like amount of seats held by women in national parliaments, is far from being evident according to different evaluations.

Even though our results were obtained considering aggregate Primary School-Age Children Out of School Rate as the explanatory variable, we think it will be a very useful disaggregate (data by family) approach, in order to evaluate if our findings are robust.

We believe that efforts in these directions could be very productive for a deeper understanding of the factors that may affect the education of socially excluded girls in developing countries.

Policy Implications

As for the policy implications that can be associated with our analysis, we will start by considering that education systems in many regions leave out a significant number of people, especially girls, forcing us to recommend that if investments in education are discriminate then the inversions should focus on resolving structural impediments that go beyond education. Consequently, it is noteworthy that education policies will not solve the problem of discrimination as there are many factors and sectors involved in this relationship and in any case the level of development determines any action.

Taking into account the last consideration, we judge especially relevant all research about programs that work in mitigating the effects of social exclusion, child labor, poverty, and education, in order to offer policy recommendations and unanswered research questions. In this line of work, we recommend the excellent work of Tembon and Fort (2008), where the authors have an interesting list of interventions that have worked to improve girls' education.

According to Tembon and Fort (2008), and taking into account what has been said so far, the first thing to consider is that an increase in demand should reduce tuition fees, but mostly promote conditional transfer programs to women's education.

Another important issue regards concentrating research efforts on gender inequality above all factors and strengthening community action policy as a way to improve the social and cultural limitations associated with access of female children to education.

Finally, it is necessary to promote female secondary education since it involves improving returns on investment in female education. Attending to educational models, including diffusion and awareness of this gender discrimination is linked to education.

Notes:

¹ According to the *2012 Education for All Global Monitoring Report*, many young people the world—especially the disadvantaged—are leaving school without the skills they need to thrive in society and find decent jobs. The report will focus on skills development, emphasizing strategies that increase employment opportunities for marginalized groups.

² To achieve these, we need to solve some methodological problems related with the estimation of models by traditional methods, such as Ordinary Least Square (OLS) and Least Squares Dummy Variable (LSDV), that led to ad hoc result. In order to solve this problem, we propose one method (based on Arellano and Bond, 1991) that consists of obtaining consistent estimators.

³ According to Filmer (2006), the gender gap is still substantial in countries in South Asia and North and West Africa. In countries where the gender gap is large among youth in the poorest quintile, it is not nearly as large in the richest quintile.

⁴ A plausible explanation, according these authors, is that substitution effects helped protect current incomes from the higher school attendance induced by the subsidy.

⁵ Ordinary Least Square (OLS) and Least Squares Dummy Variable (LSDV) give biased and non convergent values because of inter-relationship between retarded endogenous variable and individual heterogeneity. Under these circumstances, our models should not be estimated by the method of OLS and LSDV due to the fact that estimating by these methods led to ad hoc results.

⁶ Previously, we test for every individual of the linear restrictions of type:

$$E[(\Delta y_{it} - \alpha \cdot \Delta y_{it-1}) y_{it-j}] = 0 \text{ for } j = 2, \dots, t; t = 3, \dots, T$$

⁷ The method proposed by these authors permit a GMM in two stages, written in the

following form: $\hat{\delta} = \left[\left(\sum_i W_i^* Z_i \right) A_N \left(\sum_i Z_i W_i^* \right) \right]^{-1} \left(\sum_i W_i^* Z_i \right) A_N \left(\sum_i Z_i y_i^* \right)$

⁸ The number of instrument increases in the time for every individual. In the case where explanatory variables exist, x_{it} is the model correlated with heterogeneity individual μ_i .

⁹ Thus, if distribution is non auto-correlated, this test gives a value of residues differentiated negative and significant to first order and non significant to the second order.

This test is based on auto-covariance of residues following a normal law $N(0,1)$ under hypothesis H_0 .

¹⁰ The evaluation of the models by traditional methods (Ordinary Least Square “OLS” and within) gives biased and non convergent values because of inter-relationship between retarded endogenous variable and individual heterogeneity. In this context, our models should not be estimated by OLS and LSDV methods due to the fact that estimating by these methods led to ad hoc results. We propose one method that consists of obtaining consistent estimators.

¹¹ Originally, we used other variables to approach child labor, like total economically active children (% of children ages 7-14) or economically active children, work only (% of economically active children, ages 7-14). Unfortunately, the available data for these variables do not allow applying the proposed methodology.

¹² Also, we used other variables, like GINI Index, in order to approach the inequality. One more time, the available data for these variables do not allow applying the proposed methodology.

¹³ World Development Indicators (WDI) is the primary World Bank database for development data from officially recognized international sources.

¹⁴ Education Statistics provides data on education from national statistical reports, statistical annexes of new publications, and other data sources.

¹⁵ The World Bank EdStats Query holds around 2,500 internationally comparable education indicators for access, progression, completion, literacy, teachers, population, and expenditures. The indicators cover the education cycle from pre-primary to tertiary education. The query also holds learning outcome data from international learning assessments (PISA, TIMSS, etc.), equity data from household surveys, and projection data to 2050. EdStats website: <http://go.worldbank.org/ITABCOGIV1>.

References

- Anderson, T. W., & Hsiao, C. (1982). Formulation and estimation of dynamic models using panel data. *Journal of Econometrics*, 18, 47-82.
- Arellano, M., & Bond, S. (1991). Some test of specification for panel data: Monte Carlo evidence and application to employment equations. *Review of Economic Studies*, 58, 277-297.
- Aslam, M., & Kingdon, G. (2008). Gender and household education expenditure in Pakistan. *Applied Economics*, 40, 2573-2591.
- Assaad, R., Levison, D., & Zibani, N. (2007). *The effect of child work on schooling: Evidence from Egypt. Minnesota Population Center Working Paper 2007-4*. Minneapolis, MN: University of Minnesota.
- Bourguignon, F., Ferreira, F., & Leite, P. (2003). Conditional cash transfers, schooling and child labor: Micro-simulating Brazil's Bolsa Escola program. *The World Bank Economic Review*, 17(2), 229-254.
- Boyle, S., Brock, A., Mace, J., & Sibbons, M. (2002). *Reaching the poor: The "costs" of sending children to school. Synthesis report*. London, England: DFID.L
- Brown, P., & Park, A. (2002). Education and poverty in rural China. *Economics of Education Review*, 21(6), 523-541.
- Canagarajah, R. S., & Coulombe, H. (1998). *Child labor and schooling in Ghana. Policy Research Working Paper 1844*. Washington, DC: The World Bank.
- Colclough, C., Rose, P., & Tembon., T. (2000). Gender inequalities in primary schooling: The roles of poverty an adverse cultural practice. *International Journal of Educational Development*, 20(1), 5-27.
- De Janvry, A., Finan, F., Sadoulet, E., & Vakis, R. (2006). Can conditional cash transfer programs serve as safety nets in keeping children at school and from working when exposed to shocks? *Journal of Development Economics*, 79, 349-373

- EFA Global Monitoring Report. (2012). *Youth and skills: Putting education to work*. Paris, France: United Nations Educational, Scientific and Cultural Organization.
- Ersado, L. (2005). Child labor and schooling decisions in urban and rural areas: Comparative evidence from Nepal, Peru, and Zimbabwe. *World Development*, 33(3), 455-480.
- Filmer, D. (2005). *Disability, poverty, and schooling in developing countries: Results from 11 household surveys*. Washington, DC: World Bank.
- Filmer, D. (2006). Gender and wealth disparities in schooling: Evidence from 44 countries. *International Journal of Educational Research*. 43(6), 351-369.
- Gubert, F., & Robilliard, A. (2006). *Do household income shocks affect school attendance in rural areas?: A case study of Madagascar. Working Paper*. Paris, France: Développement, Institutions & Analyses de Long Terme.
- Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. *Econometrica*, 50, 1029-1054.
- Hazarika, G., & Bedi, A. S. (2002). *Schooling cost and child labor in rural Pakistan. ZEF Discussion Paper on Development Policy, No. 52*. Bonn, Germany: Zentrum für Entwicklungsforschung (ZEF).
- Herz, B., & Sperling, G. B. (2004). *What works in girls' education. Evidence and policies from the developing world*. New York, NY: Council on Foreign Relations.
- Huebler, F. (2008, September). *Child labour and school attendance: Evidence from MICS and DHS surveys*. Paper presented at Seminar on Child Labour, Education and Youth Employment. Understanding Children's Work Project, Universidad Carlos III de Madrid, Madrid, Spain.
- Jensen, P., & Nielson, H. S. (1997). Child labor or school attendance? Evidence from Zambia. *Journal of Population Economics*, 10, 407-424.
- Kajisa, K., & Palanichamy, N. V. (2010). Schooling investments over three decades in rural Tamil Nadu, India: Changing effects of income, gender, and adult family members' education. *World Development*, 38(3), 298-314.

- Kakwani, N., Soares, F., & Son, H. H. (2006). Cash transfers for school-age children in African countries: Simulation of impacts on poverty and school attendance. *Development Policy Review*, 24, 553-569. doi:10.1111/j.1467-7679.2006.00347.x
- Kumara, A. S., & Pfau, W. D. (2011). Impact of cash transfer programmes on school attendance and child poverty: An ex ante simulation for Sri Lanka. *Journal of Development Studies*, 47(11), 1699-1720.
- Lewis, M. A., & Lockheed, M. E. (2006). *Inexcusable absence: Why 60 million girls still aren't in school and what to do about it*. Washington, DC: Center for Global Development.
- Lloyd, C. B., Mete, C., & Sathar, Z. A. (2005). The effect of gender differences in primary school access, type, and quality on the decision to enrol in rural Pakistan. *Economic Development and Cultural Change*, 53(3), 685-710.
- Moyi, P. (2011). Child labor and school attendance in Kenya. *Educational Research and Reviews*, 6(1), 26-35.
- Morduch, J. (2002). Between the state and the market. Can informal insurance patch the safety net? *The World Bank Research Observer*, 14(2), 187-207.
- Mugisha, F. (2006). School enrollment among non-slum, slum and rural children in Kenya: Is the urban advantage eroding? *International Journal of Educational Development*, 26(5), 471-482.
- Patrinos, H. A., & Psacharopoulos, G. (1997). Family size, schooling and child labor in Peru: An empirical analysis. *Journal of Population Economics*, 10, 387-405.
- Psacharopoulos, G. (1997). Child labor versus educational attainment: Some evidence from Latin America. *Journal of Population Economics*, 10(4), 377-386.
- Ravallion, M., & Wodon, Q. (1999). *Does child labor displace schooling? Evidence on behavioral responses to an enrollment subsidy*. Working Paper 2116. Washington, DC: World Bank.
- Rose, P., & Al-Samarrai, S. (2001). Household constraints on schooling by gender: Empirical evidence from Ethiopia. *Comparative Education Review*, 45(1), 36-63.
- Sawada, Y., & Lokshin, M. (2009). Obstacles to school progression in rural Pakistan: An analysis of gender and rivalry using field survey data. *Journal of Development Economics*, 88, 335-347.

- Shapiro, D., & Tambashe, O. B. (2001). Gender, poverty, family structure, and investments in children's education in Kinshasa, Congo. *Economics of Education Review*, 20(4), 359-375.
- Son, H. H., & Florentino, J. (2008). *Ex-ante impact evaluation of conditional cash transfer program on school attendance and poverty: The case of Philippines*. ADB Economics Working Paper Series, No.142. Manila, Philippines: Asian Development Bank.
- Tembon, M., & Fort, L. (2008). *Girls' education in the 21st century: Gender equality, empowerment, and economic growth*. Washington, DC: World Bank.
- World Bank. (2011). *World development indicators*. Washington, DC: Author.
- Yu, G. (2007). *Research evidence of school effectiveness in sub-Saharan countries*. EdQual Working Paper, 7. Bristol, England: University of Bristol.

Table 1. Key Variables

Variable	Definition
Rate of primary school-age children out of school. Total	Rate of primary school-age children out of school. Total is the total number of out-of-school children as a percentage of all primary school-age children.
Rate of primary school-age children out of school. Female	Rate of primary school-age children out of school. Female is the total number of female out-of-school children as a percentage of all female primary school-age children.
Contributing family workers, total (% of total employed)	Contributing family workers are those workers who hold “self-employment jobs” as own-account workers in a market-oriented establishment operated by a related person living in the same household.
Contributing family workers, female (% of females employed)	Contributing family workers are those workers who hold “self-employment jobs” as own-account workers in a market-oriented establishment operated by a related person living in the same household.
Vulnerable employment, total (% of total employment)	Vulnerable employment is unpaid family workers and own-account workers as a percentage of total employment.
Vulnerable employment, female (% of female employment)	Vulnerable employment is unpaid family workers and own-account workers as a percentage of total employment.
Poverty headcount ratio at national poverty line (% of population)	National poverty rate is the percentage of the population living below the national poverty line ¹ .

Proportion of seats held by women in national parliaments (%)	Women in parliaments are the percentage of parliamentary seats in a single or lower chamber held by women.
Population, total	Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship—except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin ² .
Population, female (% of total)	Female population is the percentage of the population that is female ³ .
Population ages 0-14 (% of total)	Population between the ages 0 to 14 as a percentage of the total population ³ .

Notes:

¹ National estimates are based on population-weighted subgroup estimates from household surveys.

² The values shown are midyear estimates.

³ Population is based on the de facto definition of population.

Source: Author's elaboration using World Bank's World Development Indicators (2011) and World Bank's Education Statistics (2011).

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Total Sample					
Primary school-age children out of school rate. Female	2568	19.87	22.03	0.06	95.38
Contributing family workers, female	1718	9.93	14.83	0.00	89.10
Vulnerable employment, total	1494	25.65	19.55	0.40	96.40
Poverty headcount ratio at national poverty line	537	37.09	18.07	2.80	92.30
Proportion of seats held by women in national parliaments	2561	13.84	9.93	0.00	56.30
Population, total	8717	24600000	101000000	5450	1340000000
East Asia & Pacific					
Primary school-age children out of school rate. Female	296	9.31	9.68	0.06	45.30
Contributing family workers, female	237	15.73	17.06	0.00	64.20
Vulnerable employment, total	211	28.20	24.68	2.00	90.10
Poverty headcount ratio at national poverty line	60	24.72	13.94	2.80	61.10
Proportion of seats held by women in national parliaments	368	10.62	9.49	0.00	33.60
Population, total	1476	49300000	186000000	7296	1340000000
Europe & Central Asia					
Primary school-age children out of school rate. Female	613	5.63	4.97	0.12	25.43

Contributing family workers, female	782	6.72	11.29	0.00	71.30
Vulnerable employment, total	679	16.21	12.64	0.80	65.10
Poverty headcount ratio at national poverty line	101	24.37	16.50	4.90	92.30
Proportion of seats held by women in national parliaments	720	18.27	10.58	0.00	47.30
Population, total	2358	14300000	25000000	19136	149000000
Latin America & Caribbean					
Primary school-age children out of school rate. Female	434	11.56	12.85	0.15	77.95
Contributing family workers, female	422	6.27	6.61	0.00	40.20
Vulnerable employment, total	394	32.37	11.15	3.90	66.10
Poverty headcount ratio at national poverty line	216	40.82	14.62	9.90	77.00
Proportion of seats held by women in national parliaments	465	14.88	8.53	0.00	43.20
Population, total	1625	11100000	27200000	5450	195000000
Middle East & North Africa					
Primary school-age children out of school rate. Female	422	23.66	21.30	0.52	95.38
Contributing family workers, female	93	17.06	17.93	0.00	56.10
Vulnerable employment, total	93	23.41	16.88	0.40	58.10
Poverty headcount ratio at national poverty line	21	17.09	9.87	3.80	40.10
Proportion of seats held by women in national parliaments	250	6.19	6.56	0.00	31.50

Population, total	838	12300000	16800000	108401	81100000
North America					
Primary school-age children out of school rate. Female	36	3.33	2.29	0.10	9.71
Contributing family workers, female	58	0.67	0.57	0.10	2.10
Proportion of seats held by women in national parliaments	30	17.21	4.02	7.00	22.10
Population, total	123	94000000	116000000	53000	309000000
South Asia					
Primary school-age children out of school rate. Female	61	35.86	24.93	1.40	91.58
Contributing family workers, female	43	38.05	21.19	3.40	77.30
Vulnerable employment, total	46	52.96	15.21	29.60	85.00
Poverty headcount ratio at national poverty line	25	35.66	11.10	15.20	56.60
Proportion of seats held by women in national parliaments	103	10.29	7.94	2.00	33.20
Population, total	328	141000000	281000000	115772	1170000000
Sub-Saharan Africa					
Primary school-age children out of school rate. Female	706	38.95	24.63	0.74	93.17
Contributing family workers, female	83	26.19	25.94	0.40	89.10
Vulnerable employment, total	71	56.15	31.26	3.50	96.40
Poverty headcount ratio at national poverty line	114	51.80	14.49	10.10	81.60
Proportion of seats held by women in	625	13.32	9.20	0.00	56.30

national parliaments					
Population, total	1969	11100000	18200000	36755	158000000

Source: Author's elaboration using World Bank's World Development Indicators (2011) and World Bank's Education Statistics (2011).

Table 3. Descriptive Statistics

Variable	Primary school-age children out of school rate		Contributing family workers		Proportion of seats in national parliaments
	Total	Female	Total	Female	Held by women
Total sample					
High income: OECD	3.64	2.63	2.57	4.78	21.64
High income: non-OECD	3.90	2.80	1.42	2.58	11.18
Low income	36.14	34.60	28.82	39.61	12.88
Lower middle income	18.94	16.79	14.44	22.89	10.11
Upper middle income	11.21	9.22	6.68	10.70	14.12
East Asia & Pacific					
High income: OECD			5.24	10.92	16.82
High income: non-OECD			1.00	1.91	13.54
Low income	50.60	50.10	43.97	56.15	15.06
Lower middle income	13.66	12.68	21.83	33.18	8.26
Upper middle income	15.10	14.40	19.33	29.20	9.92

Europe & Central Asia					
High income: OECD	3.64	2.63	2.35	4.18	23.21
High income: non-OECD			2.38	4.00	15.49
Low income	7.50	7.03	15.78	21.53	10.30
Lower middle income	21.16	19.64	10.19	12.70	11.66
Upper middle income	12.61	10.94	9.01	16.88	13.96
Latin America & Caribbean					
High income: OECD					
High income: non-OECD	3.90	2.80	1.00	1.80	14.46
Low income	33.40	29.60	11.90	11.20	3.88
Lower middle income	15.86	11.48	10.59	11.57	13.20
Upper middle income	9.36	6.99	4.14	5.53	16.07
Middle East & North Africa					
High income: OECD			0.41	0.73	12.83
High income: non-OECD			0.05	0.17	3.58
Lower middle income	12.50	10.32	14.60	32.09	7.32
Upper middle income			5.06	9.26	6.05

North America					
High income: OECD			0.39	0.67	17.21
South Asia					
Low income	26.98	24.24	24.56	54.30	13.83
Lower middle income	8.80	7.57	17.75	38.81	8.64
Upper middle income			6.55	11.25	7.79
Sub-Saharan Africa					
High income: non-OECD			39.50	76.50	9.67
Low income	39.27	37.72	30.74	40.45	13.17
Lower middle income	28.35	27.22	19.83	28.79	11.30
Upper middle income	21.57	20.54	4.35	6.01	18.90

Source: Author's elaboration using World Bank's World Development Indicators (2011) and World Bank's Education Statistics (2011).

Table 4. Descriptive Statistics

	Population				Vulnerable employment	
Variable	Total	Female	Ages 0-14	Poverty headcount ratio	Total	Female
Total sample						
High income: OECD	29548585	51.04	21.14	14.15	12.80	11.72
High income: non-OECD	1189143	47.75	29.45	11.15	11.65	9.65
Low income	14881133	50.49	43.67	52.94	77.95	82.95
Lower middle income	31682649	50.10	40.81	42.17	47.75	52.63
Upper middle income	37324952	50.35	33.35	29.21	29.38	29.61
East Asia & Pacific						
High income: OECD	45947661	50.41	23.57		14.50	14.71
High income: non-OECD	1266778	48.93	29.51		7.57	5.39
Low income	22776484	51.10	35.45	36.98	84.90	87.05
Lower middle income	20196383	49.32	40.69	29.31	59.81	61.45
Upper middle income	238100000	49.31	32.74	14.00	45.00	47.53
Europe & Central Asia						

High income: OECD	18554854	51.21	20.27	14.15	12.70	11.47
High income: non-OECD	530138	50.88	20.30	11.15	17.82	16.87
Low income	4668863	50.76	39.54	59.67	49.62	49.54
Lower middle income	12321953	52.13	29.41	36.78	47.05	47.29
Upper middle income	20562176	51.44	25.20	19.64	23.46	25.65
Latin America & Caribbean						
High income: non-OECD	568787	51.31	28.94		15.39	13.35
Low income	7197950	50.64	40.89	77.00		
Lower middle income	4460522	50.32	42.13	52.20	44.11	48.89
Upper middle income	18661863	50.23	35.02	35.65	30.82	29.53
Middle East & North Africa						
High income: OECD	5045210	50.28	30.56		7.31	5.16
High income: non-OECD	3285539	41.90	32.16		6.57	3.27
Lower middle income	19680477	49.88	43.95	22.43	35.60	44.47
Upper middle income	16015017	49.17	39.01	9.97	19.72	20.23
North America						
High income: OECD	140900000	50.	21.9			

		68	2			
High income: non-OECD	58864					
South Asia						
Low income	48747619	48.82	42.86	42.14	75.60	84.28
Lower middle income	245700000	48.61	37.67	32.01	50.76	56.79
Upper middle income	216408	48.24	42.19		45.03	47.60
Sub-Saharan Africa						
High income: non-OECD	402619	49.62	40.59			
Low income	11143525	50.59	45.14	54.40	82.69	88.58
Lower middle income	14487527	50.38	44.37	50.18	64.35	73.96
Upper middle income	5810620	50.30	39.85	39.70	22.22	25.63

Source: Author's elaboration using World Bank's World Development Indicators (2011) and World Bank's Education Statistics (2011).

Table 5. Arellano-Bond Dynamic Panel-Data Estimation

	Total sample	East Asia & Pacific	Europe & Central Asia	Latin America & Caribbea n	Middle East & North Africa	North America	South Asia	Sub- Saharan Africa
Primary school-age children out-of-school rate. Female (t-1)	.5807747 [3.661537]	-.6373511 [1.995393]	5.237717 [4.840322]	.1069637 [.8839579]	1.735705 [2.522761]	-.7145833 [1.096824]	.4515872 [4.007345]	1.946769 [2.168624]
Contributing family workers, female	.2410075 [3.323061]	.2718573 [1.523813]	-.5869098* [.3082361]	.2522918 [1.441496]	-.8473913 [1.674356]			-.7275889 [.6100273]
Vulnerable employment, total	-.1096033 [8.989808]		1.992803 [1.500356]		1.099444 [4.860935]			
Poverty headcount ratio at national poverty line	.0482351 [.5444332]		-.6984193 [.8583749]	-.1193502 [.3750561]				
Proportion of seats held by	.1320133	-.1338773	.2914276**	-.4332201	16.8154		2.047856	5.09946

women in national parliaments	[2.924875]	[.3214143]	[.1309497]	[1.173789]	[16.90888]		[15.88617]	[4.817993]
Population, total	8.67e-08 [7.83e-07]	5.49e-09 [3.23e-07]	3.93e-06 [4.49e-06]	9.66e-09 [3.17e-06]	-5.36e-06 [6.25e-06]		-1.00e-07 [8.25e-07]	-.0000165 [.0000115]
Constant	-1.022577 [343.0793]	5.641936 [27.46188]	-165.2246 [165.0323]	14.01507 [60.3795]	-20.8496 [83.19342]	6.169449 [4.534489]	3.144029 [583.0526]	277.2494 [162.2576]
Wald test	21.10(6) p= 0.0018	4.60(4) p=0.3303	895.64(6) p= 0.0000	2.56(4) p=0.6334	34904.89(5)) p= 0.0000	0.42(1) P=0.5147	53.90(3) p= 0.0000	1020.45(4) p= 0.0000
Z1	-.29097 p=0.7711	.24454 p=0.8068	1.213 p=0.2251	-.10265 p=0.9182	-1.0399 p=0.2984	.35266 p=0.7243	.11264 p=0.9103	-.63949 p=0.5225
Z2	.33551 p=0.7372	-1.3442 p=0.1789	.11813 p=0.9060	.42416 p=0.6715	.35869 p=0.7198	-.59595 p=0.5512	-.27875 p=0.7804	.93073 p=0.3520
Number of obs	62	42	22	37	33	22	16	13
Number of countries	16	7	6	8	5	2	4	5
Number of instruments	61	43	23	38	34	23	17	14

Notes:

WC-Robust Std. Err

Two-step results

Z Arellano-Bond test for zero autocorrelation in first-differenced errors. H0: no autocorrelation

Source: Author's calculation using World Bank's World Development Indicators (2011) and World Bank's Education Statistics (2011).