Targeted and Multidimensional Approaches to Overcome Inequalities in Secondary Education for Adolescent Girls: The Impact of the Campaign for Female Education (CAMFED) Program in Tanzania and Zimbabwe

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In many low- and lower-middle-income countries, key barriers to girls' secondary school access and learning include poverty, school inaccessibility, poor school quality, and lack of gender-sensitive practices in the classroom. The nongovernmental organization, Campaign for Female Education (CAMFED), provides a range of financial, pedagogical, and community-supported interventions aimed at removing these barriers in government secondary schools in Tanzania and Zimbabwe. Using longitudinal data, we adopt quasi-experimental methods to examine the impact of the CAMFED program on reducing secondary school dropout and improving test scores in English and mathematics. Results suggest that the CAMFED program has a significant effect on both improving access and learning for the most disadvantaged adolescent girls. However, low-performing learners remain particularly at risk of dropout, necessitating further consideration and support for these girls.

Introduction

Despite significant increases in access to primary schooling in sub-Saharan Africa over the past 2 decades, many adolescents from disadvantaged backgrounds, and girls in particular, fail to make the transition to secondary school. Those who do make the transition are at risk of dropping out before completing. Even if they remain in school, many do not reach appropriate learning levels for their age.

While there is some evidence of reforms aimed at improving access and learning in sub-Saharan Africa, as the review or relevant literature below identifies, these are most often centred around the impact of individual

This project was funded by Echidna Giving and the UK Department for International Development's Girls' Education Challenge program (via the Campaign for Female Education [CAMFED]). We are extremely grateful for the immense support provided by CAMFED in preparing this article, in particular Lucy Lake, Stuart Johnson, Luxon Shumba, Anthony Peckham, and Jose Liht. We appreciate their engagement in the process, including their openness with sharing data, and providing on-going advice and feedback in relation to the details of their program, while being mindful of the importance of the independence of our analysis. We are also grateful to Anna Vignoles for comment on an earlier version of the article, which have helped to shape the analysis; and to Rebecca Gordon for her support to the literature review. The analysis and arguments in the article, as well as any errors, are our responsibility.

Received October 9, 2020; revised April 28, 2021; accepted November 28, 2021; electronically published November 30, 2022

Comparative Education Review, volume 66, number 4, November 2022.
 https://doi.org/10.1086/721849

interventions in primary schools, such as additional books, hiring teachers or enhancing pedagogical approaches for learning. There is, however, limited empirical evidence on the impact of such interventions at the secondary level or for improving equity (for a meta-analysis of these interventions, see Snilstveit et al. [2016]). Moreover, there are very few evaluations of interventions aimed at targeting marginalized girls in particular (Evans and Yuan 2019; Rose and Yorke 2019).

To address these gaps, this article assesses the impact of a program to support secondary school access and learning for marginalized girls in Tanzania and Zimbabwe by the nongovernmental organization, Campaign for Female Education (CAMFED). CAMFED's program provides a multidimensional package of school and community interventions aimed at tackling systemic constraints, together with targeted support to girls in most financial need. Tanzania and Zimbabwe provide relevant settings for assessing the impact of interventions aimed at marginalized girls given that, similar to other countries in the sub-Saharan African region, they both have low levels of secondary school completion for the poorest girls living in rural areas, reaching 40 percent in Zimbabwe and just 4 percent in Tanzania, according to the most recent Demographic and Health Survey data (Zubairi and Rose 2019).

This article uses data from a representative sample of girls who were enrolled in form 2 of secondary schools in 2013 and were followed longitudinally for 2 years. The study design was quasi-experimental: treatment schools were randomly selected from within districts where CAMFED has traditionally operated and control schools were randomly selected from within comparable districts where CAMFED was given authorisation to carry out the data collection for evaluation purposes. Within treatment schools, girls with the most financial needs were also identified using community approaches and offered financial support in addition to the multidimensional package of interventions. Based on these data, we examine the impact of CAMFED's program on reduced dropout and improved academic achievement in English and mathematics test scores. We include a focus on equity within our analysis, thus making a unique contribution to empirical evidence on the effectiveness of educational programme interventions. This contribution is achieved in two ways. First, we identify the effects of the programme separately for all girls and those who face the greatest financial need within CAMFED's programme. Second, recognizing that initial low levels of learning are a potential risk factor that may contribute to dropout and prevent further learning, our analysis gives specific attention to differential impacts according to girls' prior learning levels, comparing those who benefited from CAMFED's interventions and those who did not.

Review of the Literature

Most evidence on barriers to girls' schooling in sub-Saharan Africa focuses on primary schooling (for reviews, see, e.g., Unterhalter et al. [2014];

Sperling and Winthrop [2016]; Gordon et al. [2019]). As these reviews identify, available evidence beyond primary schooling is more limited in scope and, to the extent it exists, highlights that barriers intensify as girls reach secondary-school age. This section summarizes recent evidence of relevance to girls' secondary education in sub-Saharan Africa, with a particular focus on research in Tanzania and Zimbabwe, where available.

Financial costs to households associated with secondary school are identified as a major barrier, particularly for poorer households. As these costs are substantially higher than for primary schooling, parents frequently have to make decisions about which of their children can continue with their schooling. These decisions are often affected by views on the relative benefits of spending money on girls' education, which are associated with cultural and social norms. For example, in Tanzania, community perceptions that education would reduce girls' marriage prospects and thus raise dowry payments meant that girls were sometimes forced to drop out of school (Mollel and Chong 2017). Early marriage and pregnancy are also commonly identified as a major barrier to girls being able to continue with their secondary education in countries in the region (Delprato et al. 2017; Erulka et al. 2020). This has proven important in Tanzania in recent times, with schools being reported to regularly give girls pregnancy tests; it is reported that up to 8,000 girls are expelled each year due to pregnancy (Martinez 2017).

In adolescence, girls are often required to take on an ever-growing burden of domestic responsibility, which can impact their school attendance and learning, and in some cases their labour is substituted for that of their mothers (Harper et al. 2018). Reports on income shocks and the impact of child labour have been shown to have a particularly damaging effect on both girls' attendance and test scores, affecting their transition from primary to secondary schools (Björkman-Nyqvist 2013; Bandara et al. 2015).

High levels of gender-based violence, a lack of female teachers, inappropriate sanitation facilities (of particular concern for girls when they reach puberty), and pedagogy and curriculum lacking gender sensitivity can all contribute to the problems girls face within secondary schools (Unterhalter et al. 2014; Sperling and Winthrop 2016).

Some studies evaluating interventions aimed at addressing barriers to secondary education have particular implications for girls. Most of these relate to individual interventions rather than addressing the multi-dimensional barriers that adolescent girls face, and are more focused on access than improving learning outcomes (Unterhalter et al. 2014; Evans and Yuan 2019; Gordon et al. 2019). The interventions that have been most commonly evaluated are those associated with scholarship programmes or conditional cash transfers. In general, these are found to have a positive effect on girls' access to schooling but less so on their learning (see, e.g., Baird and Özler 2015; Snilsveit et al. 2016; Evans and Yuan 2019). Average effect sizes are sometimes found to be

larger for secondary school than for primary school (Saavedra and Garcia 2012).

Improvements in sanitation in schools have been found to increase girls' attendance, which is particularly relevant when they reach adolescence (Montgomery et al. 2012). Girls' involvement in school governance has also been demonstrated to improve their experience in schools. A notable example is the "My Rights My Voice, Baraza" project, implemented with school councils in Tanzania. The project found positive impacts on girls' personal development, including self-esteem, confidence and leadership skills, as well as on the attitudes and beliefs about female students becoming leaders in schools and communities. The project also improved the ability of female students to hold teachers, education officers, and community leaders accountable, as 62 percent of female students asked critical questions about promises made in response to their demands and insisted on receiving feedback on any actions taken (Makunjuna et al. 2015).

In summary, reviews of the available literature highlight the need for further evidence on the impact of interventions that aim to tackle the multidimensional disadvantage that marginalized adolescent girls face and so go beyond individual interventions to include targeted and multifaceted support. They further highlight the need to assess the impact of these interventions on both access and learning concurrently. In addition, they identify the importance of extending the evidence-base from primary schooling to secondary education, recognizing that the barriers can both intensify for adolescent girls, and also that additional challenges can emerge (Unterhalter et al. 2014; Sperling and Winthrop 2016). Our article contributes to filling these gaps in the evidence by evaluating CAMFED's multidimensional program aimed at improving retention and learning of marginalized girls in government secondary schools. The details of this program are described further in the next section.

Methodology

As part of Girls' Education Challenge program funded by the UK Foreign, Commonwealth, and Development Office (FCDO, formerly the UK Department for International Development), CAMFED supported 99,807 girls in 279 schools across 24 districts in Zimbabwe and 64,869 girls in 125 across 11 districts in Tanzania. The support offered by CAMFED is through interventions aimed at supporting marginalized girls within rural government secondary schools, working closely with communities. Within each school, CAMFED provided supplementary learning materials or study guides for core subjects; a life skills educational program and resources; mentoring and learning support offered by young women who were previously supported by CAMFED; and psycho-social and other forms of support through school-community activities

and training. Additional financial support was offered by CAMFED to a subset of girls identified as being in most financial need, covering direct and indirect costs of schooling (around 18–20 percent of girls received financial support).

Given the program support offered by CAMFED benefits all girls attending intervention schools (with the exception of financial support to those most in need), we focus first on estimating the differential impact of CAMFED's program on reducing dropout and improving test scores for girls receiving financial support compared with the other girls attending CAMFED-supported schools. Second, we pay specific attention to low achieving girls. This approach enables us to isolate the effects of the program on the most disadvantaged girls (by both financial need and low achievement status) relative to others in the same schools, as well as to those in nonsupported schools.

Study Design and Sample Characteristics

In 2013, CAMFED established a quasi-experimental study, which included the selection of girls in treatment and control schools. Using these data, we are able to estimate program effects, drawing on two rounds of longitudinal data collected by CAMFED: a baseline undertaken in 2013 and the midline in 2015. We expand further on key aspects of the research design to enable the identification of program effects, together with other relevant information about the program which should be considered in the empirical models.

The first stage of the quasi-experimental design was the selection of districts, schools and students. Given that CAMFED already had a presence in Tanzania and Zimbabwe, the intervention took place in districts where CAMFED received government approval to operate previously. Within these districts, CAMFED selected at random a sample of government secondary schools. Within these schools, all girls enrolled in form 2 were part of the baseline in 2013. For the selection of the control group, the first stage was for CAMFED to obtain government permission to be able to collect data for evaluation purposes in other districts. The selection of these districts was based on indicators of rurality and deprivation levels, as well as information on average attainment in national examinations at the district level in previous years, in order to make control districts as comparable as possible to intervention districts. After permission was granted for the districts, a sample of government secondary schools was randomly selected, and all girls enrolled in form 2 were part of the evaluation.[1]

The sample size was determined by power calculations, namely, the number of schools needed to obtain effect sizes over 0.2 standard deviations when taking into account intraschool correlations, that is, homogeneity of test scores within schools. Based on this process, in Tanzania, 81 CAMFED-supported

[1] For details on which districts were included in each treatment group, sampling coverage of schools, district characteristics such as pass rates, see CAMFED's baseline report (CAMFED International 2015).

schools were randomly selected from six districts (Iringa, Kilombero, Morogoro Rural, Rufiji, Handeni, and Pangani) along with 60 control schools from four districts that met the criteria and for which permission was granted (Chamwino, Kongwa, Kisarawe, and Mkuranga). The sample in Zimbabwe included 70 CAMFED-supported schools from eight districts (Chikomba West, Hurungwe, Nyanga, Umguza, Gokwe South, Matobo, Mbire, and Nkayi) and 50 that did not receive support from one district (Chipinge). As this is a real-world quasi-experimental design (see Piper et al. [2016] for another example of this type of approach), CAMFED was only successful in negotiating access to Chipinge district within the time that was available before the start of the intervention. No other district allowed for the collection of information for the evaluation purposes without further support from the intervention.[2] Since the power of the sample was calculated based on schools, the availability of only one district did not affect power calculations, but it does impose issues around the comparability of students between treatment and control. We deal with this issue by using matching methods which we describe below.

Once the schools were randomly selected, the whole class within form 2 was selected for evaluation purposes and followed longitudinally: first, in 2013, and then again in 2015, at which point these girls were expected to be in form 4 of secondary school. When more than one class was available, one was selected randomly. Power calculations for the number of schools were obtained based on intraclass correlation of 0.11 in Tanzania and 0.14 in Zimbabwe, and assumed attrition as high as 40 percent in Tanzania and as high as 10 percent in Zimbabwe based on historical data. The original sample in Tanzania in 2013 comprised 4,116 girls (see table 1). By 2015, 832 girls were missing from the sample. Of these girls, we have information from 540 who have dropped out and we use for empirical analyses. Of the other girls who we have missing information by 2015, we know that 51 were expelled, two left school because they had graduated and 239 may have dropped out or moved to another schools. All these girls are excluded from any empirical analyses. In Zimbabwe, the original sample in 2013 comprised 3,729 girls. By 2015, 1,497 were missing from the sample. Of these girls, 1,308 dropped out (and we use for empirical analyses). Of the other girls, one reported being expelled from school, and 189 may have dropped out or moved to another schools. All of these girls are also excluded from any empirical analyses.

Analysis of attrition between the two time periods by CAMFED indicates that, of 31 different socioeconomic and demographic indicators for these girls, only five had statistically significant differences over time between treatment and control groups (CAMFED International 2015). These five indicators were related to long-term illness or disability, poverty, income, employment, and hunger. All of these indicators were higher for girls in the

[2] More information on the comparison of this district to the eight interventions districts is provided in the CAMFED's baseline report (CAMFED International 2015).

TABLE 1
GIRLS' OUTCOMES AND BACKGROUND CHARACTERISTICS BY TREATMENT, TANZANIA

	Treatment Schools				Control Schools	
	Financial Support and Other Support		Other Support		No Support	
	Mean (1)	SD (2)	Mean (3)	SD (4)	Mean (5)	SD (6)
(A) Outcomes:						
Mathematics:						
Score at baseline	−.097	1.005	.023	1.185	−.041	.976**
Score at midline	1.126	1.256	1.247	1.422	−.007	.996**
English:						
Score at baseline	−.144	1.024	.015	1.172	−.074	.996**
Scores at midline	.497	.976	.701	1.029	−.006	.998**
Dropout	.097	.296	.141	.348	.125	.331**
(B) Students, household characteristics:						
Age	15.889	1.104	15.745	1.121	15.918	1.092*
Form 3	.799	.401	.739	.440	.746	.436*
No. of adults in the household	2.899	1.618	3.193	1.822	3.105	1.748
No. of children under age 6	.976	1.027	.896	.981	1.047	.986**
Lost a father or mother (1 = yes)	.346	.476	.185	.388	.209	.407**
Household head (1 = female)	.388	.488	.271	.445	.255	.436**
Female head/spouse can read/write in English (1 = yes)	.162	.369	.239	.426	.166	.372*
Girl earns money for the household (1 = yes)	.398	.490	.309	.462	.350	.477*
Food security (1 = always have enough food)	.350	.477	.541	.499	.438	.496*
Distance to school (> 2 hours)	.194	.395	.204	.403	.185	.389
Cost of schooling (1 = parents cannot afford)	.578	.494	.385	.487	.408	.492**
Asset index (based on ownership of seven assets)	−.229	.635	.150	.688	.129	.652**
No. of districts	6		6		4	
No. of schools	81		81		60	
N	1,555		1,003		1,558	

NOTE.—Financial support is only received by the most marginalized girls. Other support is received by girls in CAMFED-supported schools. Statistical differences are between three groups of girls.
* Indicates statistical differences between samples at 5% level.
** Indicates statistical differences between samples at 1% level.

treatment group during the second round of data. Therefore, it is possible that by enabling poorer girls to remain in secondary schools the intervention could be affecting the cohort composition over time. To deal with this issue, we use multiple imputation methods, which are explained in more detail below.

An additional complication for the estimation of impacts from the program is that the identification of girls with the greatest needs only took place in intervention schools (in order to identify eligibility for financial support). Their selection was based on community-based approaches, which included the participation of village leaders, schools, local education authorities, and local CAMFED staff in identifying those most in need of support within their

community. Selected girls were offered financial support to cover school fees, materials, and maintenance costs. In control schools, it is not possible to know who would have been identified with the greatest financial needs. Instead, CAMFED collected information on several demographic and socioeconomic indicators related to government definitions of marginality in Tanzania and Zimbabwe for all girls who were part of the study (for more information, see CAMFED International [2015]). These are important indicators that are used to allow a matched sample based on observables.

Another possible complication, but one we consider less important, is the potential for unidentified spill-over effects to those girls in CAMFED-supported schools who did not receive the additional financial support from those in these schools who did. On the one hand, this could potentially lead to positive spill-overs. For example, girls might in share some of their financial support with classmates. On the other hand, it could also potentially lead to negative spillover effects. For example, if financial support improved retention, this might lead to greater class sizes and thus reduced teacher support for other children. A related limitation is that there is heterogeneity in the proportion of girls who receive financial support by school and country. Overall, the range for the proportion of girls receiving financial support by school could be as low as 8 percent and as high as 100 percent. Across half of the schools in Tanzania, between 42 percent and 65 percent of girls receive financial support. In Zimbabwe, this range is between 21 percent and 56 percent of girls. This could result in peer effects mediating the impact of the intervention. While we acknowledge these concerns, we do not anticipate that they are likely to be a threat to separating the impact of those receiving financial support and those not. Most of the finances were used toward costs of attendance, such as accommodation, that were not transferable, and the size of the classes makes it unlikely that the marginal effect of improved attendance would be detrimental to the other school children. In order to investigate whether peer effects may mediate the impact of the intervention, we take account of this in our empirical models and report any potential bias in our estimates.

Table 1 for Tanzania and table 2 for Zimbabwe provide information on the demographic and socioeconomic characteristics of girls attending CAMFED-supported schools, comparing those who received financial support with those who benefited from other aspects of the comprehensive support provided by CAMFED and those attending control schools (see table 1, B). In both countries, the data indicate that those receiving financial support are those in the greatest need. For example, a larger proportion of girls selected to receive financial support had lost one of their parents, had to earn money for their households, and lived in relatively poorer households as measured by assets compared with those not receiving financial support (see tables 1 and 2 for Tanzania and Zimbabwe, respectively). While this suggests that the

TABLE 2
GIRLS' OUTCOMES AND BACKGROUND CHARACTERISTICS BY TREATMENT, ZIMBABWE

	Treatment Schools				Control Schools	
	Financial Support and Other Support		Other Support		No Support	
	Mean (1)	SD (2)	Mean (3)	SD (4)	Mean (5)	SD (6)
(A) Outcomes:						
Mathematics:						
Score at baseline	−.267	.857	−.162	.892	−.076	.975**
Score at endline	−.038	.963	.146	1.022	−.001	1.000**
English:						
Score at baseline	−.295	.932	−.030	1.086	−.076	.969**
Score at endline	.034	.926	.407	.978	.000	1.000**
Dropout	.181	.385	.270	.444	.375	.484**
(B) Students, household characteristics:						
Age	15.037	1.014	14.953	1.040	15.964	1.312*
No. of adults in the household	3.335	3.255	3.502	3.205	3.428	3.197
No. of children under age 6	1.299	1.591	1.406	1.810	1.383	1.726
Lost a father or mother (1 = yes)	.653	.476	.434	.496	.475	.500**
Household head (1 = female)	.547	.498	.413	.493	.448	.497
Female head/spouse can read/write in English (1 = yes)	.603	.490	.660	.474	.642	.479
Girl earns money for the household (1 = yes)	.403	.491	.421	.494	.466	.499**
Food security (1 = always have enough food)	.481	.500	.544	.498	.441	.497**
Distance to school (> 2 hours)	.281	.450	.285	.452	.282	.450
Cost of schooling (1 = parents cannot afford)	.547	.498	.409	.492	.400	.490**
Asset index (based on ownership of seven assets)	−.038	.662	.065	.691	−.034	.656**
No. of districts	8		8		1	
No. of schools	70		70		51	
N	867		1,314		1,548	

NOTE.—Financial support is only received by the most marginalized girls. Other support is received by girls in CAMFED-supported schools. Statistical differences are between three groups of girls.
* Indicates statistical differences between samples at 5% level.
** Indicates statistical differences between samples at 1% level.

community-based selection approach was effective, as mentioned above, it poses an important challenge to the model estimation.

Outcomes of Interest: Reduced Dropout and Improved Learning

Our two outcomes of interest are reductions in dropout and improved learning. For dropout, we compare the difference between CAMFED-supported schools and control schools in the proportion of girls who dropped out over the period 2013 and 2015. Table 1 shows small differences in dropout rates in Tanzania, with the lowest dropout rate for girls who received financial support (9.7 percent) followed by girls attending control schools (12.5 percent) and the rest of girls attending CAMFED-supported schools (14.1 percent). In Zimbabwe, dropout overall is around three times higher than in Tanzania.

The lowest dropout rate was for girls who received financial support (18.1 percent) followed by girls attending CAMFED-supported schools (27 percent), with the highest dropout rate (around 37.5 percent) was for girls attending control schools (table 2).

Learning gains due to the intervention are measured in terms of test scores in mathematics and English. In each country, age-appropriate assessments were designed by their respective national examination councils. The assessments tools used in 2013 for baseline and 2015 for the midline included both common and different items, therefore assessments were anchored to be able to assess changes over time. Assessments were administered under exam conditions in school settings and were marked by the national examination councils. These tests were given a 0–100 scale in Tanzania and a 0–50 scale in Zimbabwe. Unfortunately, we only have the overall score from the tests and not individual items (see CAMFED International 2015). Without individual items, we are unable to generate a scale that would provide more detailed information on competencies achieved. Therefore, for comparability we normalized the learning score (mean = 0 and standard deviation = 1) by country based on girls who were part of the survey in 2013 and 2015. This normalization allows us to estimate changes over time.

In both Tanzania and Zimbabwe, girls who received financial support have the lowest baseline scores (see tables 1 and 2 scores at baseline). Other girls attending CAMFED-supported schools tend to have baseline scores that are closer to those of girls attending control schools. These baseline raw scores confirm that girls receiving financial support have a higher likelihood of marginality and this is associated with their higher likelihood of being low performers.

Over the two academic years, raw scores in both Tanzania and Zimbabwe have shown improvements (see tables 1 and 2 scores at midline). Yet the change in raw scores does not account for the differences in dropout rates estimated above. Since it is possible that CAMFED enhanced the retention of girls who receive financial support, who as shown above are more likely to come from poorer and more disadvantaged households, this poses another important challenge to the model estimation.

Therefore, to assess the impact of the CAMFED program on learning outcomes, we have to take into account the fact that girls who receive financial support are different to the other girls attending CAMFED-supported schools, and that there are also differences in the potential cohort composition of girls remaining in schools after two academic years. Both issues are considered as part of our estimation strategy.

A Comparison Group for Girls Who Received Financial Support

As indicated earlier, a key methodological challenge for our research is the identification of comparable groups between girls who received financial support and other similar girls in control schools, as well as between

the rest of girls in CAMFED-supported schools and girls in control schools. We follow matching methods, as suggested by Rosenbaum (1999) and Rubin (2007), in our selection of comparable groups. We use the selection of observable factors for girls and their household characteristics included in tables 1 and 2. These variables were measured at baseline and were therefore assumed exogenous to the intervention and unlikely to be influenced by the intervention. In addition, due to the community approach for selecting girls in most need, we include baseline data on test scores as this is likely to be correlated with some unobservable factors which may make communities more receptive to selecting girls for the intervention (e.g., girls' attitudes and confidence).

To find a matched sample, the nearest neighbor algorithm (one-to-one matching without replacement) is used to pair each girl with financial support with one girl in the control schools. Similarly, other girls in CAMFED-supported schools are paired with girls in control schools. Although this reduces our sample size, and hence the power in the estimation, the fact that the number of girls who received financial support stays the same and the control group reduces should not affect the power of our calculations significantly (Ho et al. 2007). It does, however, help fulfil our aim of generating more comparable groups to improve the precision of our estimates (Stuart 2010).

Baseline equivalences on the observable characteristics for girls and their households using matched samples are shown in table 3. The use of matching methods enables an identification strategy for the estimation of causal effects that is based on the observable factors. After matching, we found equivalences in all observables except for baseline test scores in English for girls receiving financial support in Zimbabwe. These girls are still lower performers in baseline compared to similar girls in control schools. This issue makes the estimate of the impact on English for this group of girls harder to achieve. Additionally, as is the case with all matching methods, we are unable to account for selection bias based on unobservable factors.

Sample Attrition due to Differences in Dropout Rates

A further consideration for estimating the impact of the CAMFED program on test scores is whether the estimated impact is driven by the changing composition of the cohort. If attrition and dropout rates are different between girls benefiting from the program and girls in control schools, the change in the composition of girls after two years in the program could partially account for the impact of the intervention.[3] As noted previously, girls who received financial support in both Tanzania and Zimbabwe also had the lowest dropout rates in the program (tables 1 and 2).

[3] A further discussion on the reasons behind attrition, which included a potential push out effect due to national examination and the challenge of the rainy season in accessing and reaching some schools (see CAMFED International 2015, 50–51, 60).

TABLE 3
BACKGROUND CHARACTERISTICS BY TREATMENT FOR MATCHED SAMPLES IN TANZANIA AND ZIMBABWE

	Tanzania						Zimbabwe					
	Financial and Other Support			Other Support			Financial and Other Support			Other Support		
	Treatment (Mean)	Control (Mean)	Difference	Treatment (Mean)	Control (Mean)	Difference	Treatment (Mean)	Control (Mean)	Difference	Treatment (Mean)	Control (Mean)	Difference
(A) Outcomes:												
Mathematics:												
Score at baseline	−.091	−.090	−.001	−.021	.001	−.022	−.203	−.215	.012	−.101	−.158	.057
English:												
Score at baseline	−.123	−.069	−.054	−.002	−.013	.011	−.274	−.153	−.121*	−.054	−.100	.046
(B) Students, household characteristics:												
Age	15.901	15.937	−.036	15.796	15.778	.018	15.304	15.298	.006	15.390	15.368	.022
Form 3	.789	.800	−.010	.769	.764	.005						
No. of adults in the household	3.027	3.045	−.017	3.140	3.185	−.046	3.423	3.499	−.076	3.518	3.636	−.118
No. of children under age 6	1.061	1.046	.015	.933	.973	−.040	1.328	1.312	.016	1.400	1.398	.002
Lost a father or mother (1 = yes)	.248	.253	−.005	.187	.190	−.003	.588	.564	.024	.465	.435	.030
Household head (1 = female)	.301	.323	−.022	.255	.254	.000	.508	.541	−.033	.449	.429	.020
Female head/ spouse can read/write in English (1 = yes)	.154	.159	−.005	.196	.228	−.032	.625	.608	.017	.634	.637	−.003

Child earns money for the household (1 = yes)	.356	.367	−.011	.320	.324	−.004	.439	.421	.018	.445	.442	.003
Food security (1 = always have enough food)	.391	.398	−.007	.522	.526	−.004	.455	.460	−.005	.508	.497	.011
Distance to school (> 2 hours)	.192	.179	.013	.207	.192	.014	.295	.289	.006	.257	.295	−.038
Cost of schooling (1 = Parents cannot afford)	.468	.494	−.027	.398	.381	.016	.480	.493	−.013	.391	.403	−.012
Asset index (based on ownership of seven assets)	−.033	−.056	.023	.136	.157	−.021	−.085	−.101	.016	−.018	−.021	.003
No. of districts	6	4		6	4		8	1		8	1	
No. of schools	81	60		81	60		70	51		70	51	
N (matched sample)	2,018		1,704		1,138		1,374					

NOTE.— Nearest neighbor algorithm with one-to-one match. Girls receiving financial support in treatment schools are matched to girls in control schools.
* Indicates statistical differences between samples at 5% level.
** Indicates statistical differences between samples at 1% level.

The changing composition of the cohort due to attrition and dropout, including the associations between dropout, low performance and poverty, are likely to affect the estimation of test scores two years after the intervention. As CAMFED is supporting poorer and lower-achieving girls to remain in education, any estimated impact of the program is likely to underestimate its true impact.

Groenwold et al. (2012) suggest the use of multiple imputation on the missing information from the outcome variable, in our case test scores, as a plausible method to deal with the cohort composition. Following this approach, we use information from baseline test scores and relevant demographic and socioeconomic factors which predict learning, to estimate imputed values for the test scores two years after the intervention for those for whom we do not have this information. The result of this imputation method is the generation of five data sets with plausible values of the test scores for girls who dropped out of the program. Therefore, we adjust the estimation of program effects for the fact that we apply multiple imputation methods (Carpenter and Kenward 2012).

Estimation Methods

We use a logit model to estimate reductions in dropout rates as a result of the program (see Cohen et al. [2002] for details). The logit model measures the probability that girls remain in the program conditional on a set of observable characteristics. We first estimate the difference in the likelihood of dropping out between girls attending CAMFED-supported schools and girls attending control schools, providing separate estimates for girls who received financial support and the rest of the girls. We next added covariates included in tables 1 and 2 to condition for student and household characteristics. Finally, we re-estimate the models using the matched samples, which we argue is the most robust statistical method to estimate differences in dropout rates given observable differences between girls in CAMFED-supported schools and those in control schools, particularly those who received financial support.

Formally, we estimate the following logit models for the girls' subsample:

$$\text{logit}y_{ij} = \alpha T_j + X_{ij}\beta + \epsilon_{ij}, \tag{1}$$

where y_{ij} is a categorical variable equal to 1 if student i in school j had dropped out by the midline and 0 otherwise, T_{ij} is a dummy equal to 1 if girl i in school j (a CAMFED supported-school) is either receiving financial support or not, and 0 otherwise, and X_{ij} is a vector including a constant and students' and schools' controls (see tables 1 and 2). Also, as mentioned above, we rerun equation (1) but relying on matched samples:

$$\text{logit}y_{i'j=\alpha T_{i'j}} + \epsilon_{i'j}, \text{ where } i' = 1, \ldots, N' (\text{and } N' < N).$$

For estimating differences in test scores, we use difference-in-difference (DiD) estimation methods, accounting for the multiple imputed data sets to

adjust for estimates in parameters and standard errors. Test scores in mathematics and English are standardized with respect to the control group for comparability and estimation purposes (Kremer et al. 2009; Duflo et al. 2011; Cummins 2017). We first estimate the relative difference over time in test scores separately for girls who received financial support and for the rest of the girls attending CAMFED-supported schools. We then included demographic and socioeconomic factors to take account of the potential influence of these variables in the estimation. Finally, we use the matched samples as the most robust statistical method for estimating changes over time in test scores.

That is, we estimate the following model:

$$y_{ijt} = \gamma time + \alpha T_{ij} + \varphi(time \times T_{ij}) + X_{ij}\beta + \epsilon_{ij}, \quad (2)$$

where y_{ij} is the standarized learning score (with respect to the control group) for student i in school j at time t, the dummy *time* takes the value of 0 for the baseline and 1 for midline, and the effect we are interested is the DiD effect given by the coefficient φ. To account for potential differences on school unobserved characteristics driving learning levels, we run equation (2) using school fixed effects as well (dropping school covariates), and in all specifications we estimate equation (2) using clustered standard errors at the school level. In order to check for the possibility of peer effects mediating some of the impact of the intervention, we include two additional terms in equation (2): the proportion of girls receiving financial support per school; and the interaction of this term with the dummy variable for *time*.

The second objective of the article was to identify the impact of the program for low-performing learners specifically. To identify low-performing learners, we divide the sample according to the lowest 25 percent (low), the middle 50 percent (medium), and the top 25 percent (high) of the scores at baseline. We re-estimate our models for dropout and test scores using interactions terms between program support for low-, medium-, and high-performing learners (Hayes 2013). The interaction effect enables us to capture if estimated program effects on dropout reductions or improved learning differ depending on initial academic scores.

Results

Effect of the CAMFED Program on Dropout Rates

Estimates for the reductions in dropout rates for Tanzania and Zimbabwe due to the CAMFED program are shown in table 4. For all estimates, the column indicated as "raw" shows the difference in the likelihood of dropping out between girls in CAMFED-supported schools (separated for those who received financial support and for other girls attending CAMFED-supported schools) and girls in control schools. The next column includes covariates for

TABLE 4
IMPACT OF THE INTERVENTION ON DROPOUT, ODD RATIOS, BY FINANCIAL SUPPORT STATUS

	Tanzania						Zimbabwe					
	Financial Support			Other Support			Financial Support			Other Support		
Variable	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched
Treatment (CAMFED supported)	.754**	.753**	.750**	1.145	1.036	1.129	.368***	.343***	.377***	.616***	.719***	.785**
Age		1.251***			1.280***			1.201***			1.220***	
Form 3		.216***			.183***			...			...–	
Adults in the household		.978			1.001			1.014			1.002	
Children under age 6		1.063			1.044			1.045			1.046	
Lost a father or mother		.862			1.056			1.318**			1.203*	
Household head, female		.815			.813			1.192			1.164	
Female can read/write		1.389*			1.261			.973			.935	
Earn money for the household		1.170			1.153			1.260**			1.121	
Food security		.929			.724**			.874			.896	
Distance to school (> 2 hours)		1.434**			1.369**			1.192			1.113	
Parents cannot afford school costs		1.093			.938			1.280**			1.092	
Asset index		.881			.985			1.040			.954	
Mathematics results baseline		.670***			.656***			.604***			.540***	
Constant	.143***	.003***	.151***	.143***	.007***	.130***	.600***	.017***	.607***	.599***	.017***	.527***
Observations	3,034	2,883	2,108	2,501	2,296	1,704	2,255	2,081	1,138	2,591	2,370	1,374

SOURCE.—CAMFED monitoring and evaluation data.
NOTE.—Odds ratio estimates.
* Indicates statistical significance at 10% level.
** Indicates statistical significance at 5% level.
*** Indicates statistical significance at 1% level.

demographic and socioeconomic factors. The last column uses the "matched" sample, as described above.

Our first key finding is that girls who receive financial support in both countries are less likely to drop out relative to girls in the control group. Focusing on results from the matched sample, in Tanzania, girls who received financial support have 0.75 the odds of dropping out relative to comparable girls in control schools. In Zimbabwe, girls who received financial support only have 0.38 the odds of dropping out compared with those in control schools. In Tanzania, there is not, however, a statistically significant difference in dropout rates for other girls attending CAMFED-supported schools and comparable girls attending control schools, while there is a significant difference in Zimbabwe: girls in CAMFED-supported schools have 0.79 the odds of dropping out compared with those in control schools. In summary, in Zimbabwe (where overall dropout is high; see table 2) all girls attending CAMFED-supported schools were less likely to drop out of school compared with those in control schools, and those who received financial support benefited substantially more from the reductions in school dropout. In Tanzania, girls who received financial support were less likely to drop out compared with those in the control group.

Effect of the CAMFED Program on Mathematics and English Test Scores

For learning outcomes, results are presented for mathematics (table 5) and English (table 6) test scores separately. As outlined above, these results use multiple imputation for missing test scores. For mathematics, in Tanzania, girls receiving financial support achieved, on average, 1.19 standard deviation higher scores than comparable girls in control schools (table 5, matched). Other girls in CAMFED-supported schools recorded a similar gain. An improvement above one standard deviation is considered to be large (J-PAL 2014). In Zimbabwe, however, girls receiving financial support did not register a statistically significant gain in mathematics test scores relative to comparable girls in control schools (table 5, matched). For the other girls attending CAMFED-supported schools, we found small impacts on mathematics scores, estimated to be 0.14 standard deviation and only significant at the 10 percent level. Compared with Tanzania, learning gains in mathematics in Zimbabwe were at best small.

For English, in Tanzania, girls who received financial support achieved 0.59 standard deviation higher scores relative to comparable girls in control schools (table 6, matched). For the rest of the girls attending CAMFED-supported schools, we find similar learning gains relative to comparable girls in control schools, estimated at 0.60 standard deviations. In Zimbabwe, unlike in mathematics, we find that girls who received financial support did increase their English test scores (but only by around half the amount of the gains in Tanzania), recording a 0.23 standard deviation gain relative to comparable

TABLE 5
IMPACT OF THE INTERVENTION ON MATHEMATICS TEST SCORES, BY FINANCIAL SUPPORT STATUS

	Tanzania						Zimbabwe					
	Financial Support			Other Support			Financial Support			Other Support		
Variable	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched
Treatment (CAMFED supported)	−.0573	.0241	−.0011	.0664	.0585*	−.0231	−.1970***	−.0851***	.0130	−.0883**	−.0867***	.0645
Time (endline)	−.0006	−.0247	.0190	−.0003	−.0272	.0120	.0002	−.0534**	.0609	.0001	−.0527**	.0687
Treatment × time (DiD)	1.1944***	1.1957***	1.1885***	1.1923***	1.1511***	1.1953***	.1591**	.1245***	.0713	.2352***	.1171***	.1418*
Age		−.0156*			−.0131			−.0232***			−.0208***	
Form 3		−.0251			−.0063			...			...	
Adults in the household		.0032			.0200***			−.0049			−.0045	
Children under age 6		.0113			.0004			−.0132**			−.0161***	
Lost a father or mother		−.0172			−.0371			−.0069			.0059	
Household head, female		−.0335			−.0839***			−.0684***			−.0415**	
Female can read/write		.0110			.0180			−.0434**			−.0114	
Earn money for the household		−.0004			−.0051			−.0316*			−.0560***	
Food security		.0038			.0073			−.0083			.0121	
Distance to school (> 2 hours)		−.0496*			−.0448			−.0421**			−.0469**	
Parents cannot afford school costs		.0243			.0113			.0129			.0016	
Asset index		−.0212			.0556***			.0338**			.0274*	
Mathematics quartile baseline (25th–50th)		.2808***			.2838***			.3890***			.3990***	
Mathematics quartile baseline (50th–75th)		.6986***			.6988***			.8590***			.8493***	
Mathematics quartile baseline (75th+)		2.0546***			2.0648***			2.0603***			2.0288***	
Constant	−.0000	−.4989***	−.0496	−.0000	−.5864***	.0438	.0004	−.3503***	−.1438***	−.0000	−.4090***	−.0852**
No. of matched data sets	5	5	5	5	5	5	5	5	5	5	5	5
Observations	5,614	5,121	3,588	4,591	4,253	3,101	4,123	3,829	2,000	4,666	4,307	2,326

SOURCE.—CAMFED monitoring and evaluation data.
NOTE.—Models estimated with robust standard errors. DiD = difference-in-difference.
* Indicate statistical significance at 10% level.
** Indicate statistical significance at 5% level.
*** Indicate statistical significance at 1% level.

TABLE 6
IMPACT OF THE INTERVENTION ON ENGLISH TEST SCORES, BY FINANCIAL SUPPORT STATUS

	Tanzania						Zimbabwe					
	Financial Support			Other Support			Financial Support			Other Support		
Variable	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched
Treatment (CAMFED supported)	−.0704*	.0093	−.0543	.0888**	.0421	.0114	−.2265***	−.0675***	−.1250**	.0481	−.0470**	.0530
Time (endline)	.0000	−.0568**	−.0032	.0008	−.0589**	.0207	.0001	−.0704***	.0262	−.0001	−.0725***	.0593
Treatment × time (DiD)	.5738***	.5680***	.5892***	.6198***	.5611***	.6017***	.2596***	.2567***	.2314***	.3596***	.1929***	.3188***
Age		−.0383***			−.0436***			−.0294***			−.0412	
Form 3		.0262			.0371			...			...	
Adults in the household		.0054			.0110*			−.0048*			−.0029	
Children under age 6		−.0129			−.0233**			−.0163***			−.0148***	
Lost a father or mother		.0054			.0229			−.0289			−.0233	
Household head, female		−.0020			−.0189			−.0421**			−.0196	
Female can read/write		−.0435*			.0012			−.0062			.0194	
Earn money for the household		−.0172			−.0293			−.0458***			−.0709***	
Food security		.0037			.0001			.0250			.0291	
Distance to school (> 2 hours)		−.0818***			−.0732***			−.0393**			−.0252	
Parents cannot afford school costs		.0036			.0291			−.0416**			−.0454***	
Asset index		.0432***			.0623***			.0407***			.0494***	
Mathematics quartile baseline (25th–50th)		.5007***			.5408***			.6096***			.6165***	
Mathematics quartile baseline (50th–75th)		1.0521***			1.0713***			1.1639***			1.1781***	
Mathematics quartile baseline (75th+)		2.1634***			2.2451***			2.2664***			2.3119***	
Constant	−.0000	−.2888**	.0049	−.0000	−.2672*	.0605*	.0007	−.3925***	−.0794*	.0000	−.2500**	−.0248
No. of matched data sets	5	5	5	5	5	5	5	5	5	5	5	5
Observations	5,570	5,078	3,545	4,534	4,206	3,064	4,125	3,833	2,003	4,679	4,322	2,330

SOURCE.—CAMFED monitoring and evaluation data.
NOTE.—Models estimated with robust standard errors. DiD = difference-in-difference.
* Indicate statistical significance at 10% level.
** Indicate statistical significance at 5% level.
*** Indicate statistical significance at 1% level.

girls in control schools. Other girls attending CAMFED-supported schools increased their English scores by 0.32 standard deviation relative to comparable girls in control schools (table 6, matched).

In Tanzania, learning gains in English are half those for mathematics, which is mainly explained by the lack of learning gains in mathematics for girls in control group schools. Although the CAMFED program improved learning in both English and mathematics by similar amounts (around 15 points of 100), mathematics scores for the control group increased, on average, by only 1.4 points, whereas English scores increased by 7.8 points. This explains the relatively larger gains in mathematics compared to English in Tanzania. In Zimbabwe, however, this is not the case. Girls in control group schools increased, on average, 6.6 points and 5.8 points out of 50 for English and mathematics, respectively. Therefore, there are greater improvements in English than in mathematics in CAMFED-supported schools in Zimbabwe.[4]

Effect of the CAMFED Program on Low-Performing Girls

Having identified the gains made for those in CAMFED-supported schools, and particularly for those with the greatest financial need, we now consider whether low-performing girls, a group that is at particularly high risk of dropping out or progressing without learning, benefit from the program.

In both Tanzania and Zimbabwe, regardless of whether girls received financial support, low-performing learners are more likely to drop out than other learners (table 7). For example, high-performing learners in Tanzania have half the odds of dropping out relative to low-performing learners (table 7, matched). In Zimbabwe, high-performing learners have only 0.20 the odds of dropping out relative to low-performing learners (table 7, matched).

Furthermore, we find that greater reductions in dropout were achieved for high-performing learners relative to low-performing learners both for those who received financial support (odds ratio of 0.35 for high relative to low-performing learners, as well as others who attended CAMFED-supported schools (odds ratio of 0.20 for high-relative to low-performing learners). In Zimbabwe, however, this was not the case: we did not find relative reductions in dropout for girls receiving financial support and for other girls in CAMFED-supported schools to be contingent on whether they were high-, medium-, or low-performing learners (interactions between learner academic performance group and intervention were not statistically significant in table 6, matched).

[4] We also checked the possibility of peer effects mediating some of the impact of the intervention, assessing whether increasing the proportion of girls receiving financial support per school would enhance the overall impact of the intervention. Out of the four set of estimates shown by eq. (2), which are mathematics and English for each of the two countries, we only found evidence of statistically significant peer effects for Tanzania and for English scores, with a coefficient of the interaction of time = 0.45 ($p \leq .05$). Hence, our estimates for English tests scores in Tanzania should be considered as a lower bound as there is the possibility that the intervention could be more beneficial. We thank an anonymous referee for suggesting we investigate this issue.

TABLE 7

IMPACT OF THE INTERVENTION ON DROPOUT ACCORDING TO INITIAL LEARNING LEVELS, ODD RATIOS, BY FINANCIAL SUPPORT STATUS

	Tanzania						Zimbabwe					
	Financial Support			Other Support			Financial Support			Other Support		
Variable	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched	Raw	Covariates	Matched
Treatment (CAMFED supported)	.844	.900	.962	1.581**	1.341	1.619*	.330***	.366***	.291***	.728**	.880	.946
Medium learner vs. weak	.579***	.567***	.562**	.565***	.534***	.583**	.663***	.695**	.538***	.619***	.638***	.566***
High performing vs. low	.504***	.445***	.515**	.518***	.449***	.441**	.317***	.365***	.281***	.283***	.317***	.193***
Medium performing × treatment	.986	.997	.945	.719	.758	.619	1.040	.912	1.352	.782	.800	.799
High performing × treatment	.375**	.481*	.349**	.181***	.256**	.200***	1.002	1.016	1.440	.435***	.534*	.641
Observations	3,016	2,883	2,108	2,484	2,296	1,704	2,242	2,081	1,138	2,570	2,370	1,374
Controls	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No
Matched subsample	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes

SOURCE.—CAMFED monitoring and evaluation data.

NOTE.—Odds ratio estimates.

* Indicate statistical significance at 10% level.

** Indicate statistical significance at 5% level.

*** Indicate statistical significance at 1% level.

Thus, in the context of Zimbabwe, reductions in dropout were achieved regardless of prior academic performance while, in Tanzania, prior academic performance could still be a relative risk factor in a context where fewer girls drop out overall.

Figures 1*A* and 1*B* show whether there are relative differences over time in learning gains in English and mathematics particularly for low-performing learners relative to medium and high-performing learners. Each column represents the learning gains over 2 years in standard deviations for girls supported by CAMFED relative to the control group according to prior academic

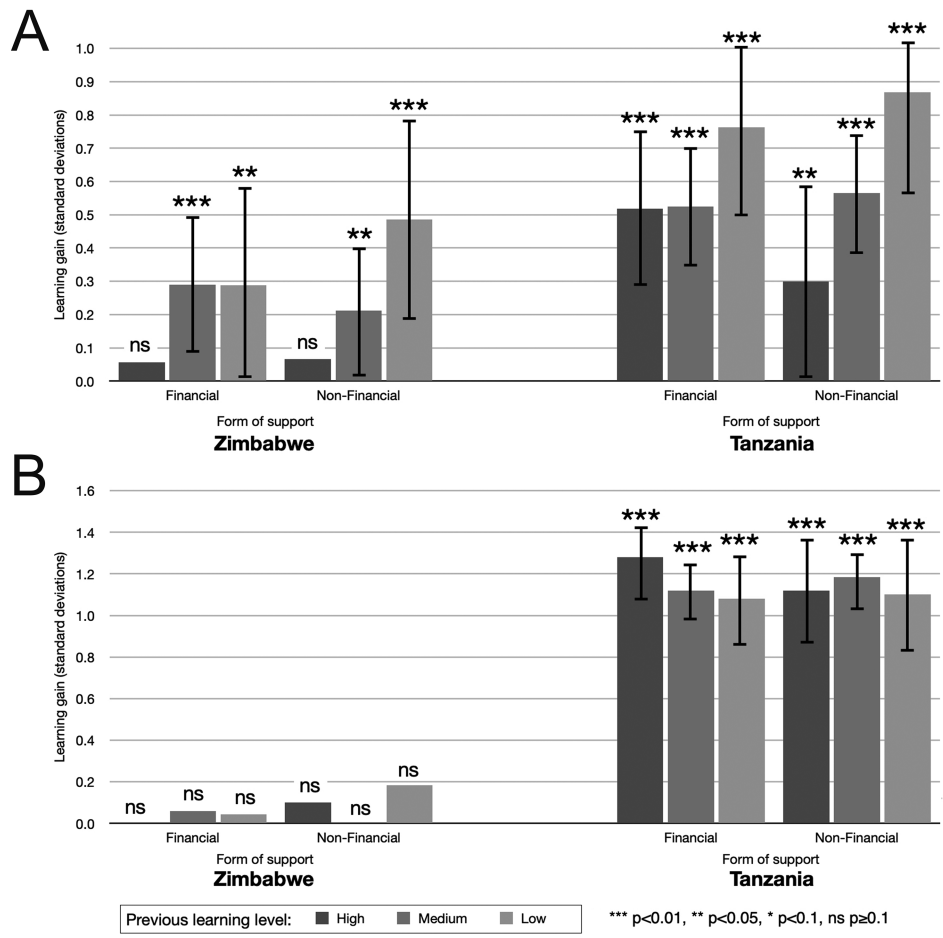

FIG. 1.—*A*, Estimated relative learning gains in English over time for high-, medium-, and low-performing learners, according to financial support status (Tanzania and Zimbabwe). *B*, Estimated relative learning gains in mathematics over time for high-, medium-, and low-performing learners, according to financial support status (Tanzania and Zimbabwe). ns = not significant.

performance. Overall, the results for English show that low-performing learners attending CAMFED-supported schools in both Tanzania and Zimbabwe improved learning compared with their counterparts in control schools to a greater extent than high-performing learners. In Tanzania, low-performing learners who attended CAMFED-supported schools achieved relative gains of 0.87 standard deviations, whereas high-performing learners achieved gains of 0.30 standard deviations. In Zimbabwe, low-performing learners achieved relative gains of 0.49 standard deviations, while the gains for high-performing learners was much lower, at 0.07 standard deviations. The difference between low- and high-performing learners is statistically significant at the 5 percent level.

Mathematics scores also improved for low-performing learners in CAMFED-supported schools in Zimbabwe, where low-performing learners increased their mathematics scores by 0.18 standard deviations compared with their counterparts in control schools, compared with 0.10 standard deviations for high-performing learners. This difference is statistically significant. This was not, however, the case in Tanzania where we find equal relative gains in mathematics for all learners attending CAMFED-supported schools.

Discussion and Conclusion

The purpose of this study was to investigate the impact of a program that included a combination of targeted and holistic support aimed at improving retention and learning for girls in the most disadvantaged schools in Tanzania and Zimbabwe. As identified in the literature review, most studies seeking to identify the impact of interventions on girls' education only include single interventions. Typically, these interventions do not address the multi-faceted disadvantage that some girls face, are most often focused on interventions tackling financial constraints that are more likely to affect access rather than learning, and are mainly at the primary level.

To address these gaps, we use evaluation data from CAMFED's program in Tanzania and Zimbabwe to estimate the impact on dropout and test scores in English and mathematics. While we cannot single out the effects of each individual intervention within their program (since they are offered in combination in all supported schools), we are able to make an important distinction between girls with the greatest financial need and other disadvantaged girls attending CAMFED-supported schools.

Our analyses offer several findings of note. First, the intervention was successful in increasing the likelihood for girls with the greatest financial need of staying in school in both countries. In Zimbabwe, in the context of high overall dropout, removing economic constraints to access for those in most financial need was particularly important, but other girls attending CAMFED-supported schools also benefited. In Tanzania, where dropout is relatively low, it was only those who received additional financial support who experienced a reduction in dropout. Benefits in access due to CAMFED's program was

also found for both low- and high-performing learners in Zimbabwe, but in Tanzania low-performing learners supported by the program were significantly more likely to drop out than medium- and high-performing learners. This suggests that, in contexts with low dropout, additional forms of support are likely to be required for low-performing learners who are potentially at risk of dropping out.

Second, comprehensive programs that combine targeting girls with the greatest financial needs with providing other forms of gender-sensitive support in schools and through communities can yield remarkable learning gains. We found that the CAMFED program led to improvements in English for girls receiving financial support in both Tanzania and Zimbabwe, including for those identified as low-performing learners. It is notable that learning gains for girls with the greatest financial need were similar to other girls attending CAMFED-supported schools. This was particularly the case in Tanzania where this occurred for both English and mathematics.

Third, our analysis shows that the program has enhanced the learning of low-performing learners. In Zimbabwe, low-performing learners who attended CAMFED-supported schools achieved the greatest learning benefits, more so than for high performing learners, in both English and mathematics. In Tanzania, this was the case for English scores only. This suggests that aspects of the program aimed at enhancing the self-confidence of girls, as well as providing a gender-sensitive pedagogical approach that gives particular attention to these girls, are effective.

There are some clear limitations to the results provided which are worth highlighting. First, districts were not sampled at random. While criteria were established for the comparability of control districts with those in which the intervention was taking place, other factors also needed to be taken into account. As such, districts were selected both according to CAMFED's previous presence and where district officials allowed for schools to be included in the control group. This limitation was overcome by conducting power calculations at the school level so that there is enough diversity between schools to establish program effects that are not as affected by the district selection. Second, community approaches were used to select girls to receive financial support, but this only happened in treatment schools. While this may impact on the fidelity of the evaluation, the use of matching methods has enabled us to overcome some of the challenges, as explained in the article. Finally, as the composition of the cohort changed as a result of the intervention, again it is possible that the estimated impact of the program is affected by this compositional change. We used multiple imputation methods as an analytical approach to correct for this issue, which we also explained in the article.

As a final reflection, cultural and social norms associated with girls' education, particularly when they reach adolescence, can be deep-rooted and difficult to shift. Our analysis of CAMFED's program shows that, where

interventions go beyond supporting financial constraints alone to also enhancing gender sensitivity in the classroom, significant progress is possible. However, some of the most severely disadvantaged girls continue to dropout or face challenges in school that are likely to be related to societal attitudes and other factors beyond the education system itself. As such, transformative political leadership that aims to tackle these cultural and social norms within society are likely to be necessary to achieve sustained change (Rose et al. 2020).

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