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CONFERENCE EDITION

THE COST OF NOT EDUCATING GIRLS

EDUCATING GIRLS AND ENDING CHILD MARRIAGE: A PRIORITY FOR AFRICA (SYNTHESIS BRIEF)

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BACKGROUND TO THE SERIES

This study is part of a series of notes at the World Bank on the potential cost of not educating girls globally. Despite substantial progress over the last two decades, girls still have on average lower levels of educational attainment than boys in many countries, especially at the secondary and tertiary levels. As documented by the World Development Report 2018, when it comes to actual learning, while girls tend to outperform boys in reading, they score lower in math and science tests in many countries. Together with occupational segregation and social norms that discourage women to take full advantage of labor market opportunities, this leads to large gaps in earnings between men and women. In addition, low educational attainment for girls has potential negative impacts on a wide range of other development outcomes not only for the girls themselves, but also for their children, families, communities, and societies. The objective of the series of notes is to document these potential impacts and their economic costs.

Low educational attainment affects girls' life trajectories in many ways. Girls dropping out of school early are more likely to marry or have children early, before they may be physically and emotionally ready to become wives and mothers. This may affect their own health. It may also affect that of their children. For example, children of mothers younger than 18 face higher risks of dying by age five and being malnourished. They may also do poorly in school. Other risks for girls and women associated with a lack of education include intimate partner violence and a lack of decision-making ability in the household.

Through lower expected earnings in adulthood and higher fertility over their lifetime, a lack of education for girls leads to higher rates of poverty for households. This is due to both losses in incomes and higher basic needs from larger household sizes. Data on subjective perceptions also suggest that higher educational attainment is associated with perceptions of higher well-being among women.

Low educational attainment for girls may also weaken solidarity in communities and reduce women's participation in society. Lack of education is associated with a lower proclivity to altruistic behaviors, and it curtails women's voice and agency in the household, at work and in institutions. Fundamentally, a lack of education disempowers women and girls in ways that deprive them of their basic rights.

At the level of countries, a lack of education for girls can lead to substantial losses in national wealth. Human capital wealth is the largest component of the changing wealth of nations, ahead of natural capital (such as oil, minerals, and land) and produced capital (such as factories or infrastructure). By reducing earnings, low educational attainment for girls leads to losses in human capital wealth and thereby in the assets base that enables countries to generate future income. Low educational attainment for girls is also associated with higher population growth given its potential impact on fertility rates. This may prevent some countries from ushering the transition that could generate the demographic dividend. Finally, low educational attainment for girls may lead to less inclusive policy-making and a lower emphasis on public investments in the social sectors. Overall, the message is clear: educating girls is not only the right thing to do. It also makes economic and strategic sense for countries to fulfill their development potential.

BACKGROUND

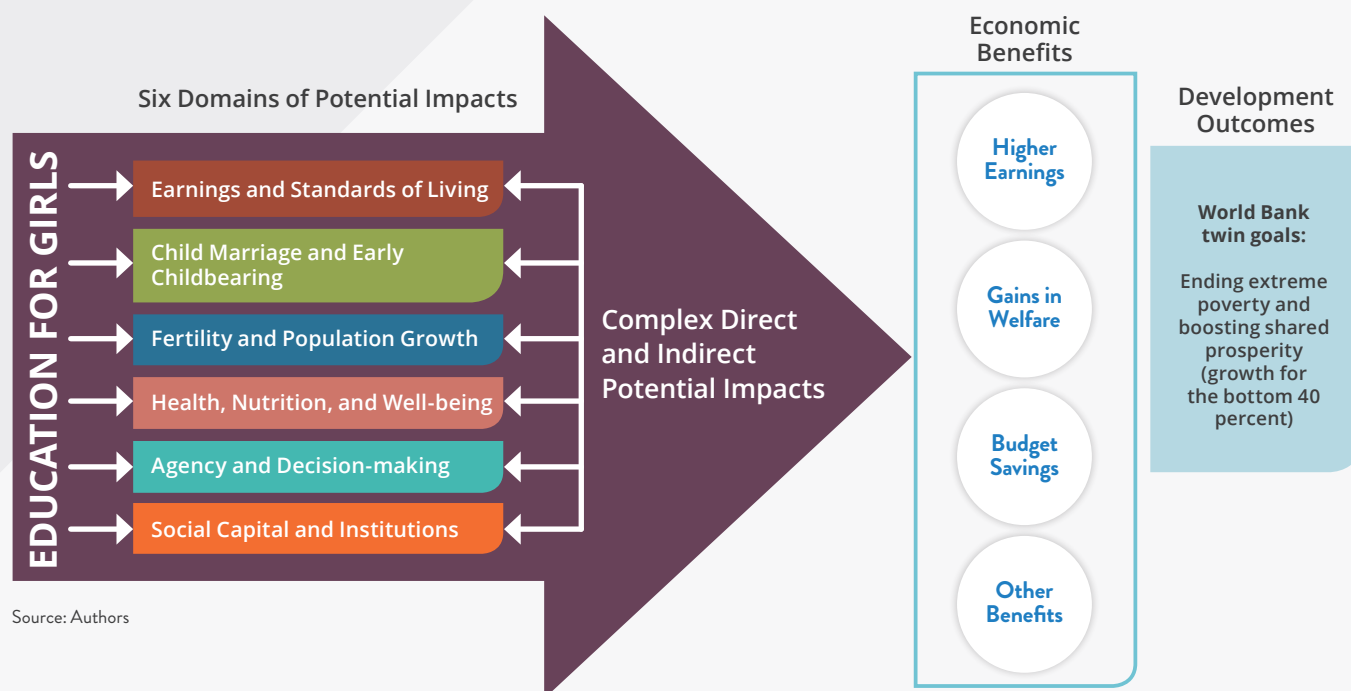
This study was prepared ahead of the second African girls' summit on ending child marriage organized by the African Union in Ghana. It is adapted from a recent global study on the cost of not educating girls, and also relies on previous work on the economic impacts of child marriage. While nine in ten girls complete their primary education and three in four complete their lower secondary education globally, the proportions are much lower in Africa. In the case of sub-Saharan Africa especially, despite progress over the last two decades, just over two thirds of girls complete their primary education, and four in ten complete lower secondary school. This is in part because the prevalence of child marriage and early childbearing remains very high in the region. In addition, even when they remain in school, girls just like boys suffer the consequences of a learning crisis by which too many children do not acquire the foundational skills that a functional education system ought to ensure, especially again in Africa.

More needs to be done to improve educational opportunities for girls. This requires among others putting an end to the practice of child marriage and reducing the risk of early childbearing. To make the case for investments in girls' education and towards ending child marriage, the

focus of this study is on the potential impacts and cost of low educational attainment for girls and child marriage as opposed to lack of learning while in school (given data constraints). Specifically, the study documents associations of low educational attainment for girls with six domains of interest: (1) earnings and standards of living; (2) child marriage and early childbearing; (3) fertility and population growth; (4) health, nutrition, and well-being; (5) agency and decision-making; and (6) social capital and institutions.

Within the six domains, more than 50 different outcomes are considered. For most outcomes, estimates of correlations are obtained using household survey data for, depending on the indicator, up to 40 countries in sub-Saharan Africa and North Africa. For outcomes measured through Demographic and Health Surveys, results are based on analysis for a core set of 13 countries. Finally, based on the analysis of the impacts of low educational attainment, child marriage, and early childbearing for girls on a wide range of other domains, selected costs associated with these impacts are measured. For the measurement of such costs, because this study was prepared for the second summit of the African Union on ending child marriage organized in Accra in November 2018, the focus is on costs associated specifically with child marriage. The framework guiding the work is given in Figure 1.

Figure 1: Conceptual Framework



Source: Authors

KEY RESULTS

FINDINGS ACROSS DOMAINS

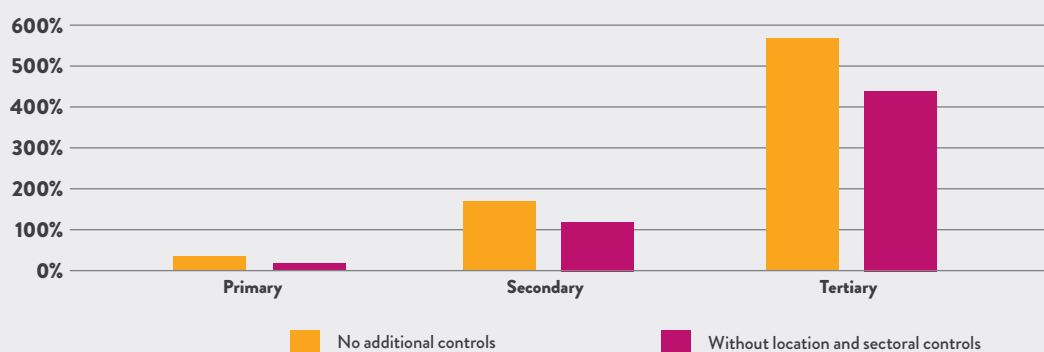
- **Education matters for all children, but even more so for girls than boys because of the link for girls between dropping out of school and marrying or having children early:** Many of the potential impacts of education on development outcomes apply to both boys and girls. When a child does not finish secondary school, or does not learn what is needed to function productively as an adult, potential costs are high for boys and girls alike in terms of lost earnings. But not educating girls is especially costly in part because of the close relationships between educational attainment, child marriage, and early childbearing, and the risks that they entail for young mothers and their children. In addition, occupational segregation by gender between paid and unpaid (housework and care) work, and between types of employment and sectors, which is in part due to social norms, also leads to especially high potential costs for girls. Finally, although this is not discussed in this study, it is also worth mentioning that girls and women in contexts of fragility and violence are especially vulnerable to the consequences of low educational attainment.
- **While primary schooling is necessary, it is not sufficient because for many indicators, having a primary education does not make a large difference versus having no education at all.** The gains associated with educational attainment tend to be substantial only with a secondary education. This is likely in part a reflection of the failure of schools to deliver learning of basic skills in

the early grades, thus hindering the progression of girls to higher educational attainment. But the implication is that while primary schooling lays the foundation for future learning, it is essential to enable girls to pursue their education through the secondary level and to ensure that learning occurs in order to reap the benefits from more education. This in turn also underscores the importance of ending child marriage and early childbearing since they lead girls to drop out of secondary school.

FINDINGS BY DOMAIN OF IMPACTS

- **Earnings and standards of living:** Women with primary education (partial or completed) earn 19 to 30 percent more than those with no education at all depending on the model used for the estimations (Figure 2). By contrast, women with secondary education may expect to make more than twice as much, and women with tertiary education almost five times as much as those with no education. Secondary and tertiary education are also associated with higher labor force participation, and especially full-time work. Finally, women with secondary and tertiary education report higher standards of living compared to those with primary education or lower. For example, women with a secondary education are more likely to state that they have enough money to buy food versus women with primary education or less. When considering the impact of child marriage on earnings for women, estimates suggest that women who married early may have earnings on average eight percent lower across 12 countries than if they had married after 18. This leads to a loss in national earnings (including all men and women) of about one percent for those countries, which is far from negligible.

Figure 2: Gains in Earnings by Education Level (Versus No Education)



Source: Authors. The Figure displays average marginal potential impacts.

- **Child marriage and early childbearing:** Each additional year of secondary education is associated with lower risks of marrying as a child and having a child before age 18 by about seven percentage points on average (see Table 1). If universal secondary education were achieved, child marriage could be virtually eliminated, and the prevalence of early childbearing could be reduced by

up to three fourths since early childbearing goes hand in hand with child marriage. This also means that when assessing benefits from educating girls at the secondary level, we should include benefits from reducing child marriage and early childbearing. By contrast, primary education is not associated with lower risks of child marriage and early childbearing in most countries.

Table 1: Potential Impact of Educational Attainment on Child Marriage and Early Childbearing

	Reduction in risk per additional year of secondary education
Reduction in risk of child marriage	-7.5
Reduction in risk of early childbearing	-6.6

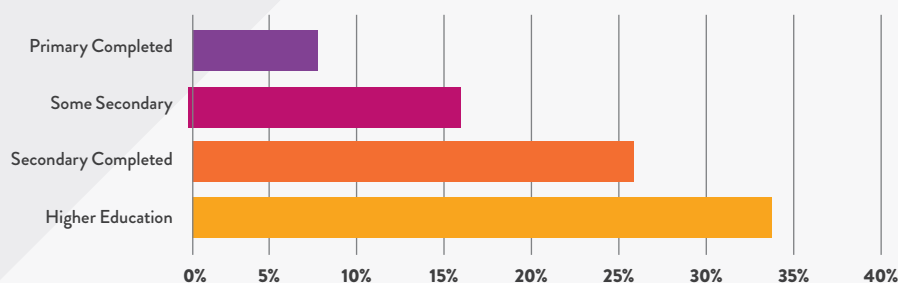
Source: Authors based on Demographic and Health Surveys.

Note: Estimates based on country-level analysis for 13 African countries. All estimated potential impacts are statistically significant except for one country for early childbearing.

- **Fertility and population growth:** A higher level of education is associated with a substantial reduction in total fertility (see Figure 3). As a result, universal secondary education could reduce total fertility by a third in 18 developing countries considered for the analysis. About two thirds of this potential impact could come from educational attainment itself, and one third from ending child marriage. Universal secondary education could also lead to an increase in

modern contraceptive use of a third from the base. If girls were better educated, and if child marriage were to be drastically reduced thanks to universal secondary education, annual rates of population growth could be reduced substantially, with larger impacts in countries that have not yet achieved the demographic transition. This could generate a large demographic dividend. Again, the potential impact of primary education in all these areas is much smaller.

Figure 3: Reduction in Total Fertility (Versus No Education)



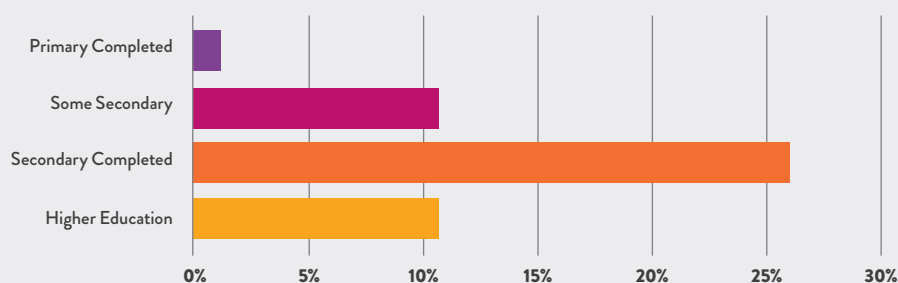
Source: Authors. The Figure displays average marginal potential impacts.



- **Health, nutrition and well-being:** Universal secondary education could increase women's knowledge of HIV/AIDS and their ability to make decisions about their own healthcare by one tenth nationally. Women's psychological well-being could also improve and the risk of intimate partner violence could decrease. In many countries, a higher level of education for mother is associated with a reduction in the risk of stunting for their young children (see Figure 4). As a result, in countries where potential impacts are statistically significant, universal secondary education for mothers could reduce stunting rates for their children by almost

half. Reductions in under-five mortality of about one fifth versus baseline rates could also be achieved in those countries. With the important exception of under-five mortality for which in a few countries a substantial decrease is observed when mothers have primary education, the gains from universal primary education in the area of child health appear once again to be limited. In the case of child marriage and early childbearing, gains also tend to be limited nationally given that few children are born of mothers younger than 18, but marginal impacts tend to be large.

Figure 4: Potential Reduction in Under-five Stunting (Versus Less than Primary Completed)

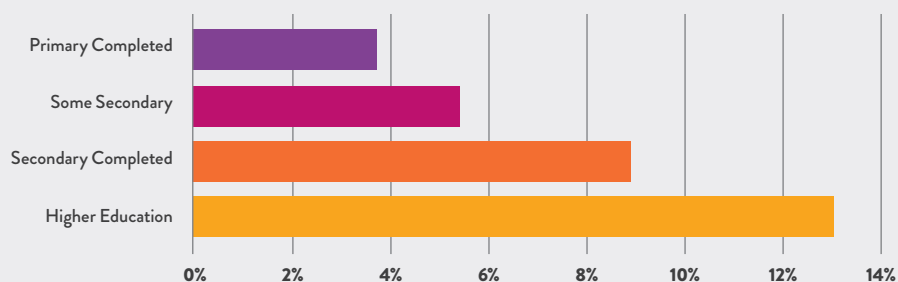


Source: Authors. The Figure displays average marginal potential impacts.

- **Agency and decision-making:** A higher level of educational attainment is associated with more decision-making ability for women in their household (see Figure 5). As a result, achieving universal secondary education could increase by more than one tenth women's reported ability to make decisions within the household, from baseline values. Women with secondary education report lower satisfaction rates with basic services than women with no education, which may reflect a more realistic assessment of their quality.

Finally, having a secondary education is associated with higher birth registration in some countries. While results are not robust across countries, effects are substantial when statistically significant. As with the other indicators, while some benefits could result from universal primary education, they would be smaller. Benefits from ending child marriage in those areas, while occasionally statistically significant, tend not to be large, and are smaller than for educational attainment.

Figure 5: Gain in Decision-making Ability (Versus No Education)



Source: Authors. The Figure displays average marginal potential impacts.

- **Social capital and institutions:** Achieving universal secondary education could enable more women to display altruistic behaviors such as volunteering, donating to charity, and helping strangers, with a change of up to 17 percent from baseline values (this could be because better educated women have more opportunities to display altruistic behaviors). A secondary education is also associated with a higher likelihood for women of reporting being able to rely on friends when in need and it could affect how women perceive their countries' institutions, although in this specific area more work would be needed to confirm the robustness of those relationships. For this set of indicators, the potential gains from primary versus no education at all cannot be measured given data limitations. The effects of child marriage cannot be estimated with the available data.

ECONOMIC COSTS: THE CASE OF CHILD MARRIAGE

- **Given that this study was prepared ahead of the African Union's second summit on child marriage,** the focus for the analysis of economic costs is on impacts associated with child marriage, as opposed to the (larger) costs from low educational attainment for girls. While only a small set of economic costs are estimated, the costs are clearly large. Estimates are in terms of losses in human capital wealth defined as the value of the future earnings of the labor force.
- **Lost human capital wealth due to lower earnings for women:** Lower earnings for women in adulthood due to child marriage lead to losses in human capital wealth defined as the present value of the future earnings of the labor force. The loss in human capital wealth incurred today because women were married early in their youth is estimated at US\$63 billion for 12 countries that account for half of the continent's population. For the continent overall, simple extrapolation suggest that losses could be twice as large. For perspective, annual total net Official Development Assistance (ODA), which consists of disbursements of loans made on concessional terms net of repayments of principal, was estimated in 2016

at US\$41 billion for Africa, so the loss in wealth may be equivalent to a few years of international aid.

- **Lost human capital wealth due to lower earnings for stunted children:** Stunting in early childhood leads to losses in earnings in adult life. Stunting rates could be reduced if child marriage and early childbearing were eliminated, which could generate gains in human capital wealth. The magnitude of those gains is however likely to be smaller than the direct effect on women's earnings, but it is still likely to be substantial.
- **Loss in total wealth per capita from population growth:** Child marriage is associated with higher rates of fertility and population growth. This in turn reduces levels of total wealth per person, especially in countries that have high population growth. The gains in wealth per capita that could result from lower population growth by ending child marriage could be initially smaller than those estimated for women's earnings. They are estimated at US\$ 26 billion in the first year of the elimination of child marriage for 13 countries. Yet these gains would however be cumulative over time, rivalling just within a few years the losses in wealth from women's lower earnings due to the impact of child marriage on educational attainment.



SOLUTIONS TO END CHILD MARRIAGE

- **Again, given the aim of this study to inform the African Union's second summit on child marriage, the focus for discussing policies is on interventions needed to end child marriage.** Multiple interventions are likely to be needed to end child marriage, but since keeping girls in school is key, improving education opportunities for girls should be a priority. Typically, various interventions aiming to end child marriage and early childbearing and improve opportunities for girls tend to be managed by different Ministries, including not only Ministries of Education, but also Ministries of Health, Ministries of Population, Ministries of Labor, and Ministries of Gender or Women and Children's Affairs. Strategies may be defined at the Ministry level, or through inter-ministerial committees. Yet since keeping girls in school is essential to end child marriage and early childbearing, providing education opportunities for girls is especially important. In practice, three-pronged strategies are likely needed: (1) General basic conditions must be met for access to education and learning; (2) Targeted interventions must be implemented to reach vulnerable girls; and (3) Efforts must be undertaken to change gender-based social norms.

- **General conditions for access to education and learning.**

In many countries, there is a need to build secondary schools closer to where girls live or provide modes of transportation and in some cases boarding to enable them to attend schools, especially at the secondary level. Providing adequate water, sanitation and hygiene facilities for girls is also important, as is the need to address the risk of violence and sexual harassment either at or en route to school. It is also essential to ensure that schools improve learning outcomes and provide girls with appropriate skills. Among various entry points that can be used to that end, the following can be mentioned (1) reducing disadvantages that girls face in remote communities due in part to poor targeting of Government resources; (2) creating a more inclusive school culture for girls; (3) providing girls with role models—including through female teachers; and (4) raising the returns to secondary education for women at the local level through better employment opportunities. This list is by no means exhaustive and the appropriate entry points vary between countries.

- **Targeted interventions to reach especially vulnerable girls:** The literature suggests that targeted interventions especially in the forms of incentives to keep girls in school may have large benefits. Three types of interventions were recently reviewed on the basis of the available evidence from experimental or quasi-experimental studies: (1) There is a need for interventions to expand economic opportunities for adolescent girls who dropped out of school and who are unlikely to be able to return; (2) Imparting adolescent girls with life skills and reproductive health knowledge is also important, whether girls are in school or out of school. Evidence suggests that safe space clubs where girls may discuss issues of sexual and reproductive health as well as other topics with female mentors may be an effective means of achieving this. (3) However, according to the literature, the most effective targeted interventions to delay marriage and childbearing are those that enable girls to remain in school, especially through incentives offsetting the out-of-pocket and opportunity costs of schooling.
- **Efforts to change gender-based social norms:** Child marriage, early childbearing, and low educational attainment for girls are rooted in social norms that perpetuate gender inequality. To tackle this challenge, beyond general conditions that education systems should meet and targeted interventions to reach vulnerable girls, additional community-based interventions that involve all members of the community may be an effective means of changing these norms. Such interventions should target men and community leaders apart from women. Finally, adequate laws – for example on the minimum age for marriage without exceptions for parental and judicial consent, are also essential, but often not sufficient on their own to achieve change.

SUMMARY OF KEY FINDINGS

Table 1 below provides the main estimated potential impacts by domain. Potential impacts are summarized by showing gains from a secondary education in comparison to no education at all, factoring in the benefits from the virtual elimination of child marriage that would follow if all girls completed their secondary schooling. In most

cases, potential impacts are estimated for the completion of secondary school, but in some cases the potential impacts are for both partial and completed secondary school combined. In virtually all cases, estimates of the potential impacts of low educational attainment for girls – or equivalently of gains associated with higher educational attainment as captured by secondary education, are large. As documented in more detailed in the study, most gains are associated with secondary as opposed to primary

education. This is also the case for the gains associated with the elimination of child marriage since they are assumed to follow from universal secondary education. It should again be emphasized that what is measured is associations, not necessarily causal impacts. In addition, for some indicators, especially in the case of agency and decision-making, and social capital and institutions, the data often pertain to reported behaviors and perceptions, thereby making interpretation more tentative.

Table 1: Selected Potential Benefits from Universal Secondary Education for Girls

Domain	Estimated Potential impacts
Earnings and standards of living	Expected earnings in adulthood more than doubled Increase in labor force participation or working full time by up to one tenth Gain in perceptions of standards of living of up to one tenth
Child marriage and early childbearing	Virtual elimination of child marriage Reduction in early childbearing by up to three fourths
Fertility and population growth	Reduction in total fertility by about one third Increase in contraceptive use by a third from base Reduction in population growth by 0.6 percentage point
Health, nutrition and well-being	Increase in women's knowledge of HIV/AIDS by one tenth Increase in women's decision-making ability for health by more than a fourth Increase in women's psychological well-being Reduction in under-five mortality rate by up a fifth Reduction in under-five stunting rate by almost half
Agency and decision-making	Women more likely to be able to make decisions in the household Women possibly more likely to better assess the quality of basic services Increase in likelihood of birth registration by one third
Social capital and institutions	Women more likely to report altruistic behaviors Women more likely to report ability to rely on friends when in need Women possibly more likely to be more able to assess institutions/leaders

Source: Authors.

Table 2 provides the valuation of the two potential impacts for which a monetary cost is computed assuming the elimination of child marriage. The analysis focuses on losses in human capital wealth related to (i) lost earnings for women; and (ii) higher fertility rates and thereby annual population growth rates due to child marriage. The estimated costs run

in the tens of billions of trillions of dollars. These estimates are only orders of magnitude since they depend on models and assumptions, but they demonstrate that the potential cost of child marriage is high for the girls and societies overall, and the potential cost of not educating girls would be even larger.

Table 2: Selected Economic Costs of Child Marriage, Selected Countries

Estimates costs	Value
Loss in human capital wealth due to lower earnings (12 countries)	US\$ 63 billion
Loss in welfare (total wealth per capita) due to high population growth (13 countries)	US\$ 26 billion loss in first year, cumulative and rising over time

Source: Authors.



To conclude, low educational attainment for girls and child marriage can have pervasive potential impacts ranging from lower earnings and standards of living to lower psychological well-being and agency for girls and women. Possibly in part because educational investments at the secondary level provide an option value to continue investing to acquire further skills later in life, the benefits from education are much larger at the secondary than at the primary level. This is even more the case when considering that achieving universal secondary school completion for girls could virtually eliminate the risk of child marriage. Countries need to ensure that child marriage is eliminated and that all girls can go to school and acquire foundational cognitive and socio-emotional skills while in school. While the public and private cost of ending child marriage and providing universal quality primary and secondary education for all girls could be far from negligible, the potential returns to this investment could be much larger. Increasing investments in girls' education clearly makes economic sense. It is also the right thing to do.

ANNEX: CONTRIBUTION AND LIMITS OF THE STUDY

This note summarizes findings from a research program at the World Bank to document the potential negative impacts of low educational attainment for girls and child marriage, and some of the related economic costs. The fact that investing in girls is essential for development is not news. The contribution of this study is to illustrate the potential negative effects of not investing in girls in a slightly more comprehensive way, with more recent survey data, and for a larger set of countries than done so far. By pulling together evidence on the associations between low educational attainment and child marriage for girls and multiple socio-economic domains in many countries, the analysis can help foster greater mobilization towards girls' education and ending child marriage.

As with any empirical work of this nature, estimates of potential impacts and costs are subject to two important caveats. First, estimates from available observational data do not permit establishing causal relationships. Thus, when referring to potential 'impacts', the analysis should be taken as only suggestive of what might be achieved with higher educational attainment for girls and women, a reduction in child marriage and early childbearing, and related policy changes. What is measured are associations between educational attainment and child marriage and other development outcomes. For several of the outcomes considered, whether these associations reflect casual relationships can be corroborated by evidence from existing empirical studies that are able to more credibly establish causality. But for other outcomes, fewer such studies are available. Second, simulations of the benefits of increasing girls' education or ending child marriage obtained from the estimates of potential impacts do not account for broader effects in the economy arising from an expansion in the number of better educated girls or women, or a sharp reduction in child marriage. The economics literature suggests that these effects can be sizable, particularly lowering the overall returns to schooling in the labor market in the case of higher educational attainment. Thus, estimates only provide orders of magnitude of potential impacts and costs, not precise values of ultimate potential impacts taking into account general equilibrium effects.



Recommended citation for this study:

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The full study is available on the World Bank website. The study was prepared by a team at the World Bank with support from the Children's Investment Fund Foundation and the Global Partnership for Education ahead of the African Union's Second African Girls' Summit on Ending Child Marriage in Africa. The work builds on previous studies at the World Bank on the economic impacts of child marriage (jointly with ICRW), the changing wealth of nations, and the cost of gender inequality in earnings. The authors are grateful to Rafael Cortez, Bénédicte de la Brière, Lucia Hanmer, Qaiser Khan, Oni Lusk-Stover, Sameera Maziad Al Tuwaijri, Harry Patrinos, and Jeffrey Waite for valuable peer review comments on this study for Africa and the previous global study on the cost of not educating girls from which part of this study is adapted, and to Omar Arias and Meskerem Mulatu for additional comments and advice. Luis Benveniste provided additional guidance. Weight Creative formatted the study for dissemination. The team is also grateful to Erin McCarthy and Linda Weisert at the Children's Investment Fund Foundation and Louise Banham and Jane Elizabeth Davies at the Global Partnership for Education for support. The findings, interpretations, and conclusions expressed in this study are entirely those of the authors and should not be attributed in any manner to the World Bank, its affiliated organizations or members of its Board of Executive Directors or the countries they represent. Citation and the use of material presented in this study should take into account its provisional character. The World Bank does not guarantee the accuracy of the data included in this work. Information contained in this study may be freely reproduced, published or otherwise used for noncommercial purposes without permission from the World Bank. However, the World Bank requests that the original study be cited as the source.

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