

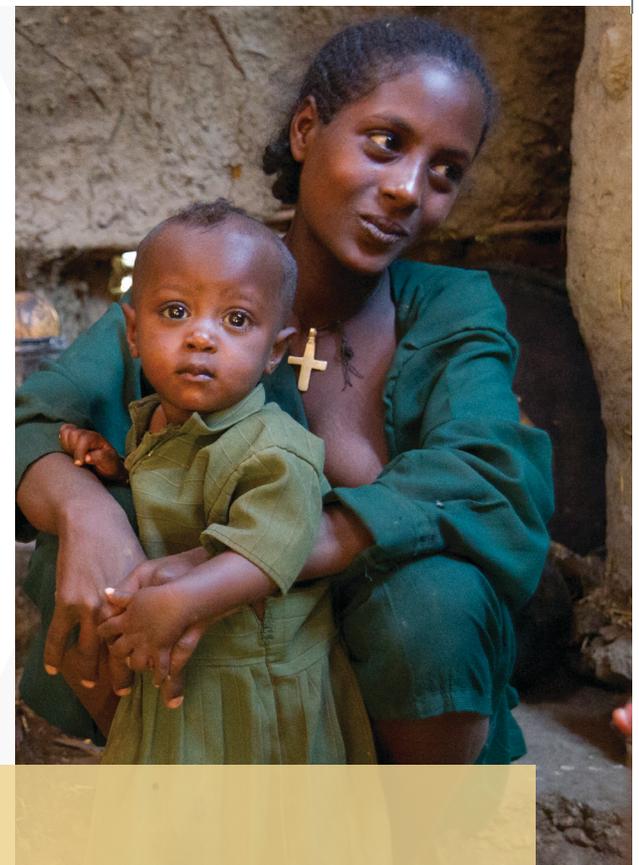


The economic
impacts of
child marriage

ECONOMIC IMPACTS OF CHILD MARRIAGE: GLOBAL SYNTHESIS BRIEF



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OVERVIEW

Each day, more than 41,000 girls worldwide are married while still children, often before they may be physically and emotionally ready to become wives and mothers. Child marriage, defined as marriage or a union taking place before the age of 18, endangers the life trajectories of these girls in numerous ways. Child brides are at greater risk of experiencing a range of poor health outcomes, having children at younger ages, having more children over their lifetimes, dropping out of school, earning less over their lifetimes and living in poverty than their peers who marry at later ages. Child brides may also be more likely to experience intimate partner violence, have restricted physical mobility, and limited decision-making ability. Most fundamentally, these girls may be disempowered in ways that deprive them of their basic rights to health, education, equality, non-discrimination, and to live free from violence and exploitation, which continue to affect them into adulthood. These dynamics affect not only the girls themselves, but their children, households, communities and societies, limiting their ability to reach their full social and economic potential.

While child marriage is widely considered a human rights issue closely connected to gender inequality,¹ the significance of the practice's impacts at both the individual and societal levels suggests that ending child marriage may play an important role in alleviating poverty and in promoting economic development. Ending child marriage can improve health at the individual and population levels, increase productivity and enhance the opportunity to realize the gains in a country's economic growth that can result from declining birth rates and a shifting population age structure, commonly referred to as the 'demographic dividend.' To date, however, there has been relatively little in the way of rigorous assessment of the economic impacts of child marriage or how much child marriage may "cost" countries and societies.

To address this challenge, the International Center for Research on Women (ICRW) and the World Bank collaborated on an extensive and innovative research project to assess the impacts of child marriage on a range of development outcomes, and to understand the economic costs associated with these impacts across countries. By establishing the effects that child marriage has on economic outcomes, the research project aimed to catalyze more effective and evidence-based action to prevent it.

In this brief, we synthesize global findings from this research. The full report detailing the global economic impacts of child marriage, as well as reports and briefs focused on these impacts at the country-level and for specific issue areas, can be found at www.costsofchildmarriage.org ↗

¹ As enshrined in UN General Assembly Resolution 71/175 (December, 2016), "child, early and forced marriage is a harmful practice that violates, abuses or impairs human rights."

CHILD MARRIAGE GLOBALLY

While the proportion of girls marrying as children is declining globally, this decline is not occurring in all countries or taking place equitably within countries, nor is it happening at a sufficiently fast pace to see an end to the practice in the coming decades. Indeed, rates of both child marriage and early childbearing have seen recent declines, but progress has been uneven, and many of the cultural, economic and social factors that have historically contributed to child marriage persist today. Further, because of the young age structures in many countries affected by child marriage, without significant changes in the immediate future, the total number of child brides in the world will remain stagnant or even increase. These alarming facts demonstrate the urgency of acting to end this harmful practice.

The international community has become increasingly aware of the negative consequences of child marriage. Ending child marriage by 2030 is now a target under the Sustainable Development Goals (SDGs), yet relatively few countries have adopted comprehensive strategies to end the practice, and investments in programs and policies focusing on preventing and ending the harmful practice remain limited. Interventions to empower women and educate girls, both of which have been shown to reduce child marriage, are being implemented in many countries, including with support from the World Bank, UNFPA, UNICEF and governments and foundations. But while these efforts represent good progress in addressing child marriage, given the significant negative impacts and high associated costs of the practice, as well as its relative pervasiveness in many countries, much more must be done.

A CONCEPTUAL FRAMEWORK: THE ECONOMIC IMPACTS OF CHILD MARRIAGE

As a starting point for this research, ICRW and the World Bank undertook a literature review designed to better understand the pathways through which child marriage may contribute to a variety of development impacts for child brides over their life course, and in turn, to assess how these impacts may affect costs, from the household to the national level[1]. The review found ample evidence that girls who marry early have little decision-making power within the marital home, a greater likelihood of school dropout and illiteracy, lower labor force participation and earnings, and less control over productive household assets. Because child brides often become mothers during adolescence, they and their children are likely to experience poorer overall health and nutrition. Girls who bear children early have more dangerous, difficult and complicated births, and tend to have less healthy and less educated children than their peers who marry later. Adolescent mothers are at higher risk of maternal mortality and morbidity than mothers just a few years older, and maternal mortality and morbidity come with a wide range of economic and social costs and impacts at the individual and household levels.

Finally, the review found that, while the consequences of child marriage are felt most acutely at the individual level, child marriage is likely to also have profound and far reaching effects at national and global levels in the form of lost earnings and intergenerational transmission of poverty. In short, the literature indicated that the economic impacts and cost of child marriage are likely to be very high for the girls who marry early, their children, their families, their communities and society at large.

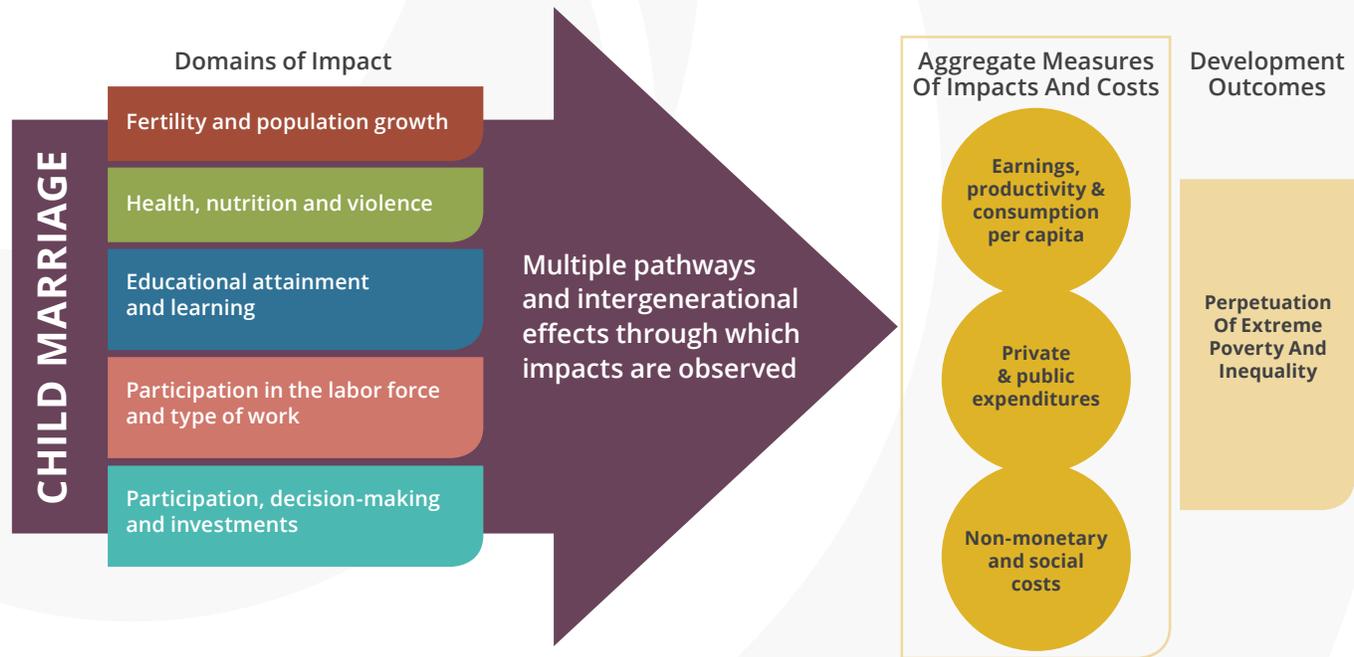
Based on this initial review as well as further review and analysis [2], ICRW and the World Bank developed a conceptual framework, shown on the next page, which posited the main impacts of child marriage in five domains: Fertility and Population Growth; Educational Attainment and Learning; Labor Force Participation; Participation, Decision-making and Investments; and Health, Nutrition and Violence.

We postulated that each of these domains may have mutually reinforcing effects, and that various impacts could take place through multiple pathways. These impacts could be measured at the national level through three different types of costs or benefits, among others, related to: Earnings, Productivity, Household Consumption and GDP per capita; Public and Private Expenditures (such as those spent on education and health); and Non-monetary and social costs (here, for example, we recognize that maternal or under-five mortality have costs that go beyond economic costs).

Finally, these impacts and associated costs could lead to broader consequences at the national level in terms of the eradication of extreme poverty, as well as the promotion of shared prosperity, as part of a development process that benefits poorer and more vulnerable groups in society.



Figure 1: Conceptual Framework for the Study



ANALYTICAL APPROACH

The conceptual framework guided the selection of domains, or themes, to be analyzed using both existing data and new data collected from three countries. While data were sometimes available for more or fewer countries, the study focused on 15 to 25 countries depending on the topic being considered. The core 15 countries for which most estimations were conducted include three South Asian countries (Bangladesh, Nepal and Pakistan), one country from the Middle East (Egypt), six countries from West and Central Africa (Burkina Faso, Democratic Republic of Congo, Mali, Niger, Nigeria and Republic of Congo), and five countries from East and Southern Africa (Ethiopia, Malawi, Mozambique, Uganda and Zambia). For some estimations of impacts and costs, a larger set of countries were included in the analysis, including those from Latin America and the Caribbean. In some cases, estimations based in part on extrapolations were carried for more than 100 countries.

For all countries, the main surveys used for estimations were Demographic and Health Surveys, or DHS, as well as Living Standards Measurement Surveys. The results are based typically on the latest DHS available at the time of the analysis. Priority was given to countries with a relatively high incidence of child marriage and early childbirths, but some countries (such as Egypt) were selected because having a broader range of prevalence rates was critical in order to obtain global estimates [2]. Overall, these countries represent diverse settings in regions of the world where child marriage, as well as early childbirths, are highest (sub-Saharan Africa and South Asia).

In addition to analysis of existing data, the project fielded nationally representative household surveys in Ethiopia and Niger, as well as qualitative research in six countries, with a

focus on Ethiopia, Nepal and Niger. Governments in these countries have shown strong commitments to ending child marriage and are supporting a range of policies and actions to do so. Regression analyses and simulation tools were used to isolate – to the extent feasible – the effects of child marriage and calculate the economic costs associated with some of these impacts. Qualitative analyses helped to better understand the lived experiences of women who were married as children and some of the drivers of child marriage. A detailed discussion of the methods used and their limitations can be found in the full Global Synthesis Report available at www.costsofchildmarriage.org

It is important to note that, due to the use of many assumptions and a lack of data for some potential impacts and costs, the costs and other figures presented here should not be considered as precise. Only orders of magnitude of the costs associated with child marriage are provided. Overall though, impacts and costs appear to be large.

IMPACTS OF CHILD MARRIAGE

Our analyses and findings are organized around the five key domains of impact identified in the conceptual framework: Fertility and Population Growth; Health, Nutrition and Violence; Educational Attainment and Learning; Participation in the Labor Force and Type of Work; and Participation, Decision-Making and Investments. Each of these is discussed in turn below.

Fertility and Population Growth

Child marriage has a large impact on both the likelihood that girls will have a child before turning 18 and on how many children they will have in their lifetime. Our findings confirm

previous evidence that women who marry earlier are likely to begin having children earlier and may continue having children for longer, resulting in higher overall fertility [3].

What Do We Mean by Impacts and Associated Costs?

The aim of the study is to estimate the impacts of child marriage on development outcomes and the economic costs associated with some of these impacts. The term “impact” is used for simplicity, but one must be careful about not necessarily inferring causality. Most estimates of impacts are obtained through regression analysis in order to control for other variables that may affect the outcomes of interest. In some cases, simulations are used. What is measured are thus statistical associations, and not necessarily impacts as could be observed, for example, with randomized control trials. Since child marriage cannot be randomized, we must rely on regression analysis in order to estimate likely impacts, but there is always a risk of bias in the measures of the likely impacts of child marriage. Based on measures of likely impacts, costs associated with selected impacts are then computed. Note that we provide cost estimates only for some, and not all impacts. These costs rely on a number of assumptions and are thus tentative. Overall, the costs represent an order of magnitude of potential costs rather than precise estimations. For more details on the methodology and how it relates to key empirical findings, see [2].

Across our 15 countries, on average more than one in three girls (36.6 percent) marry before turning 18, and almost one in five women between the ages of 18 and 22 have given birth before they turned 18. As is the case globally, the vast majority of early childbearing in these countries takes place within marriage [4], making the prevention of child marriage a critical component of achieving a wide range of health and development outcomes related to both child marriage and early childbearing.

As shown in Figure 2, we estimate that marrying at age 13 rather than at 18 or later increases the number of children a woman will have by an average of 26 percent, with the effect being even larger in some countries. The impact remains large (an increase of 17 percent) even when considering the difference in predicted number of children between those

marrying at age 17 and those marrying at or above age 18 [3]. Ending child marriage would reduce the total fertility rate (TFR) in these countries by an average of 11 percent, with a range of between seven percent in Egypt and 18 percent in Bangladesh. Such reductions in TFR would have very significant implications for the population growth rates of these countries. As one might expect, the effect of child marriage on fertility is generally the highest in the countries that have the highest rates of child marriage, as more women are at risk of having an early childbirth and increased lifelong childbearing in those contexts.

Our analyses show that ending child marriage - particularly marriages that take place when girls are very young - could result in slight increases in the use of modern contraception at the aggregate level, although this is not the case in all countries [5]. For the most part, though, the changes in fertility rates that our models predict would likely be driven through decreasing the proportion of women’s lives spent at risk of pregnancy and childbearing as a result of increasing the ages at which girls marry and begin childbearing.

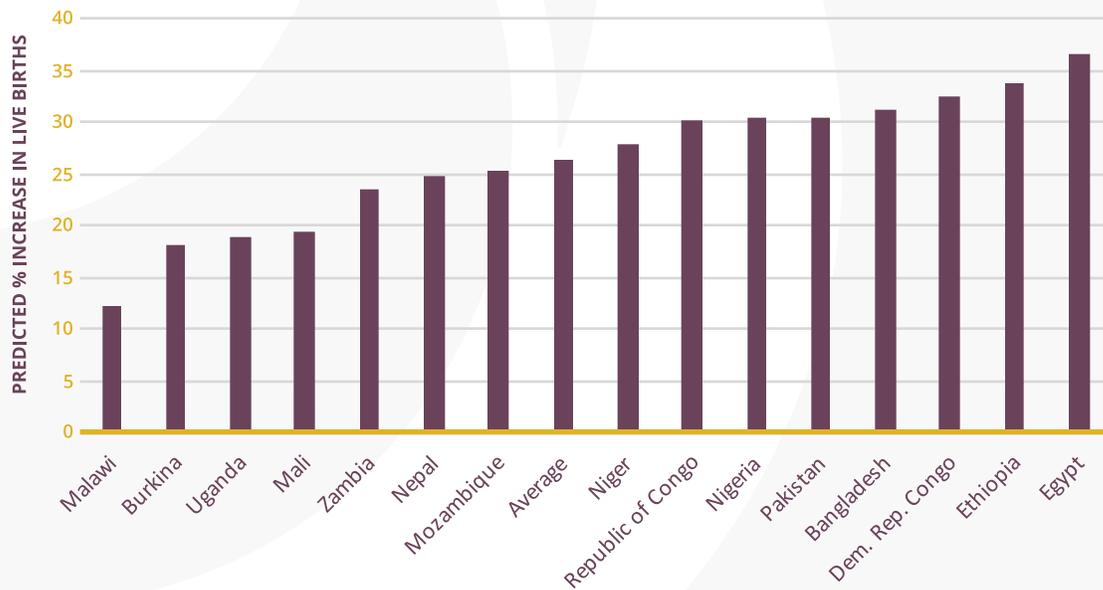
The effects of child marriage on fertility have implications for both individual women and for the countries they live in. To illustrate this, we conducted simulations looking at the effects that ending child marriage would have, beginning in 2015 and ending in 2030. We find that ending child marriage and the early childbearing that is associated with it would have large effects on population growth rates [6]. By 2030, the population of many of the countries in this study would be reduced by two percent or more if child marriage were ended immediately, which would, in turn, have significant positive effects on national budgets and welfare.

“When we have lots of children we can’t raise them properly. But what if I had two or three children, I would be able to raise them properly. I would be able to fulfill all their needs and even I could send them to private school...Now I regret...I was very young [when I got married] so I didn’t know this.”

“When a girl has physically matured we assume her to be ready for marriage in order not to lose her to the more rugged boys in the community.”

QUALITATIVE DATA COLLECTED BY ICRW AND THE WORLD BANK.

Figure 2: Impact of Child Marriage on Number of Live Births over Lifetime, Marrying at age 13 versus 18 or later



IMPACTS ON FERTILITY AND POPULATION GROWTH

Estimated Global Impacts

- Ending child marriage could reduce the total fertility rate by 11% across 15 countries.
- Ending child marriage could reduce the share of girls having a child by age 18 by three-fourths.
- Ending child marriage could result in a slight increase in the use of modern contraception.
- Ending child marriage and early childbirths would reduce population growth substantially.

Sources: [3], [4], [5], [6].

Health, Nutrition and Violence

Child marriage can impact the health of both the girls who are married early and their children. While a number of factors influence how child marriage influences health, giving birth at a very early age (i.e., under age 15) is particularly risky. For the girls themselves, their physical immaturity may increase the likelihood of complications during pregnancy and childbirth, resulting in higher risks of both maternal mortality and morbidity. There may also be associated health risks for the children of child brides.

While we did not conduct any new work on the relationship between child marriage and maternal mortality, the global evidence suggests higher rates of maternal morbidity and mortality for adolescent girls who give birth, particularly those married at the very youngest ages. This does not mean, however, that ending child marriage would necessarily reduce maternal mortality ratios. Indeed, while delaying marriage should reduce the risks of maternal mortality when giving birth at a very young age, we still don't know enough about the relationship between delaying child marriage and the risks of giving birth later in life.

“My first baby was small. The second was 5 months old, and I was pregnant again as my husband did forceful contact with me.”

“[She] was 12 years old when she married. She lost her first child at age fourteen and was advised to wait several years before trying again. Her last pregnancy came with a series of complications that finally claimed her life a week after delivery.”

QUALITATIVE DATA COLLECTED BY ICRW AND THE WORLD BANK.

We did not calculate for this study the costs of maternal mortality and morbidity due to child marriage, nor other potential impacts and costs for women's health, such as psychological wellbeing. However, in terms of the health of the children of child brides, the study estimated the impacts of early childbearing, which is itself mostly due to child marriage. The impacts are substantial. We considered child health in terms of both under-five mortality [7] and having delayed physical development due to a lack of appropriate nutrition, in

other words, stunting [8]. Taking into account a wide range of other factors, our analyses show that being born to a mother younger than 18 increases the risk of under-five mortality by 3.5 percentage points on average, and risk of stunting by 6.3 percentage points on average.

The marginal impacts of child marriage on under-five mortality and stunting are large and have clear implications for those children. However, ending child marriage will only shift rates of under-five mortality or stunting at the national level slightly, because only a small share of children is born to mothers who are younger than 18 each year. In other words, early marriage and childbearing can have significant consequences for child health, but there are not enough of these children to significantly influence national-level statistics.

A further way in which child marriage may influence health outcomes is through intimate partner violence (IPV), which prior research has found to be higher among those married at very early ages. Acknowledging that surveys may underestimate IPV, analysis carried out for this study suggests that, for the majority of countries, the risk of experiencing IPV is indeed higher when girls marry very early (at or under 15 years of age). For the set of African countries included in the study for which DHS data include a module on IPV, eliminating child marriage today would lead to an estimated decline in IPV of almost three to six percent depending on the age group considered [9]. There are a number of countries where effects are not statistically significant. However, there are also likely to be indirect effects at work through the negative impact that child marriage has on girls' educational attainment, given that a reduction in IPV is often observed for women with a higher level of education, even though these effects would not necessarily be large at the national level, given that not all girls who delay marriage may be able to complete a higher level of education.

IMPACTS OF CHILD MARRIAGE ON HEALTH, NUTRITION AND VIOLENCE

Estimated Global Impacts

- Child marriage is the likely cause of 84 percent of births of children to mothers younger than 18.
- The impact of ending child marriage on maternal mortality and morbidity is not fully clear.
- On average, three in 100 deaths among children under-five are attributable to early childbirths.
- On average, one in 100 stunted children under five are stunted because of early childbirths.
- Child marriage at a very early age is often associated with a higher risk of intimate partner violence.

Sources: [4], [7], [8], [9].

Educational Attainment and Learning

Girls' education is among the most significant factors associated with age at marriage, with an extensive evidence base documenting both how child marriage leads to lower levels of schooling and how staying in school can play an important role in delaying marriage. Girls often face gender-

based constraints to staying in school. In contexts where the out-of-pocket and opportunity costs of secondary school remain a challenge for the poor, and where employment opportunities for young women are limited, for example, families may prioritize investments in boys' rather than girls' education. Once out of school, many girls face limited prospects, with marriage among the few available to them. Our analyses confirm the strong relationship between child marriage and poor educational outcomes. Child brides in every country included in this study are much more likely to have dropped out of school than their peers who married later and tend to have completed fewer years of education, both of which have important implications for their ability to enter the formal labor force and to earn money once they do so. In our analyses, we find that lower educational attainment has impacts on a range of other outcomes, as well.

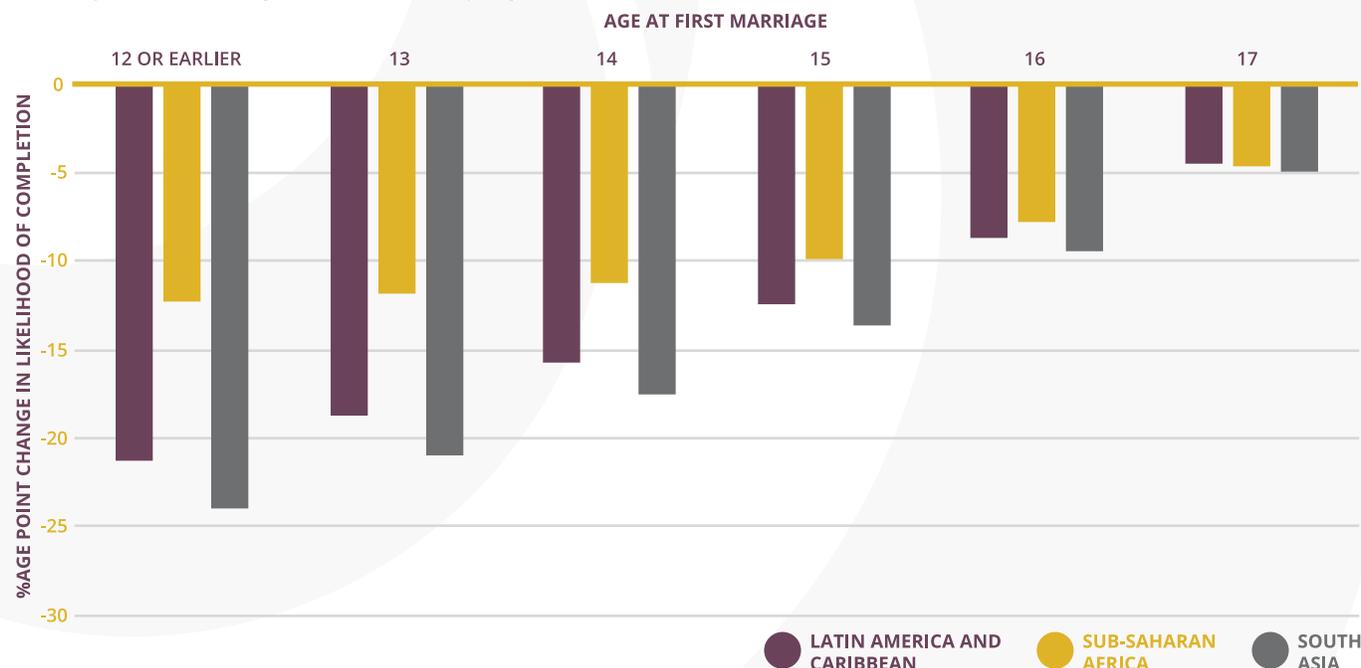
We find that every year of early marriage before the age of 18 reduces the likelihood of girls' secondary school completion by four to six percentage points, with larger impacts in regions (and countries) where completion rates are higher [10]. This relationship is confirmed through the reasons that parents and principals give for girls' school dropout. In many of the countries, marriage is one of the principal reasons listed, with marriage and schooling often seen as incompatible 'either-or' alternatives.

“It’s not that I wanted to [drop out of school], it was out of ignorance that my parents said that a girl’s schooling is not the same thing as a boy’s and so they should pull me out of school to give me away in marriage. I did not want that.”

“We are faced with long distances to primary schools. Girls on their way to school meet men with money who entice our daughters with money for sex. Later some get pregnant and drop out of school. Also we have no vocational school that will train our girls after P7 and S4, so we see it as a waste of resources to educate a girl.”

QUALITATIVE DATA COLLECTED BY ICRW AND THE WORLD BANK.

Figure 3: Impact of Child Marriage on Likelihood of Secondary School Completion (Vs Marrying at 18 or Earlier)



As shown in Figure 3, the younger that girls marry, the stronger the negative effect on educational attainment. This relationship is true in every region examined in this study, with the largest effects in the Latin American and Caribbean and South Asian regions, where secondary school completion rates are generally higher. Conversely, continuing schooling helps to reduce child marriage, as girls who are in school are less likely to marry. Our analyses show that each additional year a girl completes in secondary school reduces the likelihood of marrying as a child by six percentage points on average, with a similar impact on the likelihood of having a first child before age 18 [11].

Finally, educational attainment has important implications for women's children as well, including for their educational prospects. We find very strong evidence of a positive relationship between a mother's education and that of her children [12], confirming other analyses. Because child marriage lowers women's educational attainment, this suggests that child marriage also plays an important role in shaping the educational outcomes of a significant number of children across the world. This relationship, therefore, may play an important role in perpetuating a cycle of poverty and increasing vulnerability to a range of negative outcomes for the children of child brides, including child marriage.

IMPACTS OF CHILD MARRIAGE ON EDUCATIONAL ATTAINMENT

Estimated Global Impacts

- Child marriage is cited as the reason for secondary school dropout for many girls across countries.
- Child marriage reduces the likelihood of girls' secondary school completion by four to six percentage points, with larger impacts in regions and countries where completion rates are higher.
- Each year of secondary school education reduces the risk of child marriage for girls by six percentage points.

Sources: [10], [11], [12].

Women's Labor Force Participation and Earnings

The relationship between child marriage and labor force participation is complex. On the one hand, lower educational attainment among women who marry as children may reduce their likelihood of entering the labor market and adversely affect the type of jobs they engage in. On the other, many women living in poverty must work for the household to survive. Further, although child marriage may not necessarily have a direct impact on women's labor force participation, the higher fertility associated with child marriage may influence women's roles in the labor market and the number of hours they are able to work. Frequent interruptions to employment due to childbirth and the time burden of care responsibilities can also affect the types of jobs that women can engage in, forcing them into lower-paying jobs and more unstable work situations. Child marriage can also curb women's agency and limit their bargaining power in their households, including possibly with regard to the decision to enter labor force. The outcome of these various factors is thus likely to be context-specific and could imply either higher or lower labor force participation among women who marry as children.

Our analyses suggest that across the 15 countries, ending child marriage would not affect labor force participation very much [13], but there is variation across countries. In Niger, where women's engagement in formal employment is relatively low overall, ending child marriage would result in very small increases in labor force participation for women. But in Bangladesh, the impact is greater – ending child marriage would make women who would otherwise have been child brides 3.5 percent more likely to enter the labor force. Overall, the simulations suggest that ending child marriage could lead to an increase in labor force participation in six of the 15 countries, and a decrease in nine.

“I got married, I got a selfish husband. I have two children and all their responsibility is upon me. I work on wages day and night. How do I make my children’s future? From where do I fulfil their wishes? I got lot of responsibility at a small age.”

“[Girls] should read and write. But what I consider as a priority is marriage. At 16 years of age, the place of a woman is in the home with her husband and children. If she starts to work she will abandon her family”

QUALITATIVE DATA COLLECTED BY ICRW AND THE WORLD BANK.

However, because of its impact on educational attainment, ending child marriage would generate substantial gains in earnings for women on average. The foregone earnings due to child marriage tend to be large in all 15 countries [14]. This, when combined with larger household sizes due to higher fertility, would have implications for household welfare, as measured through consumption per capita, poverty, or food security.

IMPACTS OF CHILD MARRIAGE ON WORK, EARNINGS, AND WELFARE

Estimated Global Impacts

- Ending child marriage does not typically have large effects on women’s labour force participation.
- Through education, child marriage reduces women’s earnings in adulthood by 9%.
- Ending child marriage could increase national earnings by an average of 1%.
- Child marriage affects household consumption and poverty through larger household sizes and lower educational attainment for girls who marry early and their children.

Sources: [13], [14].

Participation, Decision-Making and Investments

The final domain in which we intended to assess the impacts of child marriage was in regard to household and civic participation, household decision-making and investments. IDue to data limitations, our analysis focused on decision-making, land ownership, knowledge of HIV/AIDS and birth registrations.

To assess the impact of child marriage on women’s decision-making later in life, we constructed an index using variables collected by DHS. These variables pertain to women’s decision-making in regard to health care, household purchases, visits to friends and relatives, and the use of husband’s earnings; women’s ability to refuse to have sex with her husband or to negotiate their husband’s use of a condom; whether they felt a husband was justified in beating his wife under the certain circumstances; and whether they needed their husband’s permission to get medical assistance if needed.

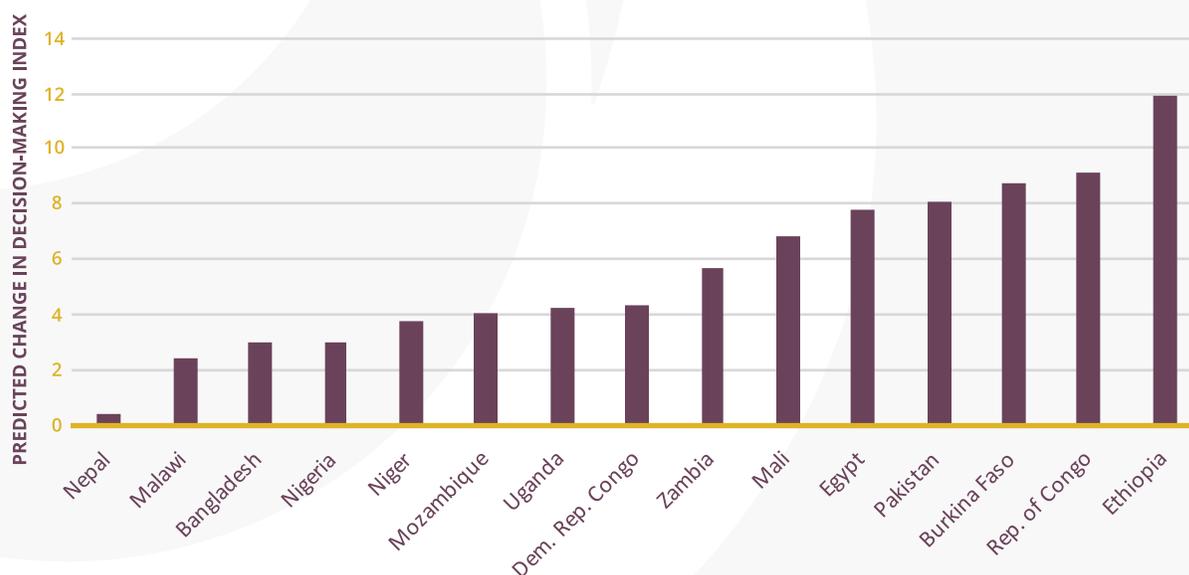
We find that the direct impact of child marriage on women’s decision-making ability is statistically significant for about a third of the countries in the study [15]. While these results do not suggest a large direct effect of child marriage on women’s decision-making ability (which in many countries is relatively limited regardless of age at marriage), our analyses do suggest

“No, I cannot decide. I cannot decide on my children’s education and regarding my family... We have to move according to the husband. He is the master. We don’t have any rights. All the decisions about the home, family, studies of the children are taken by him.”

“A boy from our community showed up and asked for my daughter’s hand... I asked if she was interested in the marriage and if she loved the boy. She was too shy to speak and wouldn’t say a word... After about three days my second wife reported to me that my daughter agreed to marry.”

QUALITATIVE DATA COLLECTED BY ICRW AND THE WORLD BANK.

Figure 4: Impact of Educational Attainment on Decision-Making Index, Secondary Education Compared to No Education



that there may be indirect ways that this relationship may operate. In particular, there is a strong relationship between educational attainment, which is in turn influenced by child marriage, and decision-making. The magnitude of this effect is quite large, especially for secondary education, as Figure 4 demonstrates. Thus, through curtailing girls' educational attainment, child marriage is very likely to reduce women's decision-making ability significantly later in life. It should be noted however that only a minority of the girls marrying early would have been able to complete a higher level of education, so those indirect effects would not be observed across the board.

In terms of the other outcomes examined for this domain, child marriage is associated in most countries with an increase in the likelihood of land ownership [16], but is not directly associated with lower knowledge about HIV/AIDS [17] or a lower probability that children will be registered at birth. In the case of the latter two outcomes [18], both may well be indirectly influenced again through the reduced educational attainment of child brides.

IMPACTS OF CHILD MARRIAGE ON DECISION-MAKING AND OTHER IMPACTS

Estimated Global Impacts

- Child marriage may affect women's decision-making ability directly, as well as through education.
- Child marriage is associated with an increase in the likelihood of land ownership.
- Child marriage is not associated with a reduction in women's knowledge of HIV/AIDS in adulthood.
- Child marriage is not associated with a reduction in the rate of birth registrations for young children.

Sources: [15], [16], [17], [18].

THE COSTS OF CHILD MARRIAGE

While providing a monetary valuation of all the costs associated with child marriage is not feasible, we estimate the costs for some of the largest impacts resulting from the practice, using the analyses presented above as the basis. We estimate either the costs that result from child marriage or, alternatively, the benefits that would be reaped through ending the practice. We focus on the costs incurred through the effect of child marriage on fertility and population growth, children's health, and education and earnings, as these are the areas where the largest impacts were observed. We estimated both the immediate gains that would result from ending child marriage and those accruing by 2030, allowing us to account for some of the cumulative effect of many of the costs or benefits over time. We only take into account a limited range of impacts and costs, but the impacts we consider are those likely to have the largest economic costs. A number of assumptions are made in calculating these costs, including in some cases discount rates. Overall, the estimates provide only an order of magnitude of the size of costs rather than precise estimates – they may well overestimate or underestimate true costs.

For some of the impacts, we provide global cost estimates over time, taking into account data for many countries. Our analyses demonstrate that the economic benefits of ending child marriage are very significant. The largest of these benefits results from the impact that child marriage has on fertility and population growth. Because child marriage is associated with higher overall fertility, its elimination would lower population growth rates, particularly in countries where a child marriage is prevalent. This, in turn, has the effect of increasing per capita GDP, as resources would be distributed among a smaller pool of people than would be the case if child marriage continued at current levels. The potential annual benefits would be very large. If child marriage had ended in 2015, the estimated benefit by 2030 globally could be on the

order of \$566 billion globally (in purchasing power terms). The distributional effects of these benefits would be quite positive, disproportionately reaching poorer households and countries.

Our analyses suggest that the annual welfare gains from ending child marriage in Niger alone could reach \$1.7 billion in the year 2030, solely from the effect of reducing fertility. In Ethiopia, the equivalent benefit would be even larger at \$4.8 billion, while in Nepal this would be almost \$1 billion.

Ending child marriage would not reduce national rates of under-five mortality and stunting dramatically, but a large number of children would nevertheless survive at least until their fifth birthday and many more would avoid stunting. The benefits from saved lives and children not being stunted are obviously not primarily monetary, but with all necessary caveats, monetary values can be associated with both avoiding child mortality and stunting. Globally, the estimated annual benefits from ending under-five mortality and stunting would be up to \$98 billion by 2030.

For other costs, we restrict our analysis to countries for which we have done detailed analysis. We considered first lost earnings associated with child marriage, in large part due to women's lower educational attainment. For the 15 core countries considered in the analysis, taking the year 2015 as an example, we estimate that losses in earnings due to past child marriages would be on the order of \$26 billion [14]. In Bangladesh for example, ending child marriage could have generated close to \$4.8 billion annually in additional earnings and productivity. In Nigeria, the annual cost of child marriage as a result of lost earnings and productivity would have been roughly \$7.6 billion

Finally, budget savings can be reaped from the lower population growth that would result from ending child marriage. We find that the governments of 18 of the countries – many of which are among the most affected by child marriage – could save up to \$17 billion per year by 2030 just from the savings related to providing public education [21].

The overall impacts at the country level are large. In Niger, the country with the highest prevalence of child marriage in the world, for example, eliminating child marriage in 2015 would have led by the year 2030 to annual benefits of up to \$1.7 billion in additional welfare, \$327 million in savings to the education budget, \$34 million through reduced infant mortality, and \$8 million through reduced child stunting. In addition, earnings today are \$188 million below what they could have been without child marriage, and these losses would be even bigger over time if child marriages continue. Altogether, failing to end child marriage would cost the country billions of dollars.

In sum, the scale of potential economic benefits that would accrue from ending child marriage is high. We estimate that child marriage could cost the global economy trillions of dollars between now and 2030. In some countries, eliminating child marriage could result in gains that are fairly large relative to the size of their economies, especially where child marriage remains common.

ORDER OF MAGNITUDE OF THE BENEFITS FROM ENDING CHILD MARRIAGE – SELECTED GLOBAL ESTIMATES

	Annual Benefit in 2015	Annual Benefit in 2030
Welfare benefit from reduced population growth	\$22 billion	\$566 billion
Benefit from reduced under-five mortality	\$42 billion	\$82 billion
Benefit from reduced under-five stunting	\$9 billion	\$16 billion

Sources: [19], [20]. Note: Estimates in purchasing power parity.

CONCLUSION

The analyses undertaken in this study provide strong evidence that child marriage has a wide range of negative impacts on the wellbeing of girls, their households and countries. While the primary motivation for ending child marriage should remain the alleviation of suffering and life prospects of girls who marry early, it is clear that the practice imposes very significant economic costs at all levels ranging from the individual to the national. These cost estimates are only orders of magnitude given the many assumptions involved, and they are therefore tentative in nature, but they are sufficiently large to suggest that ending child marriage should be a key component of poverty alleviation and development strategies. Ending child marriage would also have a wide range of benefits to countries through improving the status of women and potentially interrupting intergenerational cycles of poverty and disadvantage. Our hope is that the demonstration of these costs will help to generate greater and more focused investments to end child marriage, allowing countries to more fully reap the potential benefits from the demographic dividend, maximize the potential of their citizens, and improve wellbeing for all.

While this study does not explicitly focus on interventions and policies to prevent child marriage, the results provide very strong support for the promotion of girls' education, which protects girls from marriage while providing them with the tools to lead healthier, more productive and empowered lives. A number of promising interventions are being implemented in all of the countries included in this study, each of which have the potential to add to our understanding of what works in terms of ending child marriage. Investing in more of these interventions, documenting their impacts and implementing policies and programs aimed at empowering youth, and particularly girls, will be key to ensuring a better future for both girls and countries as a whole.

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