

Economic Impacts of Child Marriage: Preliminary findings from analyses of existing data

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Key Messages:

- The joint ICRW-World Bank study of the economic impacts of child marriage is still underway, but initial findings indicate that, in addition to the harmful effects on girl's health, education, rights and wellbeing – the economic impacts of child marriage from the individual to the national levels are likely to be very significant.
- In particular, the cost of child marriage through just two pathways – increased population growth and reduced educational attainment - is very large.
- In Niger, as just one example, preliminary estimates indicate that - through reduced population growth, increased educational outcomes for girls and budget savings for the provision of education alone - eliminating child marriage could, between years 2014 to 2030, lead to benefits valued at more than \$25 billion
- While our research thus far has considered multiple pathways, cost estimates have been computed mostly for welfare costs from population growth, earnings losses for women and girls, and education budget savings by governments. Recognizing that these are only some of the economic impacts of child marriage, the magnitude of the overall costs is likely to be very high
- Much more research will be undertaken in the coming months, but given what we already know, global leaders—particularly finance ministries and donors—should invest in ending child marriage as not only the right thing to do, but also a strategic investment in current and future economic and human development.



Welfare costs from population growth, education spending by governments, and earnings losses for women and girls are only some of the economic costs of child marriage considered to date, but our estimates show that the magnitude of these combined costs is very high. In Niger alone, these costs are valued at more than \$25 billion from now to 2030.

Each day, child marriage—marriage below the age of 18—affects more than 41,000 girls. Child marriage has been linked to a number of health risks, higher fertility, lower educational attainment and lower lifetime earnings, among other negative outcomes. These impacts affect not only the girls who marry early, but also their children, their communities and societies as a whole.

An increasing recognition of these negative impacts by policymakers worldwide explains why, in the vast majority of countries, child marriage is now prohibited by law. It also explains why the elimination of child marriage is part of the newly adopted Sustainable Development Goals, or *Agenda 2030*. But

despite a growing acknowledgement of the harms of child marriage, not nearly enough is being done to end this practice. As a field, we need a greater understanding of what, across diverse contexts, drives families, communities, and, in some cases, girls themselves, to support child marriage. To help end the practice and advance the rights of girls to a healthy, happy childhood where they can grow and learn, we need a better understanding of the impacts and costs of child marriage to girls, families, communities and nations. Specifically, in order to promote evidence-based investments by governments and donors to end child marriage, rigorous data on the economic impacts of child marriage, as well as the benefits of ending the practice, are required.



This brief reports on preliminary results from a new comprehensive research program led by the International Center for Research on Women (ICRW) and the World Bank on the economic impacts of child marriage. The brief explains first the conceptual framework that informs the study. It summarizes some of the main empirical results from the analysis undertaken to date. A large number of publications related to the project will be made available on the project’s website: www.costsofchildmarriage.org.

Conceptual Framework

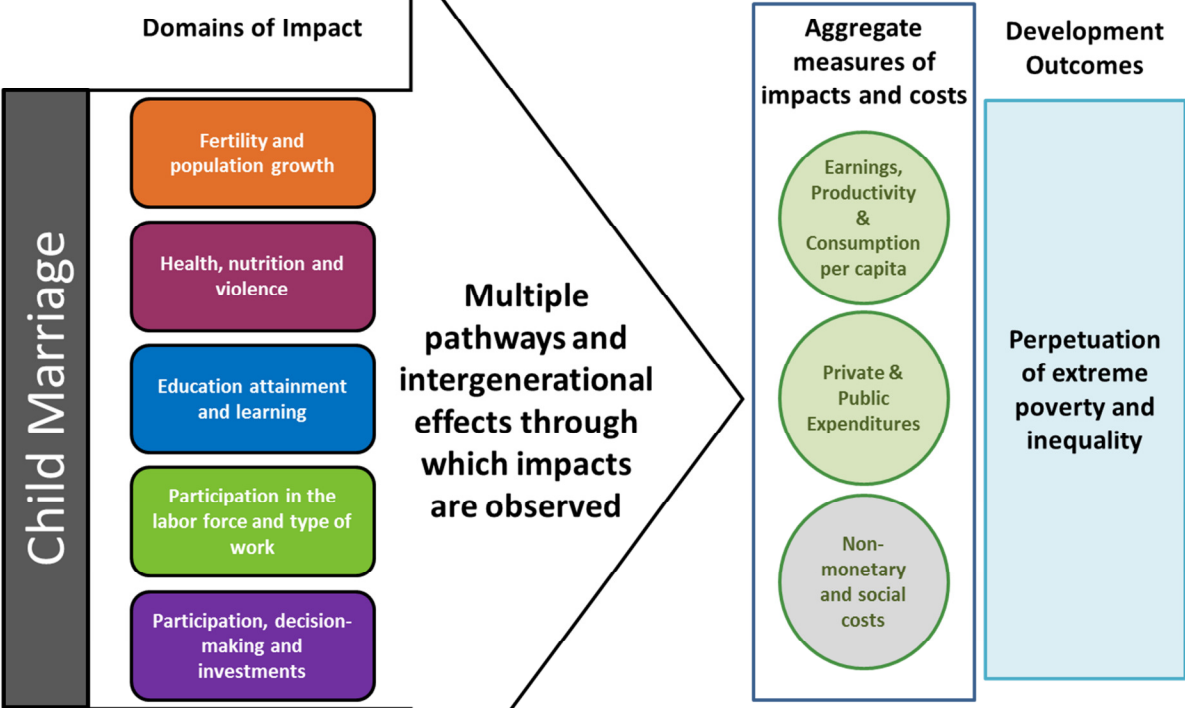
Child marriage has decreased in the developing world, but only very slowly. In the past 30 years, the incidence of child marriage decreased only 11 percentage points across a set of 60 countries [1]. Some countries where the practice is especially widespread, such the Sahel region of Africa, have seen even more limited declines. As UNICEF reported in 2014, unless significant and immediate action is taken, some 150 million girls will be married before they turn 18 over the next decade [2].

ICRW and the World Bank undertook an extensive review of the literature, which, along with analyses of existing datasets over the past year, have contributed to the development of a

framework that informs our study [3][4]. As shown in Figure 1, the conceptual framework considers five main domains of impact of child marriage: (i) Fertility and Population Growth; (ii) Educational Attainment and Learning; (iii) Labor Force Participation; (iv) Participation, Decision-making and Investments; and (v) Health, Nutrition and Violence.

Each of these domains may have mutually reinforcing effects, and the various impacts can take place through multiple pathways. In terms of measurement of costs, the various types of impacts are measured at the national level through three different types of costs or benefits related to (i) Earnings, Productivity and Household Consumption per Capita; (ii) Public and Private Expenditures (for example, on education and health); and (iii) Non-monetary and Social Costs (such as under five mortality). Finally, these various impacts and associated costs can lead to broader consequences at the national level in terms of the eradication of extreme poverty as well as the promotion of shared prosperity, in accordance with Agenda 2030, as part of a development process that benefits poorer and more vulnerable groups in society.

Figure 1: Conceptual Framework



Source: Authors. See also [3] for a literature review.

Research Design

This study is implemented in two phases. The first phase (Phase 1) is based on an analysis of existing data for multiple countries. This brief reports on preliminary results from Phase 1. In Phase 2, we will undertake three in-depth country studies, including with the collection of new household survey and qualitative data, in order to provide a more nuanced and comprehensive account of the economic impacts and costs of child marriage.

The approach used for measuring impacts and associated costs is “bottom up,” in that the analyses are first carried out at the level of individual countries. This is important and necessary, as the impacts of child marriage tend to vary substantially between countries, both in

terms of the nature of the impacts and their magnitude. We then aggregate results from the country level to provide broader estimates for multiple low and middle income countries affected by the practice.

Box 1 describes the empirical results generated in Phase 1 thus far [4]. For some topics, data have been analyzed for two dozen countries or more. For other topics, data have been analyzed only for a handful of countries. As Phase 1 research will continue throughout the project, even as Phase 2 gets underway, the results presented here should be considered preliminary. Further, it is important to note that this brief focuses only on a subset of topics along each of the five domains of impact identified in Figure 1.

Box 1: Principal Topics Considered during Phase 1 Country Analysis

The research methodology adopted for Phase 1 is based on both the richness, but also the limits of existing data [4]. Country-level briefs and associated papers are being prepared for two dozen topics, including: (1) Profile and trends in child marriage; (2) Geography of child marriage, using census data; (3) Patterns of child marriage and local development; (4) Impact of child marriage on fertility; (5) Impact of child marriage on population growth; (6) Welfare costs for household of child marriage through population growth; (7) Profile and trends in early childbirth; (8) Impact of early childbirth on under five malnutrition; (9) Impact of early childbirth on under five mortality; (10) Impact of early childbirth on maternal health; (11) Impact of child marriage on educational attainment; (12) Child marriage as a reason for dropping out of school; (13) Impact of child marriage on labor force participation; (14) Impact of child marriage on women’s earnings; (15) Impact of child marriage on decision-making within the household; (16) Impact of child marriage on contraceptive use; (18) Impact of child marriage on intimate partner violence; (19) Impact of child marriage on public spending for education; (20) Impact of child marriage on public spending for health; (21) Legal and institutional aspects of child marriage; (22) Household perceptions regarding gender roles and child marriage; (23) Child marriage and private spending for education; (24) Child marriage and private spending for health; and (25) Typology of programs for adolescent girls.

Domains of Impact

Fertility and Population Growth

Women who marry early tend to have children earlier, and also have more children over time than those who marry later. In Nigeria, for example, girls who marry early tend to have, on average, 1.4 more children over their lifetime than girls who marry after the age of 18 [5]. For the country as a whole, eliminating child marriage would have reduced the total fertility rate by about 10 percent at the time of the latest DHS survey (2013), a fairly large shift.

More generally, estimates of the impact of child marriage on fertility for more than a dozen countries suggest that eradicating child marriage in these countries could reduce the number of births women have by 0.9 to 1.5 over their lifetime, depending on the country [6].



Smaller family sizes resulting from ending child marriage would lead to increased per capita income at the household level. At the national level, as a result of slower population growth, public budgets, particularly in fast growing countries, would face less stress.

In Niger, annual rates of population growth could be reduced by a third of a percentage point or more each year if child marriage were eliminated and there were no increases in births outside of marriage by adolescent girls.

By 2030, this slowing could lead to a reduction in the total population if Niger of two million people, which would have significant outcomes for the population's standard of living, as well possibly for the quality of public services.

Across sub-Saharan Africa, each year of early marriage reduces the probability of secondary school completion by about four percentage points. These impacts are even larger in other regions.

Because child brides have a higher number of children, child marriage contributes to population growth. In some countries, the impacts are small, but in those with a high incidence of child marriage, the impacts can be quite large. In the case of Niger, for example, annual rates of population growth could be reduced by a third of a percentage point or more *each year* if child marriage were eliminated and there were no increases in births outside of marriage by adolescent girls. Between 2014 and 2030, the cumulative reduction in population growth that would result from ending child marriage would be 5.7 percent, leading to a reduction in the population of two million people by 2030 [7]. Globally, based on preliminary estimates for 108 countries, the reduction in population growth that could result from the elimination of child marriage (assuming no additional births to adolescents), could be up to 1.8 percent, or about 120 million people, by 2030 [8]. As discussed

analyses indicate that child marriage contributes to increases in under-five mortality rates by 3.5 percentage points on average, and by five percentage points for malnutrition (i.e., stunting) for a sample of 12 countries [9].

However, because only a small share of children are born to mothers younger than 18 at the time of delivery, child marriage contributes only in a relatively small way to national measures of under-five mortality and malnutrition. Even in countries with a high incidence of child marriage and early childbirth, typically, only five to seven percent of children are born to mothers younger than 18. As a result, for every 100 children who died before the age of five or have been diagnosed as malnourished, only a handful can be considered as having died or been malnourished due directly to the impact of early childbirth and child marriage [10]. This still represents many children, but it would be erroneous to assume that ending child marriage would lead to a dramatic reduction of national rates of under-five mortality or malnutrition.

Work addressing the impacts of child marriage on maternal health, as well as on violence (which has clear implications for health), is underway. There are other health considerations, such as the mental health of child brides, which have not yet been accounted for in this phase of the research.

Educational Attainment and Learning

Two different approaches tend to be used to estimate the impact of child marriage on educational attainment. The first relies on reasons mentioned by parents, school principals or teachers in surveys for why their children have dropped out of school [11]. Using this approach, results from the project suggest that in several African countries with a relatively high incidence of child marriage, child marriage, as well as early pregnancies, tend to account for 15 to 30 percent of drop-outs for girls in secondary school [12], but in some countries, data from school principals suggest the impact may be even higher [13].

The second approach relies on regression techniques with instrumental variables. Prior research indicates that each additional year of delay in the age of marriage increases schooling by 0.22 years and the likelihood of literacy by 5.6 percentage points [14]. Our analyses finds that, in sub-Saharan Africa, each year of early marriage reduces the probability of secondary school completion by about four percentage points [15], although the impact is larger in many countries.



Ending child marriage would lead to increased earnings for women, largely through higher educational attainment.

below, such reductions in population growth would result in massive economic gains for households, and especially the poor.

Health, Nutrition, and Violence

While the impact of child marriage on fertility is very high, its impact on child health, as measured through under-five mortality and malnutrition, is comparatively smaller. It is important to explain why this is the case. The focus here is on the impact of early childbirth, which is linked directly in most developing countries to child marriage. The risk of under-five malnutrition and the risk of death increase substantially when a child is born to a mother below 18 years of age, as compared to those born to older mothers. Specifically, our

In other regions, such as Latin America and the Caribbean [16] and South Asia [17], the average impacts also tend to be higher, in part because educational attainment itself is higher. Less research is available on the impact of child marriage on learning, which matters more than attainment [18].

Labor Force Participation

The impact of child marriage on labor force participation is not clear a priori. Child marriage leads to both a higher number of children in the household and lower educational attainment, both of which may reduce labor force participation in many (but not all) settings. Further, as noted below, in many cases, child brides' mobility is restricted by husbands or in-laws, so their ability to contribute economically outside of the home may be limited. At the same time, child marriage is also associated with poverty, and many poor girls and women may simply have to work in order for the household to survive. Depending on the context, child marriage may thus lead labor force participation to increase or decrease, with a variety of causal factors at play. This dichotomy is confirmed by empirical work for more than a half dozen countries, which finds that, in some countries, the impact of child marriage on the likelihood for women of working is positive, while in others, it is negative [19]. However, by reducing educational attainment, child marriage is indirectly associated with diminished earnings, as well as reduced likelihood of formal employment.

Participation and Decision-making

A woman's capacity for choice depends on her agency, access to resources (material, human, or social), and past achievements, which are foundations on which future agency is built [20]. Child marriage clearly has an impact on resources, for example by contributing to girls' premature school drop-out and limitations on learning. Child marriage also affects past

achievements (as well as capabilities), as is the case when a lower level of education reduces the types of employment that women have access to. Finally, child marriage may also affect agency, if it reduces girls' and women's decision-making ability in the household. However, the magnitude of these effects is not necessarily clear.

Analysis of existing data suggests that women who married as children are at a slight disadvantage versus those who married later in many aspects of decision-making, but differences between the two groups tend to be small, partly because child marriage typically takes place in contexts where girls and women are already disempowered. Indeed, controlling for other factors that may affect agency, child marriage often does not have a direct statistically significant impact on agency, given prevailing gender roles. It does, however, have indirect negative impacts through reductions in educational attainment, among others. Overall, preliminary findings from existing data suggest that the gains in agency from the elimination of child marriage alone would probably be fairly small, or the order of one or two points on a scale of 100 [21].

Aggregate Cost Estimates

As outlined in Figure 1, the various impacts of child marriage generate aggregate costs for communities and countries. At this stage of the research, detailed empirical work has been conducted on three main costs: (1) The welfare cost of child marriage for households, through larger family size and population growth; (2) The earnings losses attributed to child marriage, due to the combined effects on labor force participation and earnings; and (3) The budget savings that could be achieved by governments in regard to the provision of basic services, primarily through reduced population growth by ending



Assessing the economic impacts of child marriage on women's decision-making ability and on violence is challenging, given limitations of available data. This question will be explored further in the second phase of this project.

Box 2: Informing Programs and Policies to Reduce Child Marriage

An example of an innovative project to help reduce child marriage is the Sahel Women's Empowerment and Demographic Dividend (SWEDD) project. The SWEDD is a regional operation managed by the World Bank to support six West African countries to implement programs and policies to empower women and reap the benefits of the demographic dividend by accelerating the demographic transition in the Sahel region. The participating countries are Burkina Faso, Chad, Cote d'Ivoire, Mali, Mauritania, and Niger. The ICRW-World Bank team is working to ensure that findings from this study help inform the programs that countries put in place through the SWEDD. On November 4-6, The ICRW-World Bank team organized a three day training workshop for 100 government staff and other participants from the six SWEDD countries to share findings from the study, especially with the objective of scaling up empowerment programs for young women and girls.

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Estimates of the impact of child marriage on health care costs are forthcoming, but could be significant.
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The economic costs of child marriage are large, but ending this harmful practice is achievable.

Evidence gives us some guidance on ways to reduce the practice, but more investment in research, evaluation, programming and policy development and implementation is urgently needed.

child marriage. Our projections typically assume an immediate end to child marriage, and consider welfare gains and cost savings between 2014 and 2030, in order to align with the end of *Agenda 2030*. The magnitude of these three types of costs and benefits is not the same, and it is useful to illustrate them first with a country example.

Consider the case of Niger, which has the highest child marriage prevalence rate in the world. The benefit that would accrue from lower population growth with the elimination of child marriage would be very large. The increase in gross national income (GNI) from ending child marriage is estimated at 0.4 percent today. This would increase to 5.7 percent of GNI in 2030, or (based on recent patterns) more than half of annual net official development assistance flows. The implicit value of these benefits in terms of GNI could amount to US \$19 billion in purchasing power parity (PPP) terms between 2014 and 2030, and the benefits would accrue principally to the poor [22].

Ending child marriage would also increase earnings for women, especially through higher educational attainment. Estimates based on wage regressions and simulations for half a dozen countries range from quarter to half a percent of the earnings base in Zambia and the Democratic Republic of Congo, to 1.7 percent in Niger and Ethiopia. These increases could generate substantial gains. Preliminary estimates for Niger suggest that these gains, valued as a share of household consumption, could reach U.S. PPP \$6 billion between 2014 and 2030 [23].

Ending child marriage would also generate savings for public budgets because of the smaller population to be served. The cost of reaching the goal of universal secondary education, for example, would be reduced by about six percent between now and 2030, due to having fewer children in the classroom. Using UNESCO's estimated cost for Niger to achieve this target, we find that ending child marriage immediately could generate savings of US \$1.8 billion from today to 2030 [24].

These figures are large, but based on a number of simplifying assumptions. Phase 2 of the study will entail new data collection for three countries and help validate and test the various pathways described above and the preliminary cost estimates suggested in Phase 1 [25]. At this stage of the research, the estimates summarized here help to give a sense of the potential economic gains from ending child marriage, or the implicit

cost of allowing the practice to continue unabated.

Past research at the global [26] and country [27] levels gives us some guidance on the types of interventions that could help end the practice. And increasingly, we are seeing increased programming and resources dedicated to ending this harmful practice. But far more investment must be made in research and evaluation that to help understand what works best across diverse contexts, as well as in new programs and policy reforms. It is our hope that this research project will inform such investments. (See Box 2 for an example of how the project is already informing these investments).



Conclusion

The findings presented in this brief should be considered preliminary, as our study will not be complete until we are able to finalize analyses from both phases of work. But these preliminary analyses suggest quite strongly that, in addition to harmful effects on girls' health, education, rights and wellbeing, the economic impacts of child marriage, from the individual to the national levels, are very large. In addition, most of the benefits from ending child marriage would accrue to the poor, who are almost always the most likely to have higher rates of child marriage. Ending child marriage would help greatly to eradicate extreme poverty and promote shared prosperity.

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