



The economic
impacts of
child marriage

ECONOMIC IMPACTS OF CHILD MARRIAGE: CHILD HEALTH AND NUTRITION BRIEF



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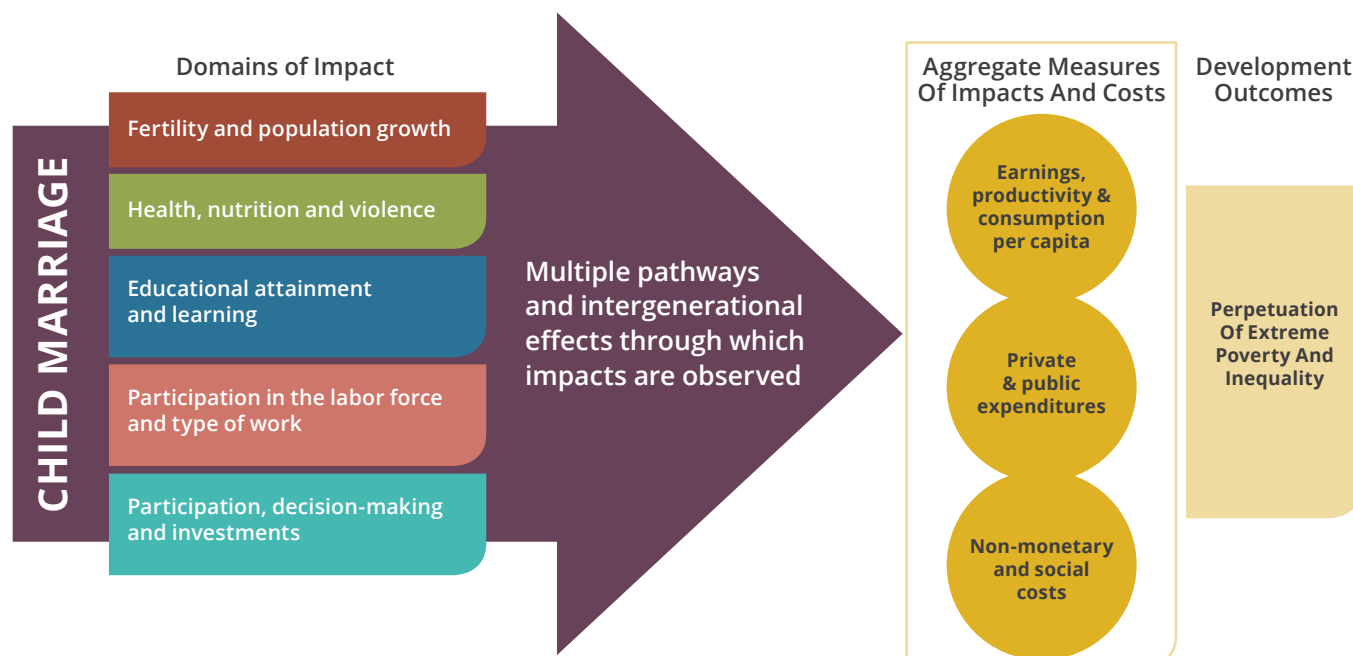
OVERVIEW

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. The conceptual framework that guided our work follows:

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."



This brief summarizes results from an analysis of the impacts of child marriage on two health outcomes - under-five mortality and stunting - for young children. For the purposes of this brief, we focus on the impact of child marriage through early childbirths, as this is the mechanism through which child health and nutrition outcomes are most directly affected. There is a close correlation between child marriage and early childbirths in most countries - at a global level, six out of seven early childbirths take place within the context of child marriage. The brief does not include analyses for other aspects of child health that may also be affected by child marriage, nor does it consider costs that may be incurred by health systems as a result of poor child health. This brief and selected other publications from the study can be found at:

www.costsofchildmarriage.org

IMPACT OF CHILD MARRIAGE ON UNDER-FIVE MORTALITY AND STUNTING

Adolescent girls face serious health risks when giving birth at an early age. These health effects extend beyond the girl herself and can impact her children in several ways. Overall, infant mortality and morbidity among children born to mothers under the age of 18 is higher as compared to those born to older mothers. Children of adolescent mothers are also more likely to have low birth weight and have poor nutritional status when they are born and throughout their childhood. These children are further disadvantaged because women married as children tend to have less spacing between births, as well as more children over their lifetimes than those married later, which can also negatively impact child health.

In our study, we analyze the impact of early childbirths (defined here as births to a mother younger than 18) on under-five mortality and malnutrition using Demographic and Health Surveys (DHS) for 15 countries. The focus is on the impact at the margin of early childbirths on the probability that a child will die before age five and on the probability that

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 Wodon (2017).

a child will be stunted. Following standard conventions, a child is considered stunted if s/he has a height more than two standard deviations below the median reference height for their age. Stunting often results from persistent insufficient nutrient intake and infections. It may lead to delayed motor development and poor cognitive skills that can affect school performance as well as productivity and earnings later in life.

Table 1 provides the key results from our analysis. Our results indicate large and statistically significant impacts of early childbirth on under-five mortality and stunting in a majority of the countries. In Niger, for example, controlling for a wide range of factors, when a child is born of a mother younger than 18, the risk of under-five mortality (represented in the upper part of the table) increases by 3.0 percentage points, while the risk of under-five stunting (in the lower part of the table) increases by 6.9 percentage points.

When aggregating to the national level, these impacts are smaller because proportionally few children are born of mothers younger than 18, as compared to all children born in a country. Consider again the case of Niger. Nationally, the elimination of early childbirths is estimated to reduce under-five mortality by 0.22 percentage points, while stunting would be reduced by 0.45 percentage points. Said differently, as shown in the last column of Table 1, given prevailing rates of under-five mortality, for every 100 children who die before the age of five in Niger, roughly 2.7 are likely to die directly because of an early childbirth. Similarly, for every 100 stunted children, one is likely stunted because of the impact of early childbirth (Table 1).

“*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.

TABLE 1: INCREASE IN UNDER-FIVE MORTALITY AND STUNTING DUE TO EARLY CHILDBIRTHS

	Marginal Impact (%)	National Impact	National Reduction vs. Baseline (%)
Under-five Mortality			
Bangladesh	NS	-	-
Burkina Faso	6.0	0.30	3.4%
Dem. Rep. Congo	3.9	0.24	3.4%
Egypt	NS	-	-
Ethiopia	3.8	0.20	3.0%
Malawi	NS	-	-
Mali	6.9	0.61	8.7%
Mozambique	4.8	0.48	6.9%
Nepal	NS	-	-
Niger	3.0	0.22	2.7%
Nigeria	4.8	0.34	4.0%
Pakistan	NS	-	-
Rep. of Congo	NS	-	-
Uganda	4.7	0.27	4.1%
Zambia	3.4	0.27	5.0%
Under-five Stunting			
Bangladesh	5.2	0.75	1.8%
Burkina Faso	NS	-	-
Dem. Rep. Congo	7.2	0.32	0.7%
Egypt	7.5	0.17	0.8%
Ethiopia	NS	-	-
Malawi	NS	-	-
Mali	10.3	0.74	1.9%
Mozambique	7.8	0.57	1.3%
Nepal	9.5	0.64	1.6%
Niger	6.9	0.45	1.0%
Nigeria	4.3	0.44	1.2%
Pakistan	NS	-	-
Rep. of Congo	NS	-	-
Uganda	22.0	1.03	3.1%
Zambia	4.7	0.25	0.6%

Sources: Onagoruwa and Wodon (2017a, 2017b).

Note: NS = Not statistically significant at the 10 percent level.

Using results from these estimated impacts, along with extrapolations for other countries, we conducted simulations to estimate the number of children who could survive beyond the age of five and the number of children who could avoid stunting globally if early childbirths were avoided, as well as if child marriage were to end, taking into account the fact that not all early childbirths can be attributed to child marriage.

Our results suggest that over the time period of 2016 to 2030, an estimated 2.1 million children could survive past age five if child marriage was eliminated entirely, while 3.6 million children could avoid stunting. The estimates are larger when ending all early childbirths, including those not due to child marriage. The estimates in Table 2 cover the cumulative effects over a 15-year period. Hence, on average, 140,000 children's lives could be saved on a yearly basis if child marriage was eliminated, and 167,000 each year if all early childbirths were to end. Similarly, some 240,000 children a year would avoid being stunted if child marriage were to end immediately, and 290,000 if early childbirths were eliminated.

TABLE 2: NUMBER OF CHILDREN AVOIDING DEATH BY AGE FIVE OR AVOIDING STUNTING, 2016 TO 2030

	Number of Children (Millions)	
	Not Dying	Not Stunted
Ending child marriage	2.1	3.6
Ending early childbirth	2.5	4.4

Source: Wodon (2017b).

ECONOMIC IMPACTS OF CHILD MORTALITY AND STUNTING

For children and for their families, the cost of lives lost or stunting are not primarily economic. At the same time, understanding the economic costs of child marriage and early childbirths on under-five mortality and stunting may be useful for pursuing policy changes to end child marriage and early childbearing. We used the following assumptions to estimate these potential costs:

- ➔ *Cost of lives lost:* One of several approaches used in the literature to estimate costs consists of valuing a child's life in terms of GDP per capita. Acknowledging that this implicitly values a life in a poorer country at a lower value than in a richer country, this is the approach followed here.
- ➔ *Cost of stunting:* Research suggests that stunted children are likely to have lower earnings in adulthood, with losses typically estimated at 20 to 25 percent. Therefore, the benefits from avoiding stunting are costed based on expected future GDP per capita, multiplied by an approximate share of wages in GDP and the share of wages lost due to stunting.
- ➔ *Discount rates:* Discount rates are needed to value future incomes. The choice of discount rate affects valuations, and it is good practice to conduct estimations for multiple discount rates. For this analysis, we apply the commonly used discount rate of five percent.

Table 3 provides the results of our analysis in terms of the economic benefits that would result from a reduction in under-five mortality and stunting. We consider the impacts of both ending child marriage, as well as ending all early childbirths. It is important to note that these estimates should not be treated as precise, given that they depend on both a range of assumptions and on econometric estimates that have standard errors. Regardless of these limitations, these estimates provide an idea of the potential magnitude of costs associated with child health as a result of child marriage and early childbirths.

Our estimates indicate that eliminating child marriage would lead to annual economic benefits from the reduced deaths of children in the amount of \$41.6 billion in 2016 and \$81.6 billion in 2030 (in purchasing power parity terms). The benefits from ending early childbirths are slightly higher because some early childbirths take place outside of marriage. The increase over time in benefits is mainly due to the higher value placed on each life saved as GDP per capita rises due to economic growth. For the reduction in stunting, the benefits from ending child marriage are valued at about \$9.1 billion in 2016, rising to \$15.8 billion in 2030.

TABLE 3: GLOBAL ANNUAL BENEFITS FROM REDUCED UNDER-FIVE MORTALITY AND STUNTING, 2016 AND 2030

	2016	2017
Reduced Mortality (\$ Billion, purchasing power parity)		
Ending child marriage	41.6	81.6
Ending early childbirth	46.2	90.2
Reduced Stunting (\$ Billion, purchasing power parity)		
Ending child marriage	9.1	15.8
Ending early childbirth	9.7	19.1

Source: Wodon (2017b).



CONCLUSIONS

Child marriage and early childbearing have significant implications for the health of the children born of young mothers. Econometric analysis suggests that in many countries, children of mothers younger than 18 are more likely to die by age five or be stunted than children of mothers older than 18, even after controlling for other factors. While national rates of under-five mortality and stunting would not dramatically change if child marriage and early childbirths were ended, many children would survive past age five or avoid stunting if this were the case.

Our analysis suggests that ending child marriage and early childbirths could bring significant economic benefits to countries through their respective impacts on child mortality and stunting. With a discount rate of five percent, ending child marriage and early childbirths could generate between \$56 billion and \$109 billion in purchasing power parity terms annually in benefits due to reductions in stunting and under-five mortality. This analysis thus provides a strong economic rationale for investing in programs and policies to end child marriage and thereby improve outcomes for young children.

REFERENCES

- [1] Onagoruwa, A. O. and Q. Wodon (2017a). Impact of Early Childbirth on Under-five Mortality across Multiple Countries. Education Global Practice. Washington, DC: The World Bank.
- [2] Onagoruwa, A. O. and Q. Wodon (2017b). Impact of Early Childbirth on Under-five Malnutrition across Multiple Countries. Education Global Practice. Washington, DC: The World Bank.
- [3] Wodon, Q. (2017a). Estimating the Economic Impacts and Costs of Child Marriage Globally: Methodology and Estimates. Education Global Practice. Washington, DC: The World Bank.
- [4] Wodon, Q. (2017b). Global Cost of Under-five Mortality and Malnutrition Due to Child Marriage. Education Global Practice. Washington, DC: The World Bank.

The Economic Impacts of Child Marriage project is a collaborative effort by the International Center for Research on Women (ICRW) and the World Bank, with funding from the Bill & Melinda Gates Foundation and the Children's Investment Fund Foundation, and additional support from the Global Partnership for Education. This series of papers is jointly produced by the International Center for Research on Women and the World Bank and is available at www.costsofchildmarriage.org. The findings, interpretations and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations or to members of its Board of Executive Directors or the countries they represent. Citation and the use of material presented in this series should take into account this provisional character. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations and other information shown on any map in this work do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

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Recommended citation: Wodon, Q., N. Onagoruwa, and N. John (2017), *Economic Impacts of Child Marriage: Health and Nutrition for Children of Young Mothers*. Washington, DC: The World Bank and International Center for Research on Women.

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