How Did Conflict Affect Women's Economic Opportunities in Sub-Saharan Africa?

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The authors are grateful to Amb. Melanne Verveer (Executive Director, GIWPS) for her advice and guidance, and to Lucia C. Hanmer (World Bank) and Sonia Bhalotra (Essex University) for serving as external reviewers of this report and providing valuable insights.

Acknowledgments
The authors would like to thank Sarah Rutherford and Evelyn Garrity for their management of production and outreach, and Frances Chen for her excellent research support. Funding for the research and production of this report is made possible by the Bank of America Charitable Foundation.

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Suggested citation: Jeni Klugman and Turkan Mukhtarova. 2020. *How did conflict affect women's economic opportunities in Sub-Saharan Africa?* Washington, DC: Georgetown Institute for Women, Peace and Security (GIWPS).

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Key definitions

Armed conflict: The use of armed force between two parties, of which at least one is the government of a state, resulting in at least 25 battle-related deaths in a calendar year (UCDP/PRIO n.d. a).

Added worker effect: In this study, refers to increases in a woman's labor force participation in response to her male partner becoming unemployed (Woytinsky 1940).

Employment: Includes all people of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit (ILO n.d. b).

Post-conflict period: Refers to the period after conflict when an official peace agreement is in place that marks the end of fighting and violence and when the number of battle-related deaths after the signing of the peace agreement has declined and plateaued. It is based on the Peace Agreements and Battle-Related Deaths databases of the Department of Peace and Conflict Research at Uppsala University and the Centre for the Study of Civil War at the Peace Research Institute Oslo (UCDP/PRIO n.d. c).

Labor force participation rate: The proportion of the country's working-age population that engages actively in the labor market, either by working or looking for work, including self-employed individuals, subsistence farming workers, and informal sector workers; excludes unpaid work leading to the production of goods and services consumed within the household (ILO n.d. a).

Lomé, Togo
A biochemistry professor encourages girls to pursue careers in science

Ensuring women's inclusion and fostering their long-term self-sustainability are essential to a sound recovery following conflict. Our findings can be used for framing policies and strategies to boost women's economic opportunities in the wake of conflict.

Overview

Alongside the dire humanitarian costs, armed conflict poses a range of risks to a country's economic growth and development. Yet, amid violence and destruction, conflict can shift demographics; change people's attitudes about gender roles, spurring rapid societal change; and expand women's economic opportunities.[1] Prior research suggests that in times of conflict, women seek paid work for various reasons, including conflict-related deaths among men,[2] an increase in female-headed households,[3] and changes in the economic opportunities that are available after conflict (for example, petty trade and agricultural labor jobs, which are often more acceptable to women than to men).[4]

In Nepal, women in conflict-affected areas were more likely to be in paid work than women in unaffected areas.[5] A study of Bosnia and Herzegovina, Colombia, Kosovo, Nepal, Tajikistan, and Timor-Leste determined that women's increased participation in economic activities during and after conflict ended was associated with female empowerment, as evidenced by greater bargaining power at home, more participation in household and community decision-making, and higher per capita consumption. However, these shifts may not last. The United States during World War II is a well-known case: the female labor force doubled, but almost half of the female entrants had left the labor market within five years of the end of the war.[6]

Our analysis of female labor force participation and employment trends in six conflict-affected Sub-Saharan African countries (Burundi, Chad, Côte d'Ivoire, Guinea-Bissau, Liberia, and Rwanda) reveals significantly higher labor force participation among women, both in absolute numbers and relative to men's participation, than the average for the low- and lower-middle-income country groups to which they belong. Deeper investigation of Liberia's micro-level data suggests that conflict-related disruptions and shocks to local structures and norms have expanded women's economic opportunities. The predicted employment likelihood rose significantly between 1986 (three years before the 14-year conflict) and 2007 (four years after the end of the conflict) for all Liberian women, but especially among married women.

Although conflict expanded women's economic opportunities in Sub-Saharan Africa, it did not transform or improve the quality of jobs available to them. Employment prospects remained limited by lagging structural transformation, with most women continuing to work in agriculture. Women work largely in subsistence farming, where labor arrangements are mostly informal, meaning that women employed in agriculture were more likely to lack decent working conditions and adequate social security.[7] Women's agricultural work remains undervalued and under-resourced as women continue to face widespread discrimination in the distribution of assets, services, information.[8]

Our findings can be used for framing immediate and long-term policies and strategies to boost women's economic opportunities in the wake of conflict. Ensuring women's inclusion and fostering their long-term self-sustainability are essential to a sound recovery following conflict. To effectively achieve this transition, women must not only benefit from post-conflict reconstruction activities but must also be prominent among the planners, decision-makers, and implementers in all sectors of the post-conflict economy.

Tibiri, Niger
A farmer grows millet as a member of a women's cooperative

This study contributes to the growing literature on the links between armed conflict and economic opportunities from a gender perspective.

1 Why study the links between conflict and women's employment?

Armed conflict has major economic repercussions. The International Monetary Fund estimates that income per capita typically declines about 12 percent during the first five years of conflict,[9] and annual economic growth is around 3 percentage points lower in conflict-affected countries than in other countries.[10]

Yet, even amid violence and destruction, conflict can expand women's economic opportunities, alter attitudes and expectations about gender roles, and spur rapid societal change.[11] As more women join the labor force and engage in paid work, gender attitudes and roles gradually change. There is also evidence that women assume more influential socioeconomic roles and a broader public presence during and after a conflict.[12] These shifts may not last long, however. The United States during World War II is a well-known case: the female labor force doubled during the war, but almost half of the female entrants had left the labor market within five years of the end of the war.[13]

This study contributes to the growing literature on the links between armed conflict and economic opportunities from a gender perspective. It focuses on whether conflict-related disruptions and shocks to local structures and norms can expand and improve women's economic opportunities and on whether any short-term changes are sustained after the conflict ends. We conducted empirical analyses for six conflict-affected countries in Sub-Saharan Africa (Burundi, Chad, Côte d'Ivoire, Guinea-Bissau, Liberia, and Rwanda) for which comparable data were available, with more in-depth analysis for Liberia.

We first review the literature on the links between women's decisions on labor force entry and economic recession and conflict and develop a conceptual framework for analyzing them. Then, drawing on comprehensive open-access data from the International Labour Organization (ILO) and the World Bank's World Development Indicators database, we document trends in women's labor force participation and employment in six conflict-affected Sub-Saharan African countries.

To investigate more closely the factors that influence women's likelihood of being employed before, during, and after conflict, we analyze data for Liberia from Demographic and Health Surveys (DHS)—nationwide surveys with representative samples of women and men.[14] To establish the causal story of exposure to conflict, we use DHS data to inspect a counterfactual case: the employment likelihood, around the same period, of women in Guinea, which did not directly experience conflict. We find that after the conflict ended in Liberia, the likelihood of women's employment rose relative to the likelihood in Guinea, with married women having a higher probability of being employed than single women.

Monrovia, Liberia
A woman works as a midwife

Previous micro evidence confirms that conflict expands women's economic opportunities as women seek work for various reasons; however, there is limited evidence whether conflict improves the quality of jobs available to women and whether the labor market participation effects last in the post-conflict period, the subject of this study.

2 What we know about armed conflict and women's employment: A conceptual framework and literature review

Overall, cross-sectional data suggest that women's labor force participation follows a U-shaped pattern relative to per capita income.[15] The highest rates of female labor force participation are observed in low-income countries, where they average 20 percentage points higher than in middle-income countries and around 15 percentage points higher than in high-income countries.[16]

However, significant variation around the stylized U shape suggests that—beyond average income—social norms, education level, fertility rates, and the structure of economic growth have important roles.[17]

It is also possible that conflict expands economic opportunities for both women and men. A growing body of research casts light on the effects of conflict on women's employment opportunities. Some of the evidence comes from studies of the effects of economic shocks and recessions on women's labor force participation, given that conflicts are typically associated with economic downturns. This is explored later in this section.

A conceptual framework for examining links between conflict and societal change

It is useful to begin with a conceptual framework that outlines the channels through which conflict may affect societies at the individual, household, community, and national levels. These effects can be direct (like killings, human displacement, and physical destruction of assets) or indirect (like changes in local institutional structures, markets, and social norms).[18] Studies also distinguish first- and second-round gender impacts of conflict. Direct first-round impacts include income loss and loss of male workers, while second-round impacts arise as individuals and households adjust to the shocks of conflict in various ways, including through changes in fertility, marriage behavior, and traditional gender roles[19] (figure 1). Adjustments may affect social norms and expectations around gender roles inside and outside the home.

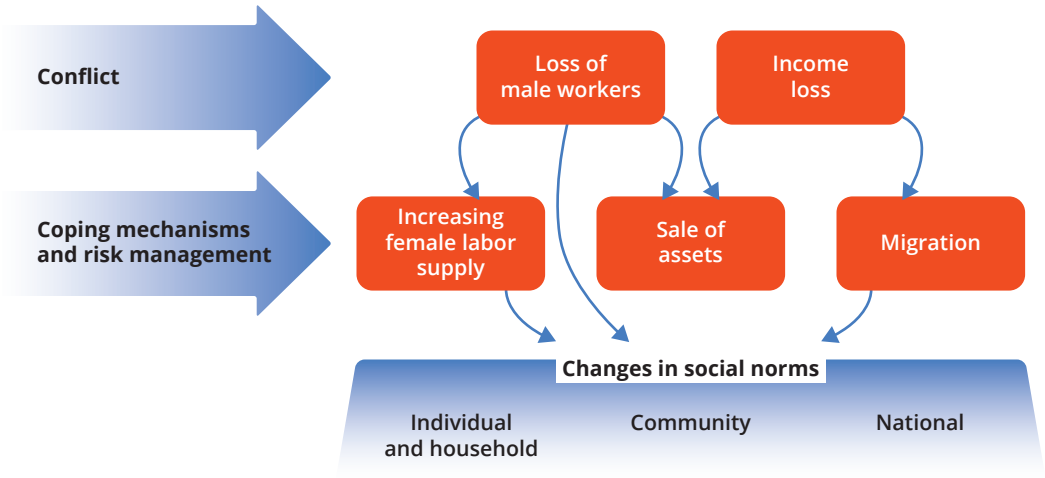
Changes in social norms

In all economies, gender norms strongly influence whether women work outside the home and, if they do, where they work.[20] Traditional gender norms dictate that men are the breadwinners and that women's primary role is in unpaid work and care within the household.[21]

Do conflict and war disrupt these norms? The relaxation of gender norms has been observed in some post-conflict situations where traditional practices changed, even if the change in practice had not yet registered in local perceptions of gender roles.[22] For example, in Sudan between 2000 and 2011, women engaged in additional labor market activities to cope with the conflict, even as both women and men still identified women mainly as mothers and housewives.[23]

Disrupted traditional gender norms during conflict, together with the loss of family members in battle and declining household income, can have a range of effects. Some disruptions are beneficial to women. Their political and civic participation may expand, as in Rwanda.[24] In Indonesia, the Philippines, and Sri Lanka, women in some conflict-affected communities gained more autonomy in their household and greater

FIGURE 1 Conceptual framework showing how conflict can affect women's labor force participation



Source: Authors.

financial independence than women in communities unaffected by conflict. These gains were attributed to women diversifying and intensifying their economic activities during conflict.[25] But effects can also be adverse. In Syria, rates of child marriage among the refugee population were reportedly four times higher in 2017 than pre-conflict national levels.[26]

The persistence and intensity of the effects of conflict on women's lives are also likely to vary according to the conflict's duration, nature, and location, as well as the country's socioeconomic and political context.[27]

Impacts of aggregate economic shocks on women's labor force participation: The added worker effect

Our literature review focuses on women's labor market entry decisions in the context of severe economic recession as well as conflict because declining household incomes are a major feature of both types of disturbance. Several studies have examined economic recessions and the mechanisms through which the loss of a husband's earnings and declining household income and consumption affect women's labor force participation decisions. Other research explicitly examines the effects of conflict on female labor force participation.

Economic research on women's decisions to enter the labor market during a recession typically model the added worker effect (AWE). The AWE model posits that one household member becoming unemployed affects the employment decisions of other household members. For example, in response to a husband losing his job, his wife is predicted to seek more work outside the home because of the household's loss of the husband's income (an exogenous shock to household income).[28] The model also accommodates the possibility that a discouraged worker effect might prevail over the added worker effect at the aggregate level. In a depression, the overall impact of the negative shock on additional workers' participation becomes negative as the depressed economy leads to large-scale job losses.[29]

Violent conflict can also introduce major exogenous shocks that generate the AWE.[30] Although the overall impact is not predictable, women may adjust for men's absence from the household by diversifying and intensifying their economic activities.[31] However, the depressed economic conditions that accompany conflict could limit women's options for additional work.

Evidence from economic recessions

This section highlights the results of studies in developing countries of how the loss of income from a male partner during an economic recession can affect women's labor force participation; the following section looks at the results of studies of the impact of conflict on women's labor market participation.

Studies have found the loss of men's jobs and the economic shocks to households as a result of an economic recession to be associated with women joining the labor force:

- During the 2001 economic crisis in Argentina, wives' labor force participation rose 2 percentage

points on average following their husband's loss of employment.[32]

- Mexican women were more likely to enter the labor force during periods of both economic recession (1994–95) and economic boom (1998–99). However, the response was twice as large during an economic recession.[33]
- Female labor force participation in the Philippines rose during the East Asian financial crisis of 1997–98.[34]
- Of the women who joined Indonesia's labor force during the financial crisis of 1997–98, just 6–13 percent left the labor force once the crisis subsided.[35]

However, the AWE is not consistent across countries and can vary by country income level:

- A study of female labor force participation in 17 middle-income countries found that the AWE for women was mild during the Great Recession of 2008/09, even among less-educated women.[36]
- In the United States, by contrast, women whose husbands stopped working during the recession were twice as likely to increase their work hours and more likely to seek work than women whose husbands remained employed.[37] With three of four job losses during the recession in the United States affecting men, many married women increased their paid work.[38]

At the aggregate level, country-specific factors can offset the AWE or intensify it:

- The magnitude of the AWE depends on what alternate strategies are available to smooth out the loss of household income. Unemployment insurance in the United States[39] and access to credit in Indonesia[40] were alternatives to increased female labor force participation that helped families offset declines in household income, but these options are generally lacking in low-income and conflict-affected countries.[41]
- The AWE was found to be small when both spouses were exposed to similar labor market shocks, as in Argentina.[42]
- Recession effects are likely less pronounced if women are already widely integrated into the labor market, as in Turkey.[43] Studies exploring cross-country differences for industrial countries suggest that the AWE was strong during World Wars I and II and the Great Depression but weakened as women's regular participation in the labor market rose.[44]
- In low-income and lower-middle-income countries, women's lower levels of education and skills, combined with a large informal sector able to absorb additional workers, mean that women tend to fill in as secondary workers.[45] A large informal sector with low barriers to entry and exit allows women to readily join the labor market, although returns are low. During Tanzania's recession in the mid–1980s, the rise in the number of women joining the labor force could be partly attributed to the economy's large informal and rural sectors, which easily absorbed additional workers.[46] These characteristics enhance the counter-cyclical nature of women's labor force participation decisions in low-income and lower-middle-income countries.

The AWE also varies considerably across population groups,[47] and added worker effects and discouraged worker effects can operate simultaneously:[48]

- During the 1997 financial crisis in South Korea, the discouraged worker effect occurred mainly among young, single women working in service sectors and outweighed the increase in labor force participation among middle-aged married women, who joined the labor market to maintain their family income.[49]
- During the debt crisis in Brazil, the same trends were observed, resulting in no aggregate increase in female labor force participation because as more poor women joined the labor force more rich women left it.[50]

Some studies have examined income shocks to households outside of periods of recession or conflict:

- A study of the cyclicality of women's labor supply in 63 developing countries found that women in poverty-prone households are more likely to enter employment in the wake of an income shock than women in financially stable households.[51] However, the likelihood declines among women with young children. Wives and husbands with less education were also found to have higher labor force participation rates during times of economic hardships.

Evidence from conflict-affected countries

Rates of women in paid employment are low in countries in protracted conflict. A study of 36 conflict-affected countries found female employment rates of around 20 percent in the countries experiencing protracted (ongoing) conflict but rates of around 60 percent in countries in post-conflict phases.[52]

Previous country studies found increasing rates of women's labor force participation during conflict.[53] The increases have been attributed to conflict-related male mortality, a larger number of female-headed households, and changes in the economic opportunities that

are available after conflict (for example, petty trade and agricultural labor jobs, which are often more acceptable to women than to men):[54]

- Looking at Angola, Mali, Somalia, Sudan, and Uganda, a 2005 study found that conflict increased women's economic opportunities while reducing men's.[55] Using secondary and qualitative data from group discussions and individual testimonies, the study found that armed conflict dismantled the traditional gender division of labor in the home. Because casual work such as petty trade and agricultural labor is often more acceptable to women than to men, women have a broader range of coping options in situations of conflict. Well-off men shunned casual work for fear of losing status and opted to remain at home instead.[56]According to interviewees, 70–80 percent of households became dependent on women's income.[57] The largest changes in gender roles (defined as the division of labor across various tasks) were noted in urban households and households with new female heads. In rural areas, women already had essential roles in farming and livestock herding, so the effect of conflict was less evident.
- In Nepal, difference-in-differences analysis spanning several DHS rounds (1996, 2001, and 2006) highlighted that women in conflict-affected areas entered wage work and self-employment more than women in unaffected areas. This trend held regardless of employment type, husband's education, migration status, and the woman's status as a widow or household head.[58]

Several studies have pointed to associations between periods of conflict and women's empowerment and a redefinition of gender norms:

- A 2012 quantitative micro-study using data from the Living Standards Measurement Study and the DHS for Bosnia and Herzegovina, Colombia, Kosovo, Nepal, Tajikistan, and Timor-Leste determined that women participated more in the labor market during and immediately after conflict.[59] In Bosnia and Herzegovina, Colombia, and Timor-Leste, women's increased participation was associated with greater empowerment (measured by woman's bargaining power and level of participation in household and community decision-making) and higher per capita consumption. Unsurprisingly, gains were more substantial when women worked in better paid and high-skilled jobs.
- A 2001 study of Bosnia and Herzegovina, Cambodia, El Salvador, Georgia, Guatemala, and Rwanda found that women's labor force participation rose during and after conflict.[60] The number of female-headed households increased significantly as men died, disappeared, or were imprisoned. In Cambodia, women's labor force participation continued to increase after the conflict ended in 1991. Because of labor shortages during the conflict, women moved into jobs in industries previously dominated by men and never left.[61] In 2017, for example, 85 percent of workers in Cambodia's textile industry were women.[62]
- The World Bank's Moving Out of Poverty survey data for Colombia, Indonesia, the Philippines, and Sri Lanka also revealed that exposure to conflict correlated positively with female empowerment (measured by female respondents' perceptions of control over critical areas of their lives), specifically in education, work, marriage and childbearing, non-family friendships, membership in local groups, and political engagement.[63] In these countries, communities with more empowered women experienced faster poverty reduction and recovery after the conflict, which was attributed to improvements in local security, more accessible labor markets, and strong local governance. Survey respondents also reported diversifying or intensifying their livelihood activities during and after conflict. In a follow-up qualitative study in Afghanistan, Liberia, Sudan, and the West Bank and Gaza that explored perceptions of gender roles during conflict, women reported feeling more empowered (as defined by making choices to advance their interests). Exposure to armed conflict sparked a relaxation of gender norms—norms were still held, but practice was less likely to follow norms.[64]

Overall, the micro evidence confirms that conflict expands women's economic opportunities as women seek work for various reasons, including conflict-related deaths among men,[65] an increase in female-headed households,[66] and changes in the economic opportunities that are available after conflict (for example, petty trade and agricultural labor jobs, which are often more acceptable to women than to men).[67] The effects are generally greater among low-income households, whose members tend to work in informal jobs, where entry barriers are lower. There is also evidence that gender norms can change in ways that facilitate the expansion of women's economic opportunities.

However, there is limited evidence whether conflict improves the quality of jobs available to women and whether the labor market participation effects last in the post-conflict period. The current study addressed those questions, as described below.

Addis Ababa, Ethiopia
An electrician works on new housing

Our analysis reveals significantly higher labor force participation among women in the sample of post-conflict countries in Sub-Saharan Africa, both in absolute numbers and relative to men's participation, than the average for low- and lower-middle-income countries. But while conflict expanded women's overall economic opportunities , it did not transform the jobs available to them or improve their quality.

3 Trends in women's employment in six conflict-affected countries in Sub-Saharan Africa

The current study investigated a sample of six post-conflict countries in Sub-Saharan Africa for which comparable data were available at relevant points in time: Burundi, Chad, Côte d'Ivoire, Guinea-Bissau, Liberia, and Rwanda. Having data for at least a decade after peace agreements were signed enables us to examine the long-term effects of conflict on female labor force participation and employment patterns. In the six countries, conflict periods ranged from less than 1 year in Rwanda to 14 years in Liberia (table 1).

Rates of female labor force participation were stable or rising

Five of the six countries had stable or gradually increasing rates of female labor force participation over the two and a half decades that encompassed post-conflict periods (figure 2). Rwanda averaged the highest female participation rate, at around 85 percent. Only Burundi experienced a gradual decline in the female labor force participation rate during and following its 12-year conflict—although, at higher than 80 percent, the rate was still 20 percentage points above the average for Sub-Saharan Africa.

TABLE 1 Beginning and end of conflict in six countries in Sub-Saharan Africa, 1993–2011

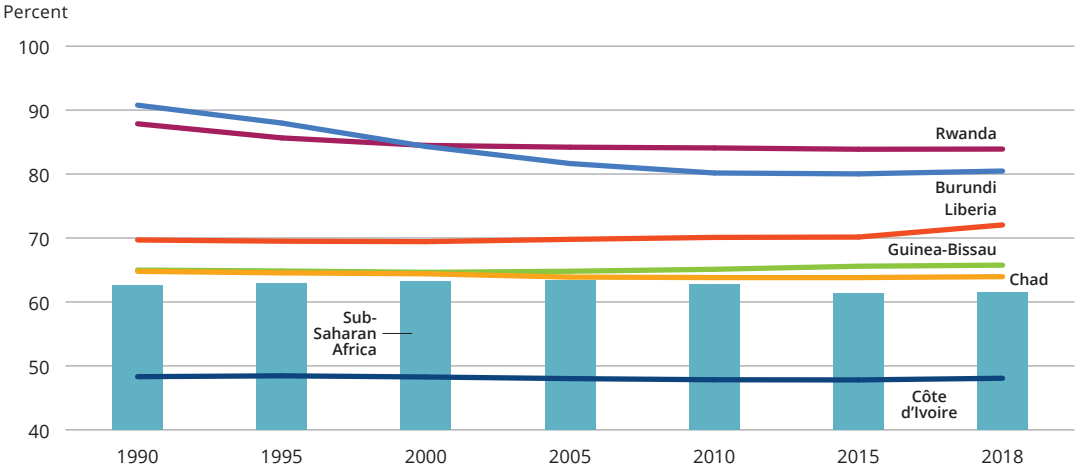
Country	Conflict started	Conflict ended	Length of conflict (years)
Burundi	1993	2005	12
Chad	2005	2010	5
Côte d'Ivoire	2002	2011	9
Guinea-Bissau	1998	1999	1
Liberia	1989	2003	14
Rwanda	1994	1994	< 1

Source: UCDP/PRIO n.d. e.

Slowing economic growth

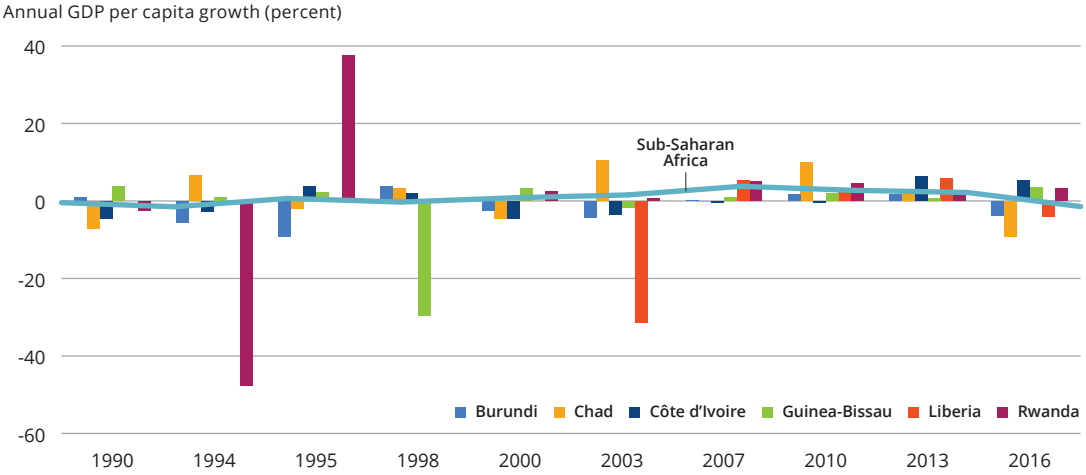
All six countries experienced considerable economic volatility over 1990–2016, in contrast to a fairly stable pattern of GDP growth per capita in Sub-Saharan Africa (figure 3). In the six countries, armed conflict was associated with significant declines in economic growth. Rwanda's economy shrank by almost 60 percentage points between 1992 and 1994, amounting to a two-thirds drop in average annual income per capita (from $315 to $127).[68] Guinea-Bissau's GDP per capita growth shrank from 4 percent in 1997 to –29 percent in 1998, contracting 33 percentage points.[69] Burundi's lost 7 percentage points in economic growth between 1992 and 1993. [70] Liberia's economic growth rate plummeted 32 percentage points between 2002 and 2003 but eventually recovered to pre-conflict levels.[71] Chad's GDP per capita growth declined 15 percentage points between 2005 and 2006.[72] And in Côte d'Ivoire, although the conflict resulted in relatively few casualties (600 battle deaths a year[73] compared with an average for civil wars that is 10 times higher[74]), the economic impact of the conflict was substantial, with an average per capita GPD growth rate of –1.5 percent

FIGURE 2 Five of the six post-conflict countries had higher rates of female labor force participation than the Sub-Saharan African average, 1990–2018



Note: The Sub-Saharan African averages are population weighted and exclude the six sample countries.
Source: Authors' calculations based on the ILOSTAT database (https://ilostat.ilo.org/topics/women/), accessed January 2020.

FIGURE 3 The six post-conflict countries experienced economic contraction and volatility during and following conflict, 1990–2016



Source: Authors' calculations based on World Bank data on annual GDP per capita growth from World Development Indicators database (https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG; accessed January 2020).

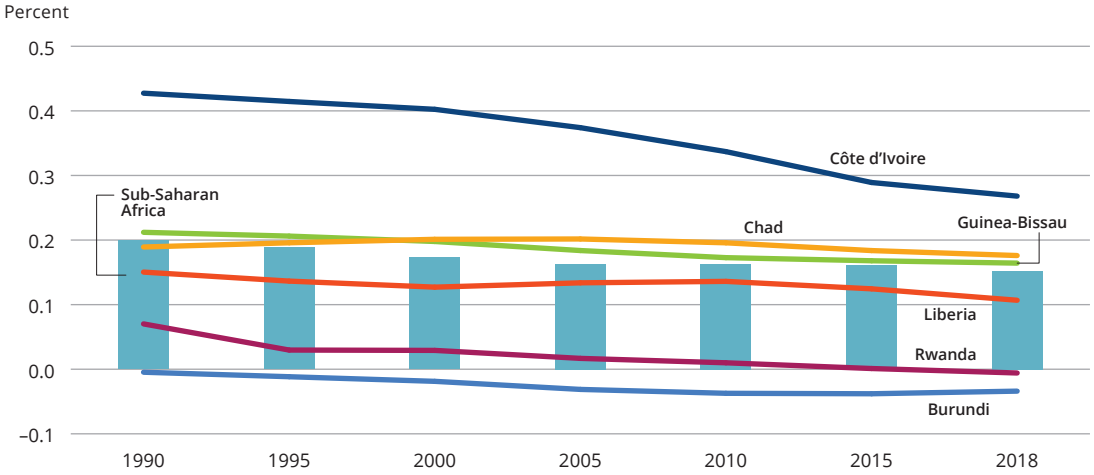
between 2002 and 2007, the second lowest growth rate in the region.[75]

Smaller gender gaps in labor force participation

Did the conflicts and associated economic shocks in these countries pull women into the labor force, as predicted by the AWE? One place to look is at changes in the gender gap in labor force participation rates (figure 4).

Gender gaps in all six post-conflict countries have narrowed since 1990. Côte d'Ivoire had the largest improvement, with nearly a 16 percentage point narrowing of the gender gap. Guinea-Bissau and Liberia both experienced a 5 percentage point narrowing of the gender gap. Although Burundi had the smallest improvement (less than 1 percentage point), the

FIGURE 4 Gender gaps in labor force participation have narrowed in all six post-conflict countries, 1990–2018



Note: The gender gap is defined as the difference between the labor force participation rate of men and women ages 15 and older relative to the male labor force participation rate. The regional estimates are population-weighted and exclude the six sample countries.
Source: Authors' calculations based on ILOSTAT database (https://ilostat.ilo.org/topics/employment/; accessed January 2020).

country has a reverse gender gap, with more women than men in the labor force.[76]

Women tend to work in low-quality jobs

Looking at labor force participation rates alone can be misleading because women often work in informal jobs and are underpaid, even when they overcome some of the structural and social barriers to their participation in the economy. A deeper analysis is required that goes beyond labor force participation rates to better understand the quality of employment.

A lag in structural transformation

As developing countries grow, they undergo a structural transformation, with workers moving out of agriculture and into industry and services.[77] However, this transformation tends to lag in low-income post-conflict countries. In 2019, only one in five women in Sub-Saharan Africa worked as a salaried employee compared with one in three in lower-middle-income countries and three in five in upper-middle-income countries.[78] In Liberia, 90 percent of female employees are not salaried. In Rwanda, 80 percent are not salaried; men are more than twice as likely as women to be salaried employees.[79]

Few women in the six post-conflict countries work in services and fewer still in industry.[80] In 2019, the share of women in services ranged from less than 3 percent of employed women in Burundi to 20 percent in Rwanda. Liberia stands out, with almost half of employed women engaged in the services sector compared with a little more than a third of men. The share of women working in industry ranged from a high of 5 percent in Liberia to almost zero in Chad and Burundi.

Globally, the share of female employment in agriculture has been falling over the past three decades and currently stands at around 28 percent. Although the six post-conflict countries have followed the same downward trend, female employment in agriculture still significantly exceeds the global average. In Rwanda, for example, although female employment in agriculture fell from 95 percent in 1995 to 76 percent in 2019, the share is still 22 percentage points above the Sub-Saharan Africa average and 30 percentage points above the lower-middle-income country average. In Burundi, 96 percent of female employees work in agriculture.[81]

Women engaged in agriculture in developing countries are more than twice as likely as men to be involved in subsistence farming rather than in commercial farming.[82] This pattern is prominent across Sub-Saharan Africa.

Women as contributing family workers and own-account workers

Women are also over-represented among the world's contributing family workers (over 60 percent), which means that they are less likely to have formal work arrangements and more likely to lack decent working conditions and adequate social security.[83] Although women working as a contributing family worker (a self-employment job in a market-oriented establishment operated by a related person in the same household) has been declining as a share of total female employment in Sub-Saharan Africa (figure 5), women's share (32 percent) was double that of men in 2019.[84]

In five of the six post-conflict countries in the study, women working as a contributing family worker as a share of total female employment fell between 1995 and 2018. Côte d'Ivoire experienced the largest decline, at 15 percentage points. The exception was Rwanda, where the share of women working as a contributing family worker increased by 12 percentage points. The rising trend for women as contributing family workers in Rwanda stands in contrast to women's rising levels of educational attainment.

As the share of women working as a contributing family worker declined, the share of own-account (self-employed) workers increased slightly in the region between 1995 and 2018 and in five of the post-conflict countries (figure 6). Côte d'Ivoire had the largest increase (8 percentage points), followed by Liberia (3.6 percentage points). Rwanda was again the exception, as women own-account workers as a share of total female employment plummeted 31 percentage points (to 35 percent).

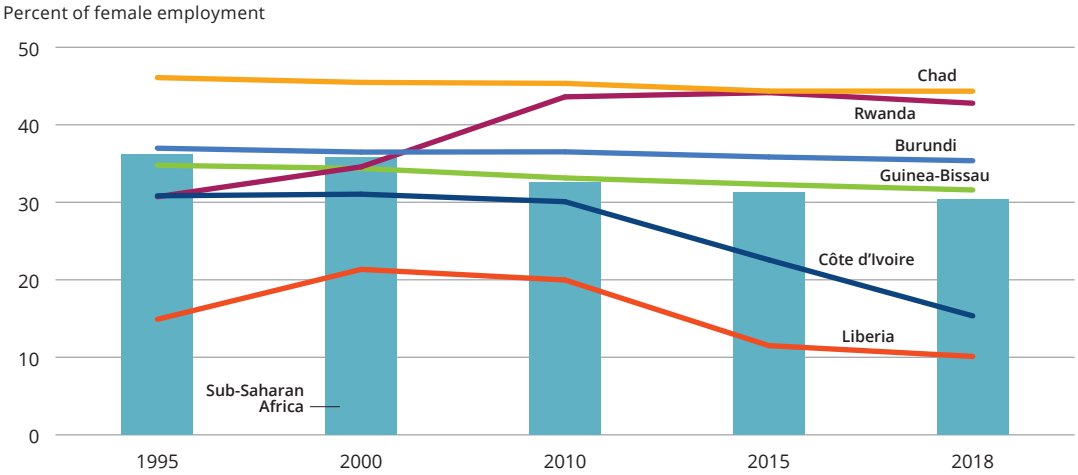
* * *

Overall, we found that conflict expanded women's economic opportunities in our sample of post-conflict countries in Sub-Saharan Africa. However, conflict did not transform the jobs available to women or improve their quality. Employment prospects remained limited by lagging structural transformation, with most women in Sub-Saharan Africa continuing to work in agriculture, largely in subsistence farming and livestock herding, under informal work arrangements and lacking decent working conditions.[85] Women continue to face widespread discrimination in the distribution of assets, services, and information.[86]

Factors confounding the analysis of the additional worker effect

Several of the trends revealed by the study of the six post-conflict countries complicate the analysis of the AWE in these countries. First, a majority of women already participate in the labor market.[87] The rates

FIGURE 5 Women working as contributing family workers have been declining as a share of female employment in five of the six post-conflict countries and in the region, 1995–2018

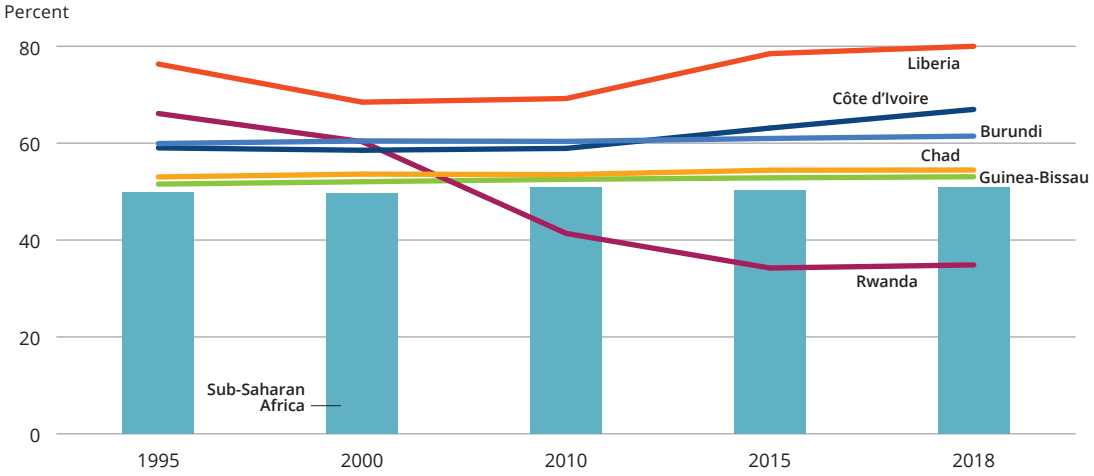


Note: Regional estimates are population weighted and exclude the six sample countries.
Source: Authors' calculations based on ILOSTAT database (https://ilostat.ilo.org/topics/employment/; accessed January 2020).

of female employment in the six countries exceed the average for Sub-Saharan Africa, unlike the case in many of the other countries for which the AWE has been analyzed. Second, while evidence suggests that female labor force participation is countercyclical, particularly among poorer and less-educated workers in low-income economies,[88] high female labor force participation might also reflect the importance of small-scale agriculture in the sample countries, with the possible exception of Côte d'Ivoire. Third, several of the trends differ across the post-conflict countries in the sample.

Thus, to investigate some of the employment trends in greater depth, we use individual-level microdata from the DHS to examine the case of Liberia.

FIGURE 6 Women own-account workers rose as a share of female employment in five of the six post-conflict countries and in the region, 1995–2018



Note: Regional estimates are population weighted and exclude the six sample countries.
Source: Authors' calculations based on ILOSTAT database (https://ilostat.ilo.org/topics/employment/; accessed January 2020).

Kisumu, Kenya
Women produce firewood cook stoves

Deeper investigation of Liberia's micro-level data suggests that conflict-related disruptions and shocks to local structures and norms have expanded women's economic opportunities. The predicted employment likelihood rose significantly following conflict for all Liberian women, but especially married women.

4 The case of Liberia—and the counterfactual case of Guinea

Before investigating the microdata for Liberia to identify individual, household, and structural factors that affected women's employment outcomes before and after the conflict, we briefly review the context.

Liberia's 14 years of conflict comprised two civil wars in quick succession. The first began as a rebellion against Liberian President Samuel Doe, led by Charles Taylor, and ended with Taylor's election as president in 1997. There was a short-lived peace until 1999, when the second civil war broke out and continued until 2003.[89]

Of a population of 3 million people, more than 250,000 were killed during the conflict, and more than 200,000 fled as refugees.[90] When the conflict ended in 2003, the country's infrastructure was in ruins, and people were without electricity, running water, or functioning public services. The economy was shattered and heavily dependent on agriculture. In 2005, agriculture accounted for more than half of GDP.[91] Further, in 2011, almost three-quarters of Liberia's GNI still came from official development assistance.[92]

At the end of the conflict, a majority of urban women were employed in small-scale trade, mostly in the informal sector, where jobs and wages are precarious. In 2008, just 2 percent of women in urban areas were working in the formal, registered sector. Only 4 percent of female-owned businesses were registered, compared with 14 percent of male-owned businesses.[93]

In 2007, the Center for Systemic Peace ranked Liberia as a "highly fragile" country, with a score of 19 out of 24, alongside Rwanda, Nigeria, and the Central African Republic. Over the next five years, Liberia's score gradually improved, reaching "medium fragility" by 2012.[94]

The Human Development Index ranked Liberia at a low 176 of 189 countries in 2019,[95] while the Women, Peace, and Security Index for 2019 ranked Liberia among the worst performers, at 144 of 167 countries, alongside Sudan, Libya, Mali, and Nigeria.[96]

Based on the theoretical framework and trends described in sections 2 and 3, we empirically tested the hypothesis that conflict led to increased female employment in Liberia in the long term. We investigated evidence of the AWE in response to declines in household income due to husbands' absence or loss of employment.

Empirical model of individual and household characteristics and women's likelihood of being employed

We used DHS data for 1986–2013 to run a logistic regression model, or logit model (used to model the probability or log odds of dichotomous outcome variables, such as working/not working, as a linear combination of the independent variables; see box 1 for model description). The sample data cover three rounds of interviews, beginning before the conflict. Because the DHS rounds for Liberia lacked the variable on labor force participation, we coded the dependent variable as *employed* if the respondent selected a response of employer, employee, or self-employed. The survey wording differed slightly over the years, but all the surveys appear to capture the same set of activities.[97]

BOX 1

The logit model

The model specified a standard labor supply equation at the individual level as:[1]

$$\gamma_{it} = a + bX_{it} + m_t + e_{it}$$

where the dependent variable, γ_{it}, is binary: 1 indicates that the respondent was working at time *t* (the time of the survey), and 0 indicates not working; X_{it} captures a set of independent variables that include individual characteristics (*age, education level,* and *marital status*) and household characteristics (*de facto residence, Household Wealth Index*); m_t is a time-specific effect; and e_{it} is an individual-level, woman-specific error term. The logit models for the married women sample have additional variables related to respondents' marriage status (*household decision-making power, husband having a high-skilled job, respondent's household head status,* and *household wealth*).[2]

Notes

1. Killingsworth 1983.
2. Demographic and Health Survey data were not available for husbands' occupation and employment status, and Household Wealth Index data were not available for 1986.

Also, because the likelihood of a woman's employment may differ by marital status, we ran separate logit models for married women and for all female respondents, including married women.

The expected directions of the relationships between women's likelihood of being employed and the independent variables are summarized in table 2. Of the independent variables, the expected relationship between a woman's likelihood of being employed is positive for her decision-making power at home, education, age, and status as the head of household. Other independent variables, such as having any children at home or having an educated or employed husband, are expected to reduce the likelihood of employment (expected to have a negative relationship).

TABLE 2 Direction of the expected relationship between women's likelihood of employment and observed variables in Liberia

Independent variable	Expected relationship with woman's employment
Female respondent	
Decision-making power	▲
Education level	▲
Age	▲
Having any children	▼
Number of children under age 5	▼
Head of household	▲
Male partner	
Employed	▼
High-skilled job	▼
Education level	▼
Household	
Household Wealth Index	▼
Urban residence	▼

Source: Authors' analysis of Demographic and Health Survey data for 1986–2013.

Trends in individual and household characteristics from 1986 to 2013

Trends in descriptive statistics for characteristics of Liberian women, their partner, and their household from 1986, before the conflict, to 2007, four years after the conflict, to 2013, a decade after the conflict, are largely positive (table 3; see appendix 1 for the full set of descriptive statistics):

- Education levels rose significantly. Between 1986 and 2007, women's median education level rose from no or incomplete primary schooling to completed primary schooling, and the share of women with a college degree rose 3 percentage points, doubling at every survey interval. Even though the rate of college completion was higher for women than for men over the entire period, gender gaps in education persisted between women and their partners.
- In all three survey years, around 80 percent of the women had children, but the average number of children under age 5 fell from two per woman to one after the conflict ended. The declining fertility rates in the immediate post-conflict period and in the longer term could reflect voluntary delays in fertility as a response to economic hardship[98] or women's rising education levels, or a combination.

TABLE 3 Trends in individual and household characteristics in Liberia, 1986, 2007, and 2013 (percent of sample)

Respondent and characteristics	1986	2007	2013
Female respondent			
Currently employed	55	60	55
Completed college degree (%)	1	2	4
Age (median)	27	28	28
Marital status			
Never married	21	24	31
Currently married	68	69	58
Separated	11	8	11
Having any children	80	80	78
Number of children under age 5 (median)	2	1	1
Head of household	—	19	22
Male partner			
Employed	—	100	100
Low-skilled job	—	57	53
High-skilled job	—	44	47
Completed college degree (%)	6	7	11
Household			
Household Wealth Index (share of households living in the middle to richest quantiles)	—	63	65
Urban residence	43	44	61
Number of observations	5,239	7,092	9,239

— DHS data were not available.
Source: Authors' analysis of Demographic and Health Survey data for 1986, 2007, and 2013.

- Between 1986 and 2013, the share of women living in urban areas rose almost 20 percentage points, to 61 percent.
- Between 2007 and 2013, the share of households living in the middle to richest quantiles of the income distribution rose 2 percentage points.[99]
- Over the three decades covered by the DHS data, the reported employment rates of Liberian women's male partners remained at 100 percent, although most men (57 percent in 2007 and 53 percent in 2013) were working in low-skilled occupations, such as agriculture, fishing, and unskilled manual work

Women's agency and decision-making power

Women's decisions about whether to engage in employment are affected by their agency and by gender and social norms held by women and their reference groups. Gender and social norms are the values, beliefs, attitudes, and practices that prescribe social roles and power relations between women and men in society.[100]

While there is no generally accepted measure of gender and social norms,[101] we used a proxy that captures women's agency and decision-making power based on women's participation in at least three crucial decision-making processes:[102]

- Making large household purchases.
- Choosing to visit family or other relatives.
- Deciding what to do with husband's earnings.

We asked whether a woman made those decisions alone, made them together with her husband/partner, her husband/partner made the decisions alone, or someone else made decisions on her behalf. The higher the index score, the greater the gender equality in decision-making.

In 2007, 8 percent of respondents reported no decision-making authority over household decisions, either alone or jointly with a husband, a value that

fell just 1 percentage point by 2013 (table 4). By 2013, there was a slight increase in the share of respondents who made decisions alone, from 3 percent in 2007 to 4 percent.

Generally, women made these decisions jointly with their husband/partner:

- The share of decisions about large household purchase that were made jointly rose from 41 percent of the sample in 2007 to 58 percent in 2013—although 18 percent of women still had no say in such decisions in 2013.
- Around 60 percent of respondents decided on visits to family members or other relatives jointly with their partners in both years. Around 20 percent of women had no say, with the share rising slightly over time.
- Decisions on how to use the husband's earnings were mostly made jointly—around 65 percent in both years. The share of women making this decision alone increased 3 percentage points.

The section below on the logit model discusses the association between women's decision-making roles and the likelihood of being employed.

TABLE 4 Decision-making Power Index for married women in Liberia, 2007 and 2013 (percent of sample)

Index value	2007	2013
Summary		
Power in no area	8	7
Power in all areas	3	4
Making large household purchases		
0 (no power)	24	18
0.5 (joint power)	41	58
1 (full power)	35	24
Choosing to visit family or other relatives		
0 (no power)	19	21
0.5 (joint power)	58	61
1 (full power)	23	19
Deciding what to do with husband's earnings		
0 (no power)	30	25
0.5 (joint power)	62	65
1 (full power)	7	10

Note: Individual person weights from Demographic and Health Surveys are used. Component values may not sum to 100 percent because of rounding. Index values of 0 indicate that women had no decision-making power, 0.5 that women decided jointly with their husband/partner, and 1 that women made decisions alone.

Source: Authors analysis based on data from Demographic and Health Surveys for Liberia in 2007 and 2013.

Factors associated with changes in Liberian women's likelihood of being employed

We ran a logit model of women's likelihood of being employed in Liberia before and after the conflict and an extended logit model that included additional variables.

Results of logit model analysis for all women and married women

The logit model analysis revealed several changes in the likelihood of women being employed. The results are presented as average marginal effects for each observation rather than odds ratios because average marginal effects are generally less sensitive to changes in the model specification.[103]

- For the sample of all women, the predicted likelihood of being employed rose 3 percentage points after the conflict, from 54 percent in 1986 to 57 percent in 2007 (table 5). For the sample of married women, the likelihood rose 4 percentage points, from 62 percent to 66 percent.
- In the longer term over 2007–2013, the predicted likelihood of female employment declined 1 percentage point for the full sample and 3 percentage points for married women.
- Over the whole period 1986–2013, the predicted probability of employment was about 10 percentage points higher for the sample of married women than for the sample of all women. The upshot was that the employment likelihood was 2 percentage points higher in 2013 than the pre-conflict level for the sample of all women and 1 percentage point higher for the sample of married women.

Several results were statistically significant (see table 5). These are highlighted as follows, broadly in order of relative importance (additional details are in appendixes 2–4[104]):

- One surprising result for the sample of all women is that *the level of education is negatively related to the likelihood of employment for all years.* For the married women sample, the education level is significant only before the conflict and is also negatively related to the likelihood of employment.
- *Age has positive effects across all survey years for both samples of women,* although its importance diminished after the conflict. For the sample of all women,

TABLE 5 Average marginal effects from logit models of women's likelihood of being employed in Liberia before and after the conflict, 1986, 2007, and 2013 (coefficients)

Sample and variable	1986	2007	2013
All women, base model			
Married	0.00409	0.0791***	0.0788***
Education level	–0.102***	–0.0225***	–0.00597
Age	0.0729***	0.0593***	0.0622***
Urban residence	0.248***	0.160***	0.0250**
Average marginal effects at the mean	0.54	0.57	0.56
Number of observations	5,219	6,503	9,210
Married women, base model			
Education level	–0.0794***	0.00288	–0.00874
Age	0.0629***	0.0438***	0.0513***
Urban residence	0.283***	0.173***	0.00986
Average marginal effects at the mean	0.62	0.66	0.63
Number of observations	3593	3998	5862
Married women, extended model			
Education level	–0.0408***	0.0171	–0.00741
Age	0.0599***	0.0370***	0.0487***
Number of children under age 5	0.0107**	–0.0211***	0.00299
Having any children	0.0206	0.0414	0.0154
Urban residence	0.267***	0.148***	–0.0104
Household Wealth Index quantile	—	0.00223	–0.00899
Head of household	—	–0.0131	0.0408**
Decision-making power	—	0.00871	0.0630***
Husband's education level	–0.0587***	–0.0111	–0.000151
Husband has a high-skilled job	—	–0.0589***	–0.0179
Average marginal effects at the mean	0.63	0.68	0.63
Number of observations	3,055	3,696	5,551

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. — DHS data were not available.

Note: The results are presented as average marginal effects rather than odds ratios because average marginal effects are generally less sensitive to changes in the model specification.

Source: Authors analysis based on data from Demographic and Health Surveys for Liberia in 1986, 2007, and 2013.

a five-year increase in respondent's age boosts the likelihood of employment by 7 percentage points before the conflict and by 6 percentage points after the conflict.

- *Women living in urban areas*—who constituted a growing share of the sample over the period—*were more likely to work than women living in rural area.* The employment likelihood was 28 percentage points higher for married urban women than for married rural women in 1986 and 17 percentage points higher in 2007.

Extended logit model results for additional variables for married women

An extended logit model tested some additional variables relevant to married women:

- *Married women who have more say over decisions at home were more likely to be employed after the conflict.*[105] A 0.5 percentage point increase in the Decision-making Power Index (range of 0–3; see above) was associated with a 6 percentage point greater likelihood of being employed in 2013.

- *Married women who self-identified as the head of household in 2013 had a 4 percentage point higher likelihood of being employed* than women who did not.
- *The direct effect of fertility (a child under age 5 in the household) on a married woman's employment turned negative after the conflict.* In 2007, having a greater number of young children was associated with a 2 percentage point decrease in a mother's likelihood of employment. This finding is in sharp contrast with pre-conflict results: in 1986, having a greater number of young children was associated with a 1 percentage point increase in a mother's likelihood of employment.
- *A husband's higher level of education and high-skilled occupation were negatively associated with a wife's likelihood of employment.* For example, in 1986 a woman whose husband had completed secondary school was 6 percentage points less likely to work before the conflict than a woman whose husband had completed only primary school. However, this effect lost its significance once husbands working in high-skilled jobs were added to the model (likely due to endogeneity). After the conflict, Liberian women whose husbands had a high-skilled job were 6 percentage points less likely to work than women whose husbands had a low-skilled job. This is consistent with the literature suggesting that the employment response of married women with a better-educated husband showed the weakest countercyclicality.[106]

Understanding the findings

Although some of the results may seem counterintuitive, the findings are broadly consistent with economic predictions about income and substitution effects, which work in the same direction. While education is important in itself and in its role in women's agency and employment, rising levels of schooling were not associated with higher employment, a finding that might partly reflect the dearth of decent work opportunities for better skilled women. Educated women may be expected to demand higher wages to substitute paid work for leisure time or for work in the home. Also, educated women are more likely to marry educated men, who earn higher incomes, which may discourage the women from participating in the labor market.[107]

The model found an almost 10 percentage point higher likelihood of employment for married women than for all women, both before and after the conflict.

Because of data limitations, the model was unable to account for women in the labor force who were actively looking for work but were not employed or to account for the quality of their jobs. We know from other studies, however, that in conflict-affected countries most jobs available to women are informal, low-skilled, and poorly paid. We also did not explicitly consider women's ongoing household responsibilities and the effect of increased time burdens on women, beyond controlling for the number and age of children and marital status.

Robustness analysis: Testing for sensitivity to model specifications

To test whether the results are robust to changes in the model specification,[108] we divided the independent variables into two groups: one with the core variables (*marriage status, education level, age,* and *urban residence*), which are included in all the logit models, and another with two secondary variables (*husband's education level* and *respondent's head of household status*).

Respondent's employment status was then regressed on all possible linear combinations of the secondary variables, including the full set of core variables in all the regressions. Broadly speaking, the results show that the age and urban residence variables are robust to the specification of the regression equation throughout, while the marriage status variable is not as robust (it was not significant for 1986). The results for women's education are less robust once the secondary variables are included, which may be picking up the effects of household wealth and the husband's labor market status. The full results are in appendix 5.

Analysis of a counterfactual case: Guinea

The correlations reported for the logit model do not amount to causation. Without a control group, it is difficult to establish the causal story of the impacts of conflict on women's likelihood of being employed.[109]

It is illustrative to examine the counterfactual case of a country not affected by conflict. Guinea is not classified as a conflict-affected country,[110] although it has experienced some spillover effects from regional wars.[111] Guinea is bordered by three of the six conflict-affected countries in our study—Côte d'Ivoire, Guinea Bissau, and Liberia. Baseline similarities between DHS samples for Liberia and Guinea are presented in appendix 6.

We ran the same logit model for Guinea for 1999, 2005, and 2012 as we did for Liberia for 1986, 2007, and 2013 (see appendixes 7 and 2). The likelihood of Guinean women being employed fell from 81 percent to 75 percent between 1999 and 2012, while the factors that emerged as significant were similar to those found to be significant for Liberia, including a woman's marriage status, education, age, and urban residence. The full results are in appendix 6.

These results for Guinea suggest that the increasing likelihood of employment among Liberian women following conflict was due to conflict-related effects rather than to temporal or regional effects.

Accra, Ghana
A woman operates a small shop

Women are more likely to be employed when they have more say over decisions at home and when they are the head of the household. This underscores the potential gains from policies and programs that support women's agency and decision-making at home and that involve men as well as women.

5 Emerging conclusions and implications for policy

Consistent with U.N. Security Council Resolution 1325 on women, peace, and security, research is increasingly focusing on the effects of armed conflict on women, including during the post-conflict recovery period and beyond.

This study explored whether conflict results in an increasing likelihood that women will participate and remain in the labor force. We used open-access labor market participation data for six conflict-affected countries to explore broader trends and then narrowed in on the case of Liberia using micro-level survey data.

The patterns that emerged from the empirical analysis suggest some important responses by women living in the midst of devastating conflict and enormous economic displacement and in their aftermath. Analysis of the six post-conflict countries revealed significantly higher labor force participation rates among women in those countries than the average for low-income and lower-middle-income country groups.

Conflict was generally associated with longer term boosts in women's labor market participation, except in Burundi, where women's labor force participation was already above regional and global averages. In five of the countries, the post-conflict period was also associated with smaller gender gaps in labor force participation than the averages for low-income and lower-middle-income country groups. The exception, Burundi again, had a reverse gender gap, with more women than men employed.

A closer investigation of Liberia using individual-level microdata from the DHS further illuminated the association between conflict-affected situations and women's labor force participation. Despite the tragedy and costs of the conflict, one positive outcome appears to be that conflict-related disruptions and shocks to local structures and norms expanded economic opportunities for Liberian women. In contrast to neighboring Guinea, which did not directly experience conflict, female labor force participation rose in Liberia after the conflict ended. The analysis also identified key determinants of Liberian women's likelihood of being employed, in particular that married women were more likely to be employed than single women. Findings were robust to changes in model specification.

Although conflict expanded women's economic opportunities in Sub-Saharan Africa, it did not transform the jobs that were available to them or improve their quality. While data limitations prevented a full investigation of the quality of jobs, ILO data show that women's employment prospects remained limited by lagging structural transformation, with most women continuing to work in agriculture. When engaged in agriculture, women in Sub-Saharan Africa were more likely than men to be involved in vulnerable employment, such as contributing family work.

Women's agricultural work remains undervalued and under-resourced, reflecting widespread discrimination in the distribution of assets, services, and information.[112] In developing countries, women do not have the same rights as men to buy, sell, or inherit land; to borrow money or open a savings account; to sign a contract; or to sell their produce.[113]

The Food and Agriculture Organization of the United Nations estimates that if women farmers enjoyed the same land rights and access to technology, financial services, and markets as men, they could produce

20–30 percent more food on their land and reduce the number of malnourished people in the world by up to 17 percent.[114]

Evidence shows that gender-responsive policies can promote equality and empower women in post-conflict recovery. [115] Given that a majority of women employed in Sub-Saharan Africa work in agriculture, laws that discriminate against women in farming and that reduce their productivity need to be repealed. Besides increasing overall production, closing the gender gap in the distribution of assets, services, and information would also increase women's income—a proven strategy for improving education, health, and nutrition outcomes for children.[116]

An important—if expected—finding is that women are more likely to be employed when they have more say over decisions at home and when they are the head of the household. We also know that women bear the bulk of responsibility for unpaid work and care responsibilities in the home—many are raising young children and are also responsible for much of the domestic work. Women's work prospects are undoubtedly affected by these unmeasured and unpaid work burdens. This underscores the potential gains from policies and programs that support women's agency and decision-making at home and that involve men as well as women.

These findings can be used for framing immediate and long-term policies and strategies to boost women's economic opportunities in the wake of conflict. In times of conflict, ensuring women's inclusion and fostering their long-term self-sustainability are essential to a sound recovery after conflict. To effectively achieve this transition, women must not only benefit from post-conflict reconstruction activities but must also be among the planners, decision-makers, and implementers in all sectors of the post-conflict economy.

APPENDIX 1

Liberia descriptive statistics for 1986, 2007, and 2013

TABLE A1.1 Descriptive statistics for Liberia, 1986, 2007 and 2013 (percent)

Respondent and characteristics	1986	2007	2013
Woman			
Currently employed	55	60	55
Education level			
No or low education	63	42	33
Completed primary schooling	18	33	31
Completed secondary schooling	18	23	31
Completed college degree	1	2	4
Age			
Late teen	22	19	23
Early twenties	20	19	18
Late twenties	21	16	17
Early thirties	13	14	13
Late thirties	12	14	13
Early forties	6	10	9
Late forties	7	10	8
Marital status			
Never married	21	24	31
Currently married	68	69	58
Separated	11	8	11
Having any children			
Yes	80	80	78
Number of children under age 5			
0	24	25	27
1	26	33	37
2	25	26	23
3	12	10	8

Respondent and characteristics	1986	2007	2013
Number of children under age 5 *(continued)*			
4	7	3	3
5	3	1	1
6	1	0	0
7	1	0	0
8	1	0	0
Head of household	0	19	22
Male partner			
Employed	—	100	100
Occupation			
Low-skilled	—	57	53
High-skilled	—	44	47
Education level			
No or low education	47	29	23
Completed primary schooling	10	19	17
Completed secondary schooling	36	45	49
Completed college degree	6	7	11
Household			
Household Wealth Index quantile			
Poorest	—	18	17
Poorer	—	19	18
Middle	—	18	19
Richer	—	22	22
Richest	—	23	24
Urban residence	43	44	61
Number of observations	5,239	7,092	9,239

— Demographic and Health Survey or household Wealth Index data were not available.
Note: Numbers might not add up to 100 because of rounding.
Source: Authors' analysis based on Demographic and Health Survey data.

APPENDIX 2

Logit model results for women's employment likelihood for the sample of all women in Liberia for 1986, 2007, and 2013

TABLE A2.1 Women's employment likelihood in Liberia, 1986

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Married	0.022	0.075	0.30	0.764	–0.124	0.169	
Education level	–0.561	0.050	–11.28	0.000	–0.659	–0.464	***
Age	0.401	0.021	18.83	0.000	0.359	0.442	***
Urban residence	1.365	0.069	19.79	0.000	1.230	1.500	***
Constant	–3.075	0.150	–20.56	0.000	–3.368	–2.782	***
Mean dependent variable			0.534	Standard deviation of dependent variable			0.499
Pseudo r-squared			0.215	Number of observations			5,219
Chi-square			1035.785	Prob > chi-square			0.000
Akaike information criterion (AIC)			5672.143	Bayesian information criterion (BIC)			5704.943
Average marginal effects at the mean = .54							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A2.2 Women's employment likelihood in Liberia, 2007

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Married	0.371	0.061	6.13	0.000	0.253	0.490	***
Education level	–0.106	0.036	–2.96	0.003	–0.176	–0.036	***
Age	0.279	0.017	16.85	0.000	0.246	0.311	***
Urban residence	0.753	0.058	13.02	0.000	0.640	0.867	***
Constant	–1.986	0.121	–16.39	0.000	–2.223	–1.748	***
Mean dependent variable			0.561	Standard deviation of dependent variable			0.496
Pseudo r-squared			0.103	Number of observations			6,503
Chi-square			785.291	Prob > chi-square			0.000
Akaike information criterion (AIC)			8008.029	Bayesian information criterion (BIC)			8041.930
Average marginal effects at the mean = .57							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A2.3 Women's employment likelihood in Liberia, 2013

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Married	0.350	0.050	7.06	0.000	0.253	0.447	***
Education level	–0.027	0.029	–0.92	0.357	–0.083	0.030	
Age	0.276	0.013	20.67	0.000	0.250	0.303	***
Urban residence	0.111	0.047	2.36	0.018	0.019	0.203	**
Constant	–1.097	0.102	–10.78	0.000	–1.297	–0.898	***
Mean dependent variable			0.553	Standard deviation of dependent variable			0.497
Pseudo r-squared			0.067	Number of observations			9,210
Chi-square			753.097	Prob > chi-square			0.000
Akaike information criterion (AIC)			11832.100	Bayesian information criterion (BIC)			11867.740
Average marginal effects at the mean = .56							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A2.4 Average marginal effects for logit models of women's employment likelihood in Liberia, 1986, 2007, 2013

Variable	1986	2007	2013
Married	0.00409 (0.0136)	0.0791*** (0.0128)	0.0788*** (0.0111)
Education level	–0.102*** (0.00856)	–0.0225*** (0.00759)	–0.00597 (0.00648)
Age	0.0729*** (0.00342)	0.0593*** (0.00322)	0.0622*** (0.00273)
Urban residence	0.248*** (0.0107)	0.160*** (0.0118)	0.0250** (0.0106)
Number of observations	5,219	6,503	9,210

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Note: Numbers in parentheses are standard errors.
Source: Authors' analysis based on Demographic and Health Survey data.

APPENDIX 3

Logit model results for women's employment likelihood for the married women sample in Liberia for 1986, 2007, and 2013

TABLE A3.1 Married women's employment likelihood in Liberia, 1986

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Education level	–0.419	0.061	–6.86	0.000	–0.538	–0.299	***
Age	0.332	0.024	14.04	0.000	0.286	0.378	***
Urban residence	1.494	0.082	18.25	0.000	1.334	1.655	***
Constant	–3.086	0.174	–17.74	0.000	–3.427	–2.745	***
Mean dependent variable			0.604	Standard deviation of dependent variable			0.489
Pseudo r-squared			0.164	Number of observations			3,593
Chi-square			591.757	Prob > chi-square			0.000
Akaike information criterion (AIC)			4044.180	Bayesian information criterion (BIC)			4068.927
Average marginal effects at the mean = .62							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A3.2 Married women's employment likelihood in Liberia, 2007

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Education level	–0.004	0.048	–0.08	0.937	–0.097	0.090	
Age	–0.074	0.041	–1.78	0.075	–0.155	0.007	*
Urban residence	0.757	0.074	10.20	0.000	0.612	0.903	***
Constant	–0.477	0.148	–3.21	0.001	–0.768	–0.186	***
Mean dependent variable			0.653	Standard deviation of dependent variable			0.476
Pseudo r-squared			0.027	Number of observations			3,998
Chi-square			140.481	Prob > chi-square			0.000
Akaike information criterion (AIC)			5026.754	Bayesian information criterion (BIC)			5051.928
Average marginal effects at the mean = .66							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A3.3 Married women's employment likelihood in Liberia, 2013

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Education level	–0.039	0.035	–1.10	0.273	–0.108	0.030	
Age	0.227	0.017	13.49	0.000	0.194	0.259	***
Urban residence	0.044	0.060	0.73	0.466	–0.073	0.161	
Constant	–0.436	0.135	–3.23	0.001	–0.700	–0.172	***
Mean dependent variable			0.624	Standard deviation of dependent variable			0.485
Pseudo r-squared			0.027	Number of observations			5,862
Chi-square			199.625	Prob > chi-square			0.000
Akaike information criterion (AIC)			7560.806	Bayesian information criterion (BIC)			7587.511
Average marginal effects at the mean = .63							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A3.4 Average marginal effects for logit models of married women's employment likelihood in Liberia, 1986, 2007, 2013

Variable	1986	2007	2013
Education level	–0.0794*** (0.0112)	0.00288 (0.00961)	–0.00874 (0.00797)
Age	0.0629*** (0.00406)	0.0438*** (0.00414)	0.0513*** (0.00357)
Urban residence	0.283*** (0.0126)	0.173*** (0.0148)	0.00986 (0.0135)
Number of observations	3,593	4,100	5,862

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Note: Numbers in parentheses are standard errors.

Source: Authors' analysis based on Demographic and Health Survey data.

APPENDIX 4

Logit model results for the employment likelihood for the married women sample in Liberia for the extended model for 1986, 2007, and 2013

TABLE A4.1 Married women's employment likelihood in Liberia, extended model, 1986

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Education level	–0.221	0.071	–3.11	0.002	–0.360	–0.082	***
Age	0.324	0.028	11.67	0.000	0.270	0.378	***
Number of children under age 5	0.058	0.025	2.33	0.020	0.009	0.107	**
Having any children	0.112	0.145	0.77	0.440	–0.172	0.395	
Husband's education level	–0.318	0.048	–6.68	0.000	–0.411	–0.225	***
Urban residence	1.444	0.091	15.89	0.000	1.266	1.622	***
Constant	–2.930	0.217	–13.50	0.000	–3.355	–2.504	***
Mean dependent variable		0.603	Standard deviation of dependent variable				0.489
Pseudo r-squared		0.182	Number of observations				3,055
Chi-square		542.040	Prob > chi-square				0.000
Akaike information criterion (AIC)		3372.619	Bayesian information criterion (BIC)				3414.791
Average marginal effects at the mean = .63							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A4.2 Married women's employment likelihood in Liberia, extended model, 2007

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Decision–making power	0.042	0.055	0.76	0.446	–0.066	0.149	
Education level	0.082	0.053	1.55	0.120	–0.021	0.186	
Age	0.177	0.023	7.71	0.000	0.132	0.222	***
Number of children under age 5	–0.101	0.030	–3.39	0.001	–0.160	–0.043	***
Having any children	0.199	0.162	1.22	0.221	–0.119	0.517	
Husband's education level	–0.053	0.046	–1.17	0.243	–0.142	0.036	
Husband has a high-skilled job	0.709	0.103	6.88	0.000	0.507	0.910	***
Head of household	–0.282	0.097	–2.91	0.004	–0.472	–0.092	***
Household Wealth Index quantile	0.011	0.038	0.28	0.776	–0.063	0.084	
Urban residence	–0.063	0.092	–0.69	0.493	–0.243	0.117	
Constant	–1.132	0.300	–3.77	0.000	–1.721	–0.544	***
Mean dependent variable		0.668	Standard deviation of dependent variable				0.471
Pseudo r-squared		0.078	Number of observations				3,696
Chi-square		339.175	Prob > chi-square				0.000
Akaike information criterion (AIC)		4355.359	Bayesian information criterion (BIC)				4429.939
Average marginal effects at the mean = .63							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A4.3 Married women's employment likelihood in Liberia, extended model, 2013

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Decision–making power	0.282	0.043	6.55	0.000	0.197	0.366	***
Education level	–0.033	0.041	–0.80	0.423	–0.114	0.048	
Age	0.218	0.018	11.99	0.000	0.182	0.253	***
Number of children under age 5	0.013	0.025	0.53	0.597	–0.036	0.063	
Having any children	0.069	0.150	0.46	0.646	–0.224	0.362	
Husband's education level	–0.001	0.035	–0.02	0.985	–0.070	0.069	
Husband has a high-skilled job	–0.080	0.070	–1.14	0.254	–0.217	0.057	
Head of household	0.182	0.075	2.43	0.015	0.035	0.329	**
Household Wealth Index quantile	–0.040	0.030	–1.35	0.175	–0.098	0.018	
Urban residence	–0.047	0.073	–0.64	0.525	–0.190	0.097	
Constant	–0.639	0.237	–2.69	0.007	–1.104	–0.174	***
Mean dependent variable		0.627	Standard deviation of dependent variable				0.484
Pseudo r-squared		0.033	Number of observations				5,549
Chi-square		229.536	Prob > chi-square				0.000
Akaike information criterion (AIC)		7109.084	Bayesian information criterion (BIC)				7181.919
Average marginal effects at the mean = .63							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A4.4 Average marginal effects for logit models of married women's employment likelihood in Liberia, extended model, 1986, 2007, 2013

Variable	1986	2007	2013
Education level	–0.0408*** (0.0130)	0.0171 (0.0110)	–0.00741 (0.00924)
Age	0.0599*** (0.00473)	0.0370*** (0.00466)	0.0487*** (0.00387)
Number of children under age 5	0.0107** (0.00459)	–0.0211*** (0.00621)	0.00299 (0.00565)
Having any children	0.0206 (0.0267)	0.0414 (0.0338)	0.0154 (0.0334)
Husband's education level	–0.0587*** (0.00860)	–0.0111 (0.00949)	–0.000151 (0.00792)
Urban residence	0.267*** (0.0141)	0.148*** (0.0209)	–0.0104 (0.0164)
Husband has a high–skilled job		–0.0589*** (0.0201)	–0.0179 (0.0157)
Household Wealth Index quantile		0.00223 (0.00785)	–0.00899 (0.00663)
Head of household		–0.0131 (0.0192)	0.0408** (0.0167)
Decision-making power		0.00871 (0.0114)	0.0630*** (0.00949)
Number of observations	3,055	3,691	5,549

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Note: Numbers in parentheses are standard errors.

Source: Authors' analysis based on Demographic and Health Survey data.

APPENDIX 5

Robustness analysis summary statistics for Liberia

TABLE A5.1 Summary statistics for robustness analysis, Liberia

Core variable	Maximum	Minimum	Mean	Average standard deviation	Percentage significance	Perc +	Perc –	Average *t*-level
Married	0.366	0.001	0.088	0.055	0.25	1	0	2.17
Education level	0.016	–0.070	–0.013	0.028	0.06	0.31	0.69	0.71
Age	0.272	0.190	0.210	0.013	1.00	1	0	16.97
Urban residence	0.352	0.164	0.246	0.049	1.00	1	0	5.15
Testing variable								
Household Wealth Index quantile	0.001	–0.099	–0.028	0.020	0.16	0.09	0.91	1.58
Having any children	0.428	0.131	0.191	0.096	0.13	1	0	2.32
Number of children under age 5	0.003	–0.036	–0.026	0.017	0.06	0.03	0.97	1.51
Husband's education level	–0.004	–0.050	–0.028	0.025	0.00	0	1	1.09
Husband has a high-skilled job	–0.153	–0.189	–0.170	0.050	1.00	0	1	3.39
Decision-making power	0.186	0.172	0.180	0.032	1.00	1	0	5.61

Note: The first three columns show the *maximum, minimum* and *mean* of the point estimate over all possible regressions. The fourth column shows the *average standard deviation* of the point estimates. *Percentage significance* is the share of regressions for which the coefficient was significant at the 95 percent confidence level. *Perc* + is the share of regressions with a positive point estimate (not necessarily significant), and *Perc* – is the share of regressions with a negative point estimate (not necessarily significant). *Average t-level* is the average *t*-value over all regressions.
Source: Authors' analysis based on Demographic and Health Survey data.

APPENDIX 6

Summary statistics at the baseline for Liberia for 1986 and Guinea for 1999

TABLE A6.1 Baseline summary statistics for Liberia, 1986, and Guinea, 1999

Statistic	Liberia 1986	Guinea 1999
Respondent's education level (median)	None or incomplete primary schooling	None or incomplete primary schooling
Respondent's age (median)	27	28
Urban residence (percent of respondents)	43	33
Number of observations	5,239	6,753

Source: Authors' analysis based on Demographic and Health Survey data.

APPENDIX 7

Logit model results for the counterfactual: Women's employment likelihood for the sample of all women in Guinea for 1999, 2005, and 2012

TABLE A7.1 Women's employment likelihood in Guinea, 1999

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Married	0.399	0.079	5.03	0.000	0.243	0.554	***
Education level	–0.313	0.041	–7.56	0.000	–0.394	–0.232	***
Age	0.028	0.002	13.22	0.000	0.024	0.032	***
Urban residence	0.695	0.070	9.88	0.000	0.557	0.833	***
Constant	–1.165	0.139	–8.38	0.000	–1.437	–0.892	***
Mean dependent variable			0.782	Standard deviation of dependent variable			0.413
Pseudo r-squared			0.106	Number of observations			6,753
Chi-square			630.116	Prob > chi-square			0.000
Akaike information criterion (AIC)			6339.890	Bayesian information criterion (BIC)			6373.979
Average marginal effects at the mean = .81							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A7.2 Women's employment likelihood in Guinea, 2005

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Married	0.600	0.071	8.49	0.000	0.462	0.739	***
Education level	–0.383	0.041	–9.45	0.000	–0.462	–0.303	***
Age	0.024	0.002	13.14	0.000	0.020	0.028	***
Urban residence	0.327	0.066	4.94	0.000	0.197	0.456	***
Constant	–0.600	0.140	–4.29	0.000	–0.874	–0.326	***
Mean dependent variable			0.778	Standard deviation of dependent variable			0.416
Pseudo r-squared			0.106	Number of observations			7,954
Chi-square			759.849	Prob > chi-square			0.000
Akaike information criterion (AIC)			7539.636	Bayesian information criterion (BIC)			7574.543
Average marginal effects at the mean = .80							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A7.3 Women's employment likelihood in Guinea, 2012

Employed	Coefficient	Standard error	*t*-value	*p*-value	[95% Confidence interval]		Significance
Married	0.440	0.062	7.09	0.000	0.319	0.562	***
Education level	–0.448	0.031	–14.27	0.000	–0.509	–0.386	***
Age	0.026	0.002	15.32	0.000	0.023	0.030	***
Urban residence	0.477	0.058	8.25	0.000	0.364	0.591	***
Constant	–0.880	0.125	–7.04	0.000	–1.125	–0.635	***
Mean dependent variable			0.722	Standard deviation of dependent variable			0.448
Pseudo r-squared			0.138	Number of observations			9,142
Chi-square			1237.784	Prob > chi-square			0.000
Akaike information criterion (AIC)			9324.057	Bayesian information criterion (BIC)			9359.660
Average marginal effects at the mean = .76							

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Authors' analysis based on Demographic and Health Survey data.

TABLE A7.4 Average marginal effects for logit models of women's employment likelihood in Guinea, 1999, 2005, 2012

Variable	1999	2005	2012
Married	0.0600*** (0.0119)	0.0911*** (0.0106)	0.0737*** (0.0103)
Education level	–0.0471*** (0.00611)	–0.0581*** (0.00599)	–0.0750*** (0.00502)
Age	0.00422*** (0.000302)	0.00365*** (0.000265)	0.00442*** (0.000273)
Urban residence	0.105*** (0.0104)	0.0496*** (0.0100)	0.0800*** (0.00962)
Probability at the mean	0.81	0.80	0.75
Number of observations	6,753	7,954	9,142

Notes

1. Acemoglu, Autor, and Lyle 2004.
2. Kreigbaum and Klasen 2015.
3. The study explores the Rwandan genocide, not the war with the Democratic Republic of the Congo.
4. El-Bushra and Sahl 2005.
5. Menon and Rodgers 2015.
6. Schweitzer 1980.
7. Justino et al. 2012a.
8. IISD 2019.
9. Mueller and Tobias 2016.
10. Imam 2019.
11. Acemoglu, Autor, and Lyle 2004.
12. Falch 2010.
13. Schweitzer 1980.
14. Specially trained interviewers administered the surveys. Respondents granted permission to record gender, age, respondents' relation to the household head, schooling, work, religion, marital status, health, contraceptive practices, and other personal characteristics. The interviews were conducted in a way to maximize respondents' privacy, and there is no identifier information to jeopardize their privacy. All figures reported here are calculated by using DHS population weights for the respective survey year.
15. Goldin 1991.
16. All labor force estimates in this section are drawn from the ILOSTAT database unless otherwise indicated. We used the World Bank's country income groups, and income is measured using gross national income in U.S. dollars after converting local currencies using the World Bank Atlas method.
17. Klasen 2019.
18. Brück and Schindler 2009.
19. Sabarwal, Sinha and Buvinic 2010.
20. Klugman and Quek 2018.
21. Dicke, Safavian, and Eccles 2019.
22. Jayachandran 2019.
23. Petesch 2013.
24. World Bank n.d. a.
25. Petesch 2011.
26. UNFPA 2020.
27. Kumar 2001.
28. Ashenfelter 1980.
29. Brück and Schindler 2009.
30. Kreibaum and Klasen 2015.
31. Petesch 2011.
32. Martinoty 2015.
33. Parker and Skoufias 2006.
34. Lim 2000
35. Sinha and Posadas 2010.
36. Cho and Newhouse 2011.
37. Mattingly and Smith 2010.
38. Mattingly and Smith 2010.
39. Cullen and Gruber 2000.
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41. Bosch 2016.
42. Martinoty 2015.
43. Değirmenc and İlkkaracan 2013.
44. Acemoglu, Autor, and Lyle 2004.
45. Basu, Genicot, and Stiglitz 2000.
46. Tripp 1992.
47. Cho and Newhouse 2011.
48. Sabarwal, Sinha, and Buvinic 2010.
49. Kim and Voos 2007.
50. Humphrey 1996.
51. Bhalotra and Umana-Aponte 2010. The study used data on 1.1 million women in 63 developing countries combined with data on country-level income.

52. Klugman and Quek 2018.
53. El-Bushra and Sahl 2005.
54. El-Bushra and Sahl 2005.
55. El-Bushra and Sahl 2005.
56. El-Bushra and Sahl 2005.
57. El-Bushra and Sahl 2005.
58. Menon and Rodgers 2015.
59. Justino et al. 2012a.
60. The study explores the Rwandan genocide, not the war with the Democratic Republic of the Congo.
61. Kumar 2001.
62. CARE Australia 2017.
63. Petesch 2011.
64. Petesch 2013.
65. Kreigbaum and Klasen 2015.
66. The study explores the Rwandan genocide, not the war with the Democratic Republic of the Congo.
67. El-Bushra and Sahl 2005.
68. World Bank national accounts data. GDP per capita (current US$) accessed January 2020 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD.
69. World Bank national accounts data. GDP per capita (current US$) accessed January 2020 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD.
70. World Bank national accounts data. GDP per capita (current US$) accessed January 2020 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD.
71. World Bank national accounts data. GDP per capita (current US$) accessed January 2020 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD.
72. World Bank national accounts data. GDP per capita (current US$) accessed January 2020 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD.
73. UCDP/PRIO; data are from 2009.
74. UCDP/PRIO n.d. d.
75. Minoiu and Shemyakina 2014.
76. Rwanda is unique, given the massive death toll of 800,000 to 1 million people from the genocide. It is estimated that immediately after the conflict, girls and women made up as much as 70 percent of the Rwandan population.
77. Lipowiecka and Kiriti-Nganga 2016.
78. World Bank n.d. b. Wage and salaried workers, female (% of female employment, modeled ILO estimate, accessed January 2020).
79. World Bank n.d. b. Wage and salaried workers, female (% of female employment, modeled ILO estimate, and male (% of male employment, modeled ILO estimate, accessed January 2020).
80. World Bank n.d. b. Employment in services, female (% of female employment, modeled ILO estimate, accessed January 2020).
81. ILO n.d. c.
82. ILO 2018a.
83. ILO 2018b.
84. World Bank n.d. b. Contributing family workers, female (% of female employment in 2019, accessed January 2020).
85. Justino et al. 2012 b.
86. IISD2019.
87. World Bank n.d. b. Labor force participation rates of women ages 15 and older (accessed January 2020).
88. Sabarwal, Sinha, and Buvinic 2010; Choudhry, Marelli, and Signorelli 2010.
89. PeacebuildingData.Org (accessed January 2020).
90. USCRI 2003.
91. World Bank 2008.
92. Shilue and Fagen 2014.
93. World Bank 2008.
94. Center for Systemic Peace 2018. The Fragility Matrix scores each country on two composite indicators, effectiveness and legitimacy, in four performance dimensions: security, political, economic, and social. The security, political, and social dimensions of each indicator are rated on a four-point fragility scale: 0 "no fragility," 1 "low fragility," 2 "medium fragility," and 3 "high fragility". The economic effectiveness indicator is rated on a five-point fragility scale (including 4 "extreme fragility"). The State Fragility Index combines scores on the indicators and ranges from 0 "no fragility" to 24 "extreme fragility."
95. UNDP 2019.
96. GIWPS 2019.
97. For 1986, we coded the employed variable as 1, employed, if a respondent answered that she was an employer, employee, or self-employed. We coded it as 0, unemployed, if a respondent answered that she was a student, housewife, or unemployed. For 2007 and 2013, we coded the employed variable as 1 if a respondent answered that she was currently employed. Low-skilled occupations include agriculture, livestock breeding, fishing, forest, household work, domestic work, and unskilled manual labor. Highly skilled occupations include professors, teachers, managers, clerical sales workers, service workers, and members of the armed services.
98. Bhalotra and Umana-Aponte 2010.

99. The Household Wealth Index is a composite measure of a household's cumulative living standards and is measured by the DHS team and ranges from "poorest" to "richest" quantiles. (USAID n.d.).
100. Bicchieri 2006.
101. Walter 2018.
102. Developed by Hou and Ma (2012).
103. Norton and Dowd 2018.
104. Appendix 2 shows logit results and the average marginal effects for the Liberian all women sample and appendix 3 for the married women sample. The results of the extended logit model for the married women sample are shown in appendix 4. Respondent's occupation and employment status outside the home were tested but not included in the logit model due to high collinearity with the likelihood of employment. The same holds for the State Fragility Index.
105. The results are statistically significant at the 99 percent confidence level.
106. Bhalotra and Umana-Aponte 2010.
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