


# THE “MISSING WOMEN” IN AFRICAN LABOR MARKETS

Andinet Woldemichael, African Development Bank

 @a\_woldemichael

In his 1990 and 1992 studies, the Nobel Laureate Amartya Sen showed that in some parts of the world—particularly in India and China—the ratio of women to men is conspicuously low. He estimated that about 100 million women were missing worldwide. He argued that discrimination and relative neglect of girls resulted in excess mortality among women. He epitomized these findings by coining the term “missing women.”

In Africa, where the gender gaps in work, earnings, productivity, assets, agency, etcetera lingers, Sen’s missing women notion is relevant today. Africa has a fairly active labor force. In 2018, the total labor force—population above the age of 15—was 481.6 million. While women constitute half of the population, they account for 43 percent (or 205.6 million) of the labor force, slightly higher than the world average of 40 percent. Not every person in the labor force participates in the labor market, either by not working or not actively seeking employment. In addition to the lack of employment opportunities and the demand for income, working-age individuals can become economically inactive because of marriage, fertility, disability, or chronic illness. Culture, religion, and social norms also matter for the inclusion or exclusion of individuals in the labor market, based on their race, religion, caste, and sex. In many parts of the

world, these factors conspire predominantly against women, disenfranchising them from the labor market.

About three-fourths of working-age men (76 percent)—both in the world and in Africa—actively participate in the labor market. But female labor force participation rates are 56 percent in Africa and 50 percent in the world. The difference between women’s and men’s participation rates then are 20 points in Africa and 26 points globally. African women are thus more active in the labor market compared with the world average. These continental figures mask variation across countries, ranging from 17 percent participation in Algeria to 86 percent in Rwanda. And at 24 percent, North Africa has one of the world’s lowest female rates.

Women’s low participation costs countries a lot in potential economic development. The International Monetary Fund found that reducing the gender gap in labor force participation to the average for emerging markets and developing economies in the Middle East and North Africa would have doubled their GDP growth over the past decade, with a cumulative output gain of US\$1 trillion (Purfield et al. 2018). Women’s low participation in the labor market is thus a question not just of fairness but of considerable economic importance.

## Determining how many women are missing

What would be the number of women in the labor market—the counterfactual—if female and male participation rates had been on par with high-income advanced countries in Europe and North America (the reference group)?

In 2018, the average female and male participation rates in the reference countries were 52 and 74 percent, respectively. Since the average rates for Africa are respectively 56 and 76 percent, above the reference rates, we would expect “excess women” in the aggregate labor market. Our interest, however, goes beyond estimating the continental counterfactual in the African labor market if participation rates were the same as in reference countries. We also estimate the counterfactuals for different African countries and highlight the heterogeneity for each age group.

Following Anderson and Ray (2010), for each age group  $a$ , let  $d^m(a)$  and  $d^w(a)$  represent the rates of nonparticipation for men and women. Similarly, let the average rates of nonparticipation for men and women in our reference countries be denoted by  $\hat{d}^m(a)$  and  $\hat{d}^w(a)$ , respectively. Then the reference rate for women, denoted by  $r^w(a)$ , which equalizes the relative gender-specific labor force

non-participation rates for each country to the reference countries, is given by

$$r^w(a) = \frac{\hat{d}^m(a) \times \hat{d}^w(a)}{\hat{d}^m(a)} \quad (1)$$

Then, the number of age-specific extra female non-participants (EFN) is given by

$$EFN(a) = [d^w(a) - r^w(a)]n^w(a) \quad (2)$$

which is the difference between the actual and reference relative non-participation rates for women, weighted by the number of women ( $n^w(a)$ ) in the corresponding age group.  $EFN(a)$  could be negative if a country has higher non-participation rate for women relative to the reference countries' average, or positive if a county has lower nonparticipation rate for women relative to the reference countries' average.

### The number of missing women

Of 49 countries in the analysis, 19 have a combined 44 million missing women. North African countries stand out, with about 28 million missing women in the labor market across all age groups of 15–64 years. About 15.7 million Egyptian working-age women are missing, taking the average rate of advanced countries in Europe and North America as the benchmark (table 1). Similarly, about 6 million Algerian, 5 million Mauritanian, 1.3 million Tunisian, and 151,000 Moroccan working-age women are missing from the labor market.

Women's labor market participation rate in many African countries is higher than in the reference countries. For instance, there are 13.8 million excess women in

**TABLE 1**  
**Estimated number of missing women in African labor markets, 2018**

	Age group						
	15+	15–24	25–34	35–44	45–54	55–64	65+
Egypt	15,710	894	4,452	3,854	2,322	657	-22
Algeria	5,974	477	1,463	1,434	996	-108	-179
Mauritania	4,903	501	1,403	1,300	573	117	-4
Tunisia	1,271	38	202	396	352	-16	-14
Morocco	151	-26	-56	-7	15	20	26
Ethiopia	1,401	-36	20	239	289	357	509
Nigeria	-13,800	-2,749	-8,134	-4,322	-1,555	-284	353
Africa	-7,252	-7,533	-8,187	481	2,333	716	1,652

Source: Author's computation using ILOSTAT.

the Nigerian labor market. Similarly, about 30 of 49 African countries have a total of 51.3 million excess women in the labor market. Overall, Africa would have 7.3 million excess women in its labor market, if male and female labor force participation rates had been equal to the average rates in the reference countries. What is striking for the continent is that the number of excess women is fully accounted by women in the age group of 15–34 at 15.7 million, with about 5.2 million missing women in the age bracket of 35 and above.

The results paint a picture of how women can be excluded from economic opportunities to fulfill expected social, marital, fertility, and other family commitments. Many women are still forced to exit the labor market due to having children, and in the absence of services such as child daycare, they have to care for their children after childbearing. Women are also responsible for domestic chores, including cooking, cleaning, collecting wood, and providing care for elderly parents, which are nonmarket activities outside the labor market.

If countries with higher participation rates for women and those with lower rates match the reference countries, Africa stands to gain an additional 44 million women actively participating in its labor markets. The gains range from an additional 1 percent of the current women labor force in Senegal to a whopping 213 percent in Egypt and 238 percent in Algeria.

Figure 1 shows the cartograms of actual (left panel) and counterfactual (right panel) female labor force. The geometry is distorted according to the size of the labor force, providing nice visual information. The counterfactual female labor force, particularly in North Africa, is much higher when the participation rates for women are on par with the reference countries.

### *A simple estimation of potential GDP gains from higher female participation*

We applied a very simple approach to estimate the gains in GDP if the missing women were brought back to the labor

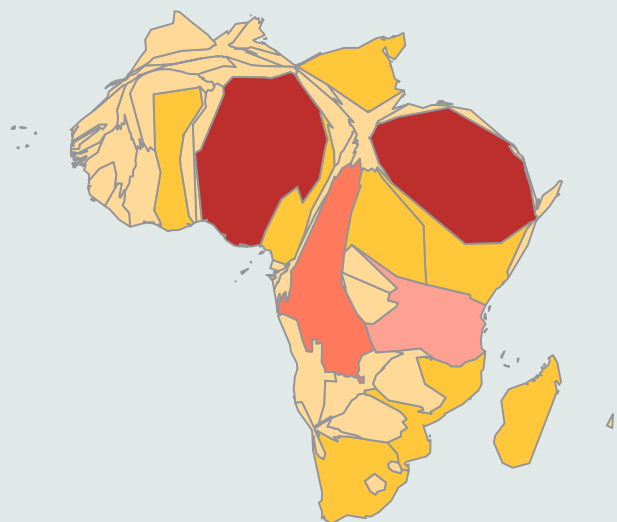
## FOCUS 5

**FIGURE 1**  
**Africa's actual and counterfactual female labor force, 2018**

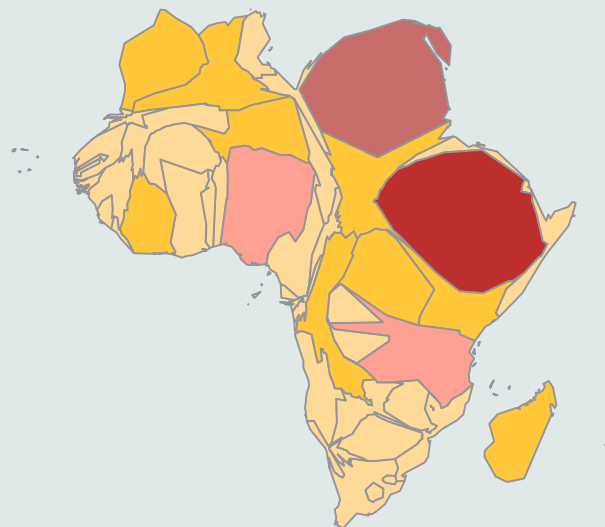
Labor force (millions)

0-5 5-10 10-15 15-20 20-25 25-30

Actual



Counterfactual



*Note:* The size of each country is proportional to the size of its female labor force rather than its area. Therefore, countries with larger female labor forces appear larger relative to the standard Africa map. The left panel shows actual female labor force data for 2018. The right panel shows the counterfactual female labor force data for 2018.

*Source:* Author's calculations using World Development Indicators and ILOSTAT data.

market. We estimated the potential gain in GDP for two scenarios. In one scenario we consider a situation where all African countries readjust the participation rates of women and men to rates equivalent to the reference countries. We then estimate the potential gains or losses from the readjustment of labor market participation by gender. In a second scenario, we readjust the labor force participation rates for only countries with currently missing women problem (19 countries) and make no readjustment for countries with excess women (30 countries).

Several simplifying assumptions are in order. Assume first that the current GDP per worker remains constant regardless of the readjustment in both labor force participation rates and relative

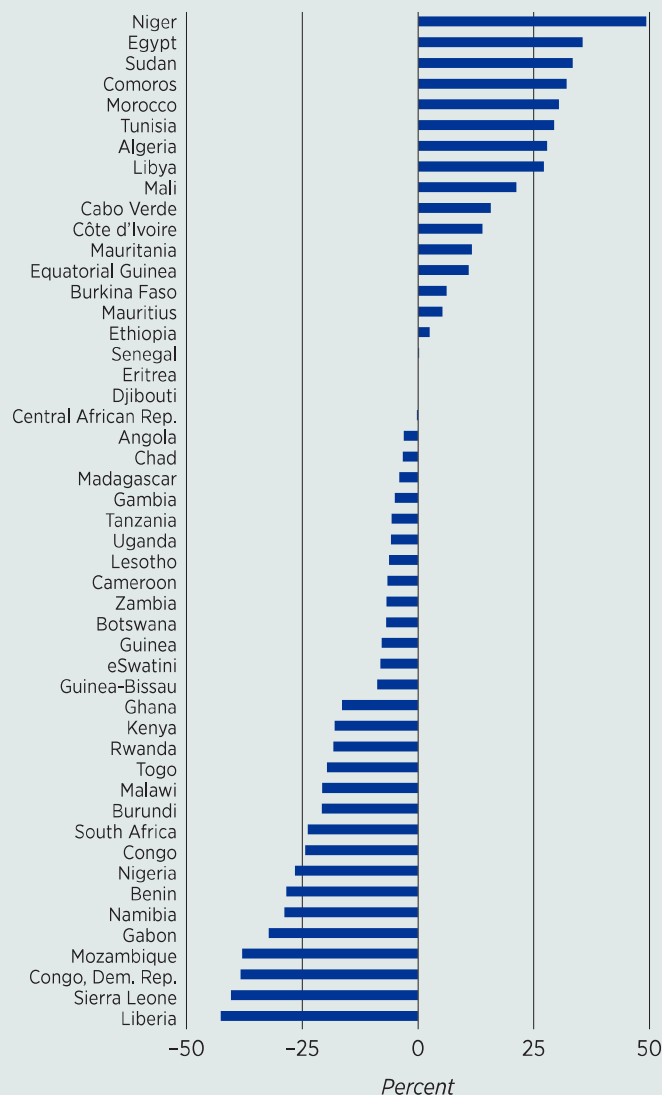
male–female rates. The simplistic approach also implicitly presumes that workers have the same productivity regardless of the sector of employment and their gender. Also keep the current level of unemployment constant for both men and women and assume that there is enough work for the additional women in the labor market. There also are several channels for increasing the participation rate of women and or reshuffling of the workforce along gender lines that could affect aggregate output and welfare. But for the sake of this simple exercise, assume away all these factors. We then use GDP data from the World Bank World Development Indicator (WDI) and employment data from the ILOSTAT, and estimate the potential gains and losses for 2017. GDP values are in US\$ in 2011

prices and adjusted for purchasing power parities (ppp). Two countries, Djibouti and Eritrea, dropped out from the estimation due to missing data.

This simple calculation shows huge potential gains from increasing women's labor market participation in countries with missing women. The positive gains in GDP range from less than 1 percent in Senegal to 50 percent in Niger (figure 2). Not surprisingly, North African countries—Egypt, Sudan, Morocco, Tunisia, Algeria, and Libya—would have a 27 to 36 percent higher GDP if women's and men's participation rates were equal to the relative rates in the reference countries.

If all African countries readjusted their relative women's and men's participation

**FIGURE 2**  
**Potential gains and losses in GDP from women's labor market participation, 2017**



Source: Author's calculations using World Development Indicators and ILOSTAT data.

rates, as in scenario one, to the level of the reference countries, Africa's GDP would have increased by 6.7 percent from the current level or by US\$384 billion (in 2011 prices, ppp). If countries with missing women readjust their participation rates to the average rates of developed countries in Europe and

North America, and countries with excess women maintain their current rates, Africa would gain as much as US\$ 924 billion in GDP (in 2011 prices, ppp), or about 16 percent of current GDP. Almost half the potential gain is accounted for by Egypt, which would have an additional US\$ 441 billion in GDP. So,

while women are more active in Africa in general, a large number of women are shunted from the labor market in many African countries—notably, in North Africa. This costs countries significant potential GDP gains.

Although women's labor market participation in the majority of African countries is commendable, the continent lags behind the world in many other dimensions. Gender disparities in quality of employment (formal or informal), wages, productivity, rights, and so on are large and widespread. So, as much as gender-inclusive labor market policies should aim to remove barriers to achieve full participation of women, equal emphasis should be given to narrowing the disparities in several other dimensions of employment and rights.

## References

- Anderson, S., and D. Ray. 2010. "Missing Women: Age and Disease." *Review of Economic Studies* 77(4), 1262–1300.
- Anderson, S., and D. Ray. 2015. "Missing unmarried women." *Journal of the European Economic Association*.
- Purfield, M., M. H. Finger, M. K. Ongley, M. B. Naduel, C. Castellanos, M. G. Pierre, and M. E. Roos. 2018. *Opportunity for all: promoting growth and inclusiveness in the Middle East and North Africa*. Washington, DC: International Monetary Fund.
- Sen, A. 1990. "More than 100 million women are missing." *New York Review of Books*, 37 (20).
- Sen, A. 1992. "Missing women." *British Medical Journal*, 304, 587–588.