

The Future of Labor Supply and Demographics in Egypt: Impending Challenges and Untapped Potential

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In a nutshell

- Demographic pressures on Egypt's labor supply have decreased.
- The "youth bulge" generation are young adults now, their labor market entry complete, while the "echo" of the youth bulge is school-aged.
- Fertility, which had declined in Egypt and then risen, has once again fallen. The total fertility rate (births per woman), which was 3.5 in 2012-2014, fell to 3.1 in 2018.
- Labor force participation rates declined from 51% in 2012 to 48% in 2018.
- Employment rates declined from 47% to 44% over 2012 to 2018.
- Standard unemployment rates remained stable, but discouraged unemployment increased in 2018.

Demographics and Participation Drive Labor Supply

Egypt's potential labor supply depends, first and foremost, on the growth and changing composition of its working-age population. These demographic trends, together with labor force participation patterns, determine labor supply. Ultimately, labor market outcomes are determined by the interaction between labor supply and labor demand.

Historically, Egypt had experienced a large youth bulge, which placed substantial pressures on the labor market (Amer 2009, 2015; Assaad and Krafft 2015). By 2012, the youth bulge cohorts were largely young adults, beginning to form families of their own, creating a demographic "echo." The echo was compounded by an increase in fertility (Krafft and Assaad 2014). New data from 2018 demonstrates that demographic pressures are easing; labor market entrants are fewer, due to the demographic "trough" being labor-market-entry age. Moreover, fertility, after rising,

has fallen back to lower levels (Krafft, Assaad, and Keo 2019). However, the echo generation is placing substantial pressures on the education system and will soon create new labor supply pressures.

Labor force participation has decreased for both men and women in Egypt. The decrease in men’s participation is a new development, but women’s declining participation has been a long-term trend (Krafft, Assaad, and Keo 2019). Despite rising educational attainment, which usually yields increased female labor force participation (Assaad et al. 2018), educated women’s participation continues to fall.

Labor force participation has two components: employment and unemployment. Decreases in employment rates are driving declining labor force participation in Egypt. A large share of young men and women are “not in education, employment or training” (NEET) (Amer and Atallah 2019). Unemployment rates remained stable, although discouraged unemployment, those who want to work but have given up searching for jobs, increased (Krafft, Assaad, and Keo 2019).

The declines in labor force participation mean that the potential contributions of a large share of Egypt’s increasingly educated population are untapped. These declines are occurring in a context of reduced demographic pressure, and challenges in addressing them will only worsen when the “echo” generation begins to enter the labor market. Creating a conducive business environment that can generate good jobs is critically important to engaging all of Egypt’s human potential.

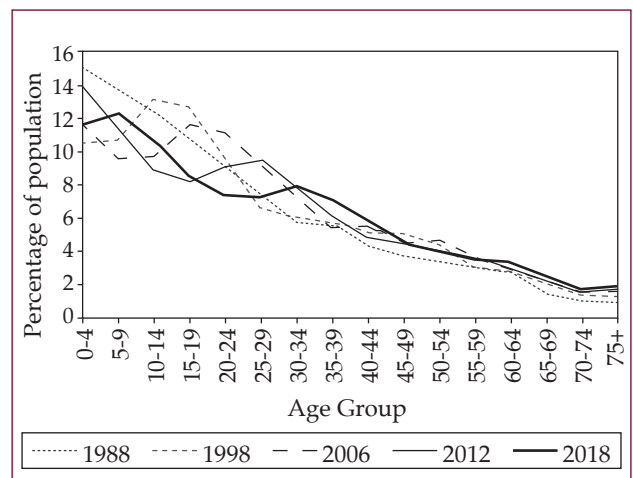
The youth bulge has aged, but the echo has grown

Since 1988, a key characteristic of Egypt’s changing demographics has been the development of a youth bulge, a disproportionate share of young people in the population (Figure 1). Egypt’s youth bulge occurred when mortality fell but there was a lag before fertility decreased (Assaad and Roudi-Fahimi 2007;

Miller and Hirschhorn 1995; Rashad 1989; Robinson and El-Zanaty 2006). In 1988, the youth bulge generation were children. By 1998, the peak of the youth bulge was aged 10-19 and began placing substantial pressure on the labor market. In 2006, the peak was aged 15-24, further pressuring the labor market. Yet by 2012, demographic pressures on the labor market began to abate, as the peak of the youth bulge was 25-29 and had largely entered the labor market. In 2018, the peak of the youth bulge was aged 30-34, and left a trough of reduced labor supply pressures with a smaller population aged 20-29.

Figure 1. Egypt’s youth bulge has aged, but the echo has grown

Population structure of Egypt (percentage in five-year age group), by wave



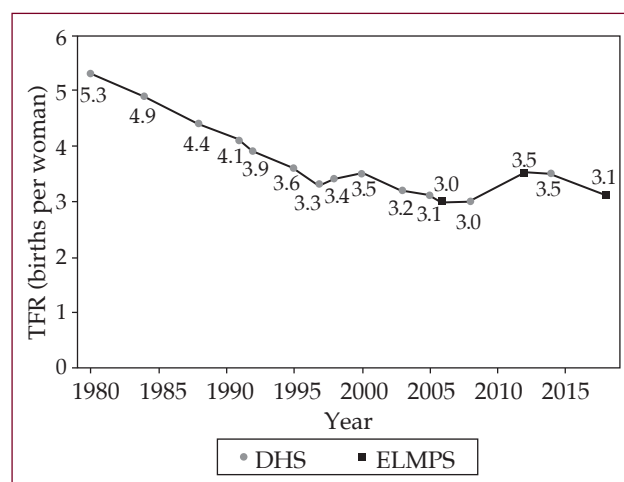
Source: Krafft, Assaad, and Keo (2019) based on data from the Labor Force Survey (LFS) 1988 and Egypt Labor Market Panel Survey (ELMPS) 1998-2018

As the children of the youth bulge generation reached adulthood, they begin to have children of their own, creating an echo generation. In 2012, we can see the beginning of an echo generation, with a second peak in the population aged 0-4. The growth of the echo was compounded by rising fertility rates (Figure 2). The Demographic and Health Surveys (DHSs) demonstrated a decrease in fertility over time, to a total fertility rate (TFR) of 3.0 in 2008. Yet the 2012 Egypt

Labor Market Panel Survey (ELMPS) and the 2014 DHS both indicated a rise in fertility to 3.5 births per woman. The new, 2018 wave of the ELMPS provides important new evidence that fertility is once again declining, falling to 3.1 births per woman.

Figure 2. After a rise in fertility in 2012-2014, fertility fell by 2018

Total fertility rate (births per woman) over time



Source: Krafft, Assaad, and Keo (2019) based on data from DHS and ELMPS 2006-2018

Why has fertility resumed its decline? After a period of rising ages at marriage, women had, more recently, been marrying at somewhat earlier ages, especially from ages 20-28. This shift may have contributed to rising fertility rates. There are some signs of this trend now stabilizing (Krafft, Assaad, and Keo 2019). Fertility declines from 2012 to 2018 were concentrated at older ages (25 and up). Contraceptive prevalence rates increased. Among currently married women aged 15-49, 62.6% were taking steps to prevent pregnancy in ELMPS 2018 (Krafft, Assaad, and Keo 2019), compared to only 58.5% in the DHS 2014 (Ministry of Health and Population, El-Zanaty and Associates, and ICF International 2015). Whether this demographic trend of falling fertility continues, stalls and stabilizes, or reverses again will have enormous implications for the health and education systems in the near term and the labor market in the

long term. The echo generation was aged 5-9 in 2018, placing intense pressures on the education system. By the end of the 2020s, these same children will reach working age, bringing another wave of labor supply pressures.

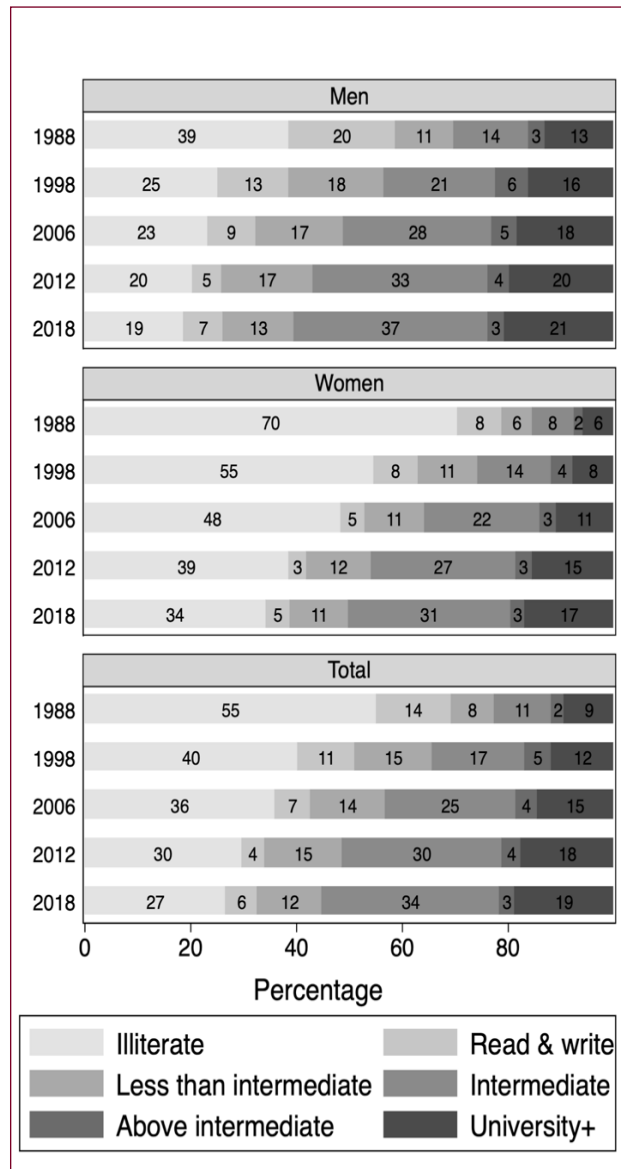
Egyptians are increasingly, and more equitably, educated

Egypt had some of the fastest growth in the world in years of schooling from 1980-2010 (Campante and Chor 2012). From 1980 to 2010, the average years of education grew from 2.7 to 7.1 (Campante and Chor 2012). Among those aged 25-64 in 2018, men averaged 9.3 years of school and women 7.6 (the average was 8.4 overall) (Krafft, Assaad, and Keo 2019). The years of schooling had slowed its growth for recent cohorts, and there was still a gender gap of a year of schooling between men and women born in the early 1990s. However, in both 2012 and 2018 there was less than a percentage point difference in enrollment between girls and boys aged 6-17, suggesting that as these generations complete school, Egypt may close its gender gap in education.

Egypt's expansion in education has been driven primarily by an increase in intermediate (upper secondary) education (Figure 3). While in 1988, just 11% of the population aged 25-64 had an intermediate degree (14% of men and 8% of women), by 2018 this had increased to 34% (37% of men and 31% of women). Illiteracy rates correspondingly fell from 55% (39% for men and 70% for women) in 1988 to 27% in 2018 (19% for men and 34% for women). Although, as of 2018, there remained a substantial share, primarily of older adults, who were illiterate, at 27% this was no longer the most common education level, intermediate (34%) now dominates. Egypt's increasingly educated labor force has substantial potential to contribute to the economy and society – but, as we will see below, much of that potential remains untapped.

Figure 3. Egyptians are increasingly educated – and women are catching up with men

Educational attainment (percentage), by sex and wave, ages 25-64



Source: Krafft, Assaad, and Keo (2019) based on data from ELMPS 1998-2018

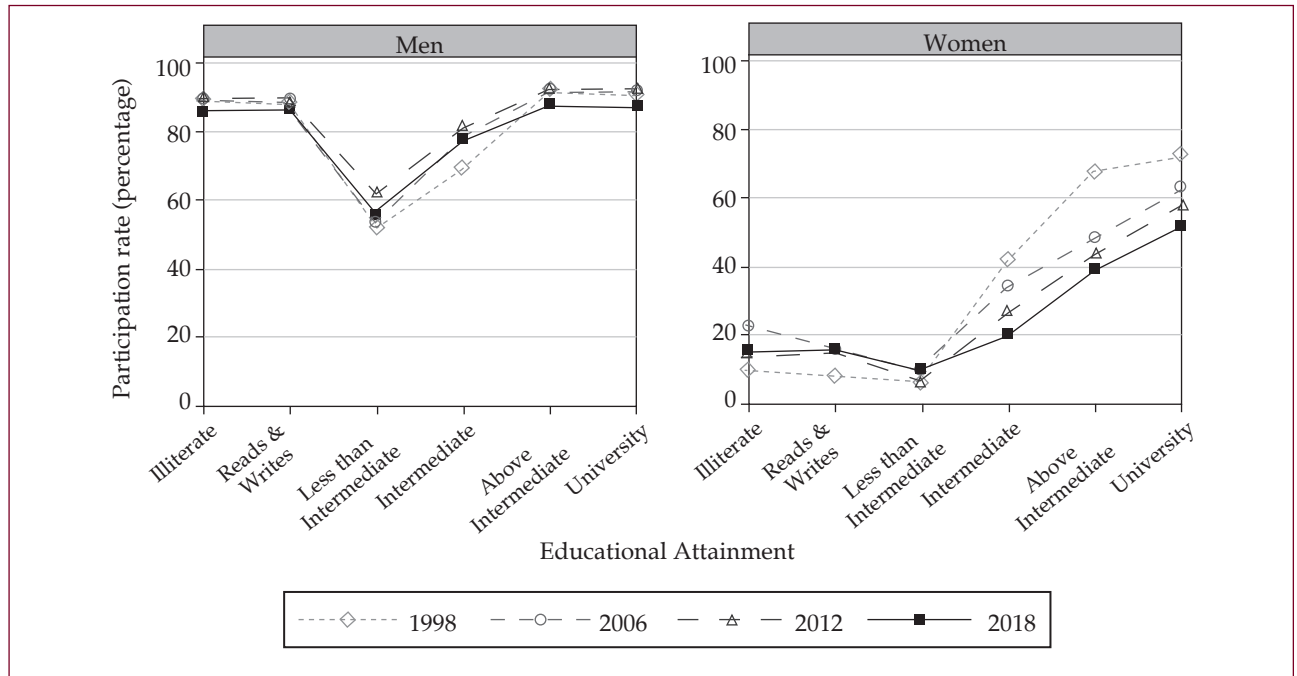
Labor force participation fell, especially for educated women

Despite decreases in demographic pressures, labor force participation rates in Egypt have fallen. Labor force participation (using the standard [search required], market definition) was at a high of 52% in 2006, fell to 51% in 2012, and dropped further to 48% in 2018, according to the ELMPS (Krafft, Assaad, and Keo 2019). Women’s participation declined from 27% in 2006 to 23% in 2012 and 21% in 2018. We would expect that as Egyptian women become more educated, their labor force participation would similarly increase. This is not happening in Egypt, in part due to the decline of the public sector (women’s preferred employer), the low quality of jobs created by the private sector, and the difficulties women face reconciling domestic responsibilities with work (Assaad et al. 2018; Assaad, AlSharawy, and Salemi 2019; Assaad, Krafft, and Selwaness 2017; Barsoum 2015; Selwaness and Krafft 2018).

A new development, as of 2018, is that men’s participation has decreased as well, falling from 80% in 2012 to 76% in 2018 (Krafft, Assaad, and Keo 2019). This trend has been corroborated by Egypt’s labor force surveys (LFSs) (Krafft, Assaad, and Rahman 2019). Participation declined slightly for men of all education levels (Figure 4). Educated women’s participation has steadily fallen, while less educated women have continued to participate at low rates. For instance, women with an intermediate education participated at rates above 40% in 1998, but by 2018, only 20% of this (increasingly large) group participated.

Figure 4. Participation steadily declined for educated women, and recently for all men

Labor force participation rate (percentage), standard market definition, by education, sex and wave, ages 15-64



Source: Krafft, Assaad, and Keo (2019) based on data from ELMPS 1998-2018

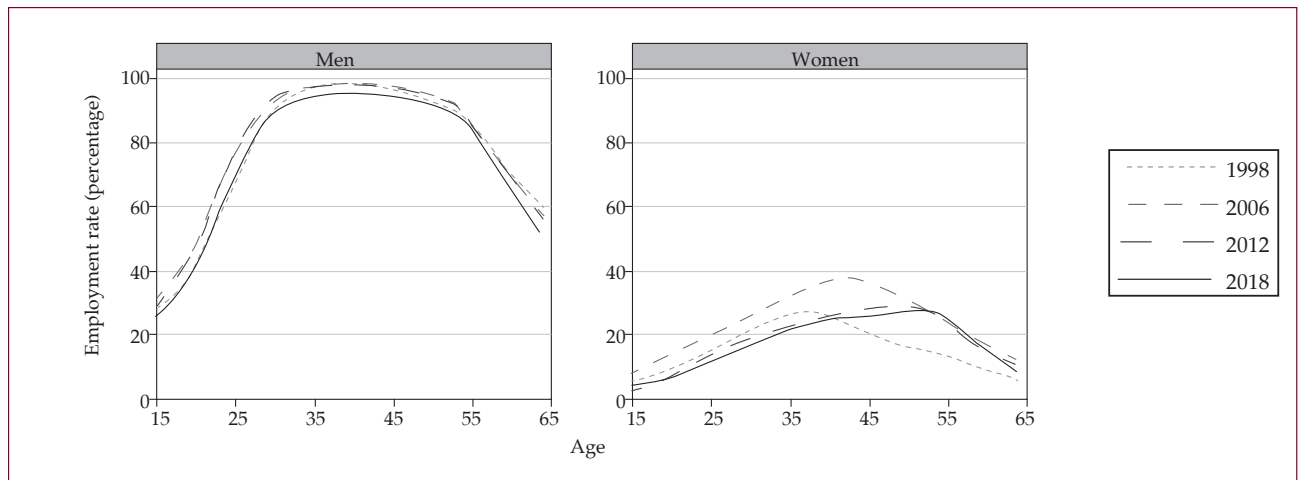
Employment rates fell, especially for youth

Labor force participation has two components: employment and unemployment. The decline in participation in Egypt has been driven by a decrease in employment. Employment rates declined from 47% to 44% overall (Krafft, Assaad, and Keo 2019). Women’s employment was as high as 22% in 2006, but declined to 18% in 2012 and 17% in 2018. Men’s employment peaked at 77% in 2012 but fell to 72% in 2018.

The declines in employment occurred especially for youth and to some extent at prime working ages for men (Figure 5). For women, employment declined for youth through age 55. The low rates of employment of youth and increasingly educated women are particularly concerning as under-utilization of Egypt’s human resources. A large share of young people are NEET (Amer and Atallah 2019). The share of women aged 25-29 who are NEET has risen from 76% in 2006 to 82% in 2018, while the share of young men who are NEET rose in all age groups from 15-29, from 7.2% to 8.9%.

Figure 5. Employment rates fell and are particularly low for young women

Employment rate (percentage), market definition, by sex, age and wave, ages 15-64



Source: Krafft, Assaad, and Keo (2019) based on data from ELMPS 1998-2018

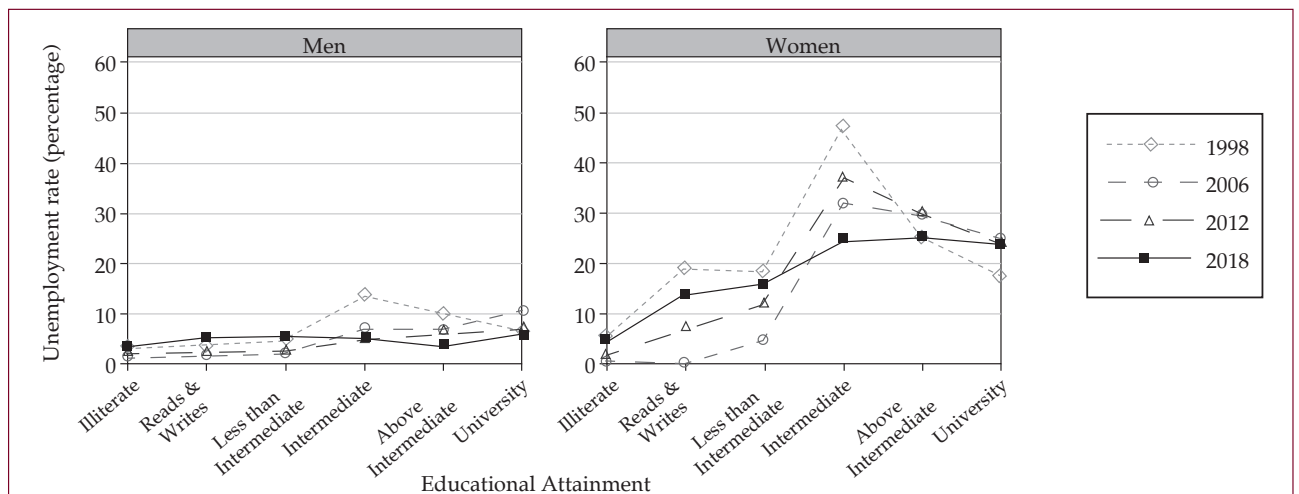
Standard measures of unemployment are stable, but discouraged unemployment increased

Unemployment in 2018 (8.2%) was similar to 2012 (8.7%), using the standard (search required) market definition (Krafft, Assaad, and Keo 2019). Unemployment increased slightly for men, from 4.2% in 2012 to 4.9% in 2018. It fell for women, from 23.7% to 19.5% over 2012 to 2018. The LFSs captured additional rising and then falling unemployment in the interim between 2012 and 2018 (Krafft, Assaad, and Rahman

2019). At over 20%, unemployment rates remained highest for educated women (Figure 6). Comparing 2018 to 2012, unemployment rates fell for educated men but rose for less educated (and younger) men. Unemployment rates for women were stable for university graduates, fell for above intermediate and intermediate graduates, and rose for less educated women. Unemployment also continued to extend into older ages for women, as fewer young women worked.

Figure 6. Unemployment rates fell for the educated and rose for the less educated

Unemployment rate (percentage), standard market definition, by highest education, sex and wave, ages 15-64



Source: Krafft, Assaad, and Keo (2019) based on data from ELMPS 1998-2018

Although the standard unemployment rate was fairly stable, the broad unemployment rate, which includes the discouraged, rose, from 9.6% to 11.1% over 2012 to 2018. The increase occurred for both men (from 4.7% to 5.8%) and women (from 25.8% to 27.8%). The rise in broad unemployment suggests Egyptians are increasingly discouraged about their job opportunities. While they would like to work, they have given up on searching in light of the available jobs.

Making Use of Egypt's Human Potential

Egypt must take advantage of the window of reduced demographic pressures. The youth bulge has aged and the echo is still school-aged. This provides an important window of opportunity with reduced demographic pressures to try to address long-standing structural labor market challenges. Despite reduced demographic pressures, labor force participation and employment have fallen. Unemployment has remained steady, but discouraged unemployment has risen. These are all signs of a weak, labor-absorbing paradigm on the demand side of the labor market (Assaad, Yassin, and Krafft 2018).

To make full use of its human potential, Egypt must create good jobs that will attract its increasingly educated youth. Private sector jobs that are reconcilable with women's domestic responsibilities are crucial, as marriage and its domestic responsibilities are a major constraint on women's participation. Either the private sector must have greater flexibility or domestic responsibilities must be reduced. Time-saving technologies and a greater role for men in the home are both solutions to the latter, while job-sharing and home-based employment show potential to address the former constraint (Krafft and Assaad 2015). The business environment for the economy as a whole, and competition particularly, play an important role in job creation (Assaad, Yassin, and Krafft 2018; Krafft and Assaad 2015).

References

- Amer, Mona. 2009. "The Egyptian Youth Labor Market School-to-Work Transition, 1988-2006." In *The Egyptian Labor Market Revisited*, edited by Ragui Assaad, 177–218. Cairo, Egypt: The American University in Cairo Press.
- . 2015. "Patterns of Labor Market Insertion in Egypt, 1998-2012." In *The Egyptian Labor Market in an Era of Revolution*, edited by Ragui Assaad and Caroline Krafft, 70–89. Oxford, UK: Oxford University Press.
- Amer, Mona, and Marian Atallah. 2019. "The School to Work Transition and Youth Economic Vulnerability in Egypt." *Economic Research Forum Working Paper Series (Forthcoming)*. Cairo, Egypt.
- Assaad, Ragui, Abdelaziz AlSharawy, and Colette Salemi. 2019. "Is The Egyptian Economy Creating Good Jobs? Job Creation and Economic Vulnerability from 1998 to 2018." *Economic Research Forum Working Paper Series (Forthcoming)*. Cairo, Egypt.
- Assaad, Ragui, Rana Hendy, Moundir Lassasi, and Shaimaa Yassin. 2018. "Explaining the MENA Paradox: Rising Educational Attainment, Yet Stagnant Female Labor Force Participation." *IZA Discussion Paper Series No. 11385*. Bonn, Germany.
- Assaad, Ragui, and Caroline Krafft. 2015. "The Evolution of Labor Supply and Unemployment in The Egyptian Economy: 1988-2012." In *The Egyptian Labor Market in an Era of Revolution*, edited by Ragui Assaad and Caroline Krafft, 1–26. Oxford, UK: Oxford University Press.
- Assaad, Ragui, Caroline Krafft, and Irene Selwaness. 2017. "The Impact of Marriage on Women's Employment in the Middle East and North Africa." *Economic Research Forum Working Paper Series No. 1086*. Cairo, Egypt.
- Assaad, Ragui, and Farzaneh Roudi-Fahimi. 2007. "Youth in the Middle East and North Africa: Demographic Opportunity or Challenge?" *Population Reference Bureau Policy Brief*. Washington, DC.

- Assaad, Ragui, Shaimaa Yassin, and Caroline Krafft. 2018. "Job Creation or Labor Absorption? An Analysis of Private Sector Job Growth by Industry in Egypt." *Economic Research Forum Working Paper Series No. 1237*. Cairo, Egypt.
- Barsoum, Ghada. 2015. "Young People's Job Aspirations in Egypt and the Continued Preference for a Government Job." In *The Egyptian Labor Market in an Era of Revolution*, edited by Ragui Assaad and Caroline Krafft, 108–126. Oxford, UK: Oxford University Press.
- Campante, Filipe R, and Davin Chor. 2012. "Why Was the Arab World Poised for Revolution? Schooling, Economic Opportunities, and the Arab Spring." *Journal of Economic Perspectives* 26 (2): 167–188.
- Krafft, Caroline, and Ragui Assaad. 2014. "Beware of the Echo: The Impending Return of Demographic Pressures in Egypt." *Economic Research Forum Policy Perspective No. 12*. Cairo, Egypt.
- . 2015. "Promoting Successful Transitions to Employment for Egyptian Youth." *Economic Research Forum Policy Perspective No. 15*. Cairo, Egypt: Economic Research Forum.
- Krafft, Caroline, Ragui Assaad, and Caitlyn Keo. 2019. "The Evolution of Labor Supply in Egypt from 1988-2018: A Gendered Analysis." *Economic Research Forum Working Paper Series (Forthcoming)*. Cairo, Egypt.
- Krafft, Caroline, Ragui Assaad, and Khandker Wahedur Rahman. 2019. "Introducing the Egypt Labor Market Panel Survey 2018." *Economic Research Forum Working Paper Series (Forthcoming)*. Cairo, Egypt.
- Miller, Peter, and Norbert Hirschhorn. 1995. "The Effect of a National Control of Diarrheal Diseases Program on Mortality: The Case of Egypt." *Social Science & Medicine* 40 (10): S1–S30.
- Ministry of Health and Population, El-Zanaty and Associates, and ICF International. 2015. "Egypt Demographic and Health Survey." Cairo, Egypt: Ministry of Health and Population and ICF International.
- Rashad, Hoda. 1989. "Oral Rehydration Therapy and Its Effect on Child Mortality in Egypt." *Journal of Biosocial Science* 21 (S10): 105–113.
- Robinson, Warren, and Fatma El-Zanaty. 2006. *The Demographic Revolution in Modern Egypt*. Lanham, MD: Lexington Books.
- Selwaness, Irene, and Caroline Krafft. 2018. "The Dynamics of Family Formation and Women's Work: What Facilitates and Hinders Female Employment in the Middle East and North Africa?" *Economic Research Forum Working Paper Series No. 1192*. Cairo, Egypt.

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