

Estimates and forecasts of  
poverty by sex and age at  
the global, regional and  
national level

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# Introduction

- Poverty has been conventionally measured using a monetary measure based on income or consumption and collected at the household level.
- Data are collected on the total consumption or total income of each household, not of each individual living in those households.
- The household-level welfare estimate is attributed to all individuals living there.
- Due to the above shortcoming, household level measures alone may not reveal the extent to which women and men experience poverty differently on an individual level. Despite these limitations, household level data disaggregated by sex and age can nevertheless reveal meaningful differences in the way women, men, girls and boys experience poverty.
- This is especially crucial in the context of the COVID-19 pandemic which has shown substantial gendered impacts.
- In our presentation, we will present key insights from joint work by UN Women, UNDP and the Pardee Center for International Futures on projecting poverty by sex and age at the global, regional and country level.
- The presentation, in addition to discussing the sex/age differentials using the \$1.90 poverty line, will also discuss projections of poverty by sex at \$3.20, \$5.50 and national poverty lines.

# Snapshot of survey data availability on poverty by sex and age (as of 2018)

- For the first time, data on extreme poverty was disaggregated by sex and age for 89 countries (through a UN Women and World Bank collaboration)
- Focus was on per capita household income/consumption converted to 2011 PPP.
- Results emphasized the need for a life cycle approach when analyzing gender differences in poverty
- Key limitation: Only regional and global aggregates were released for public consumption, no national estimates were released

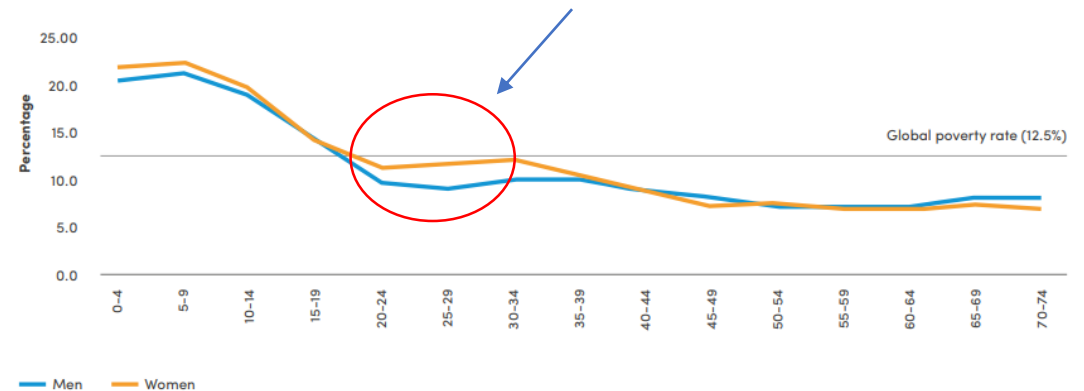


GENDER DIFFERENCES IN  
POVERTY AND HOUSEHOLD  
COMPOSITION THROUGH  
THE LIFE CYCLE



FIGURE 1

## POVERTY RATES BY SEX AND AGE GROUPS



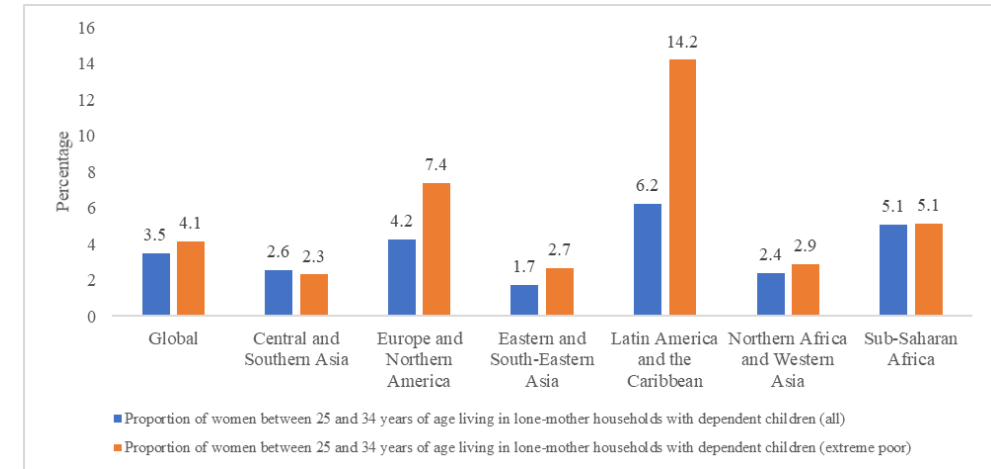
Source: World Bank staff calculations based on the GMD.  
Note: Sample of 89 countries.

# Snapshot of survey data availability on poverty by sex and age (as of 2019)

- Data on extreme poverty disaggregated by sex and age was updated for 91 countries (through a phase II of UN Women and World Bank collaboration)
- Phase II focused on updating the findings with latest database and adding additional disaggregation such as by household composition
- Findings enriched the original analysis by showing that household demographic structure is integral in profiling poverty
- Key limitation: Only regional and global aggregates were released for public consumption, no national estimates were released

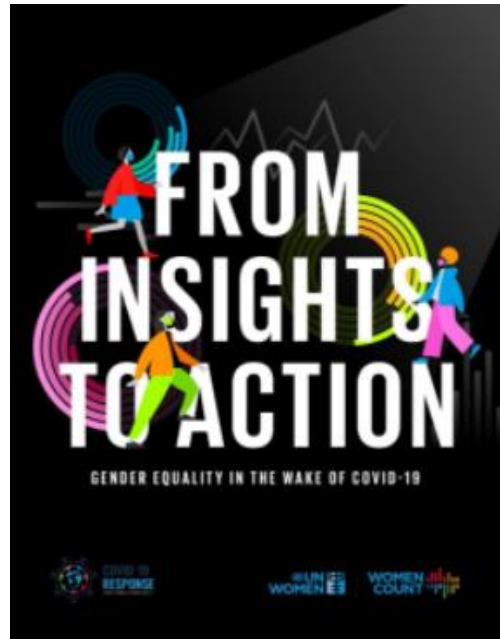
The screenshot shows the World Bank eLibrary interface. At the top, there is a search bar and navigation links for Home, Regions, Topics, Collections, Data, Recommended Readings, and About. Below the navigation is a banner for 'Books' with a row of book covers. The main content area displays the title 'A Global View of Poverty, Gender, and Household Composition' by Ana María Muñoz Boudet, Antra Bhatt, Ginette Azcona, Jayne Yoo, and Kathleen Beegle. It includes the publication date (February 2021), a PDF download link (1 MB), and a share button. The abstract is partially visible, starting with 'The share of the world's population living on less than €1.90 a day has been cut by more than half'.

Figure 2: In some regions, lone mothers are especially vulnerable to being poor



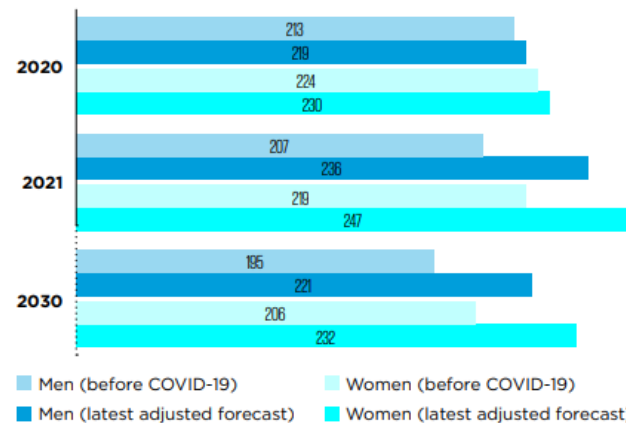
# Projections of extreme poverty by sex and age (as of 2020)

- UN Women collaborated with UNDP and the Pardee Center for International Futures to produce estimates and projections of extreme poverty by sex and age using the International Futures Model
- Estimates covered 186 countries and areas and are the first available dataset on extreme poverty by sex and age available for public consumption. Since the estimates were released during the COVID-19 pandemic, COVID-19-adjusted extreme poverty headcounts resulting from the IMF's June 2020 downward revision in global economic growth were also included.
- The dataset helped to fill critical data gaps during the pandemic by bringing forth attention to the disproportionate impact of the pandemic on women and girls.



## Gender poverty gaps will worsen by 2030

Among those aged 15+, women will still be the majority of the extreme poor in 2030.



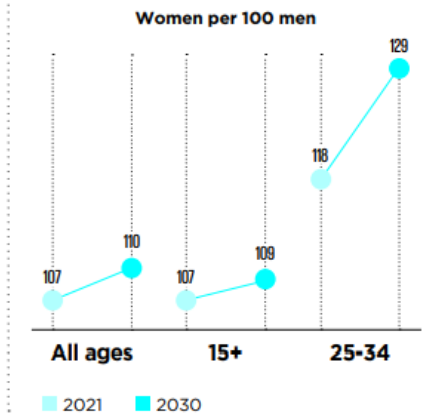
By 2030, the global gender poverty gap for ages 25 to 34 will worsen from:

**118** women

for every 100 men in 2021 to

**121** women.

In South Asia, the gender poverty gap will worsen further still:



# Projections of extreme poverty by sex and age (as of 2021)

- UN Women continued the collaboration with UNDP and the Pardee Center for International Futures to produce estimates and projections of extreme poverty by sex and age using the International Futures Model. This time the estimates and projections were extended to \$3.20, \$5.50 per person per day as well as National Poverty line-based estimates
- Current dataset is a limited release with only the global and regional averages being released. Full dataset with national estimates will be released in Fall 2022.
- The dataset shows the trajectory of poverty at different thresholds by sex including based on a high damage scenario which assumes higher inequality and slower economic recovery

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RESEARCH HIGHLIGHT | GENDER AND COVID-19

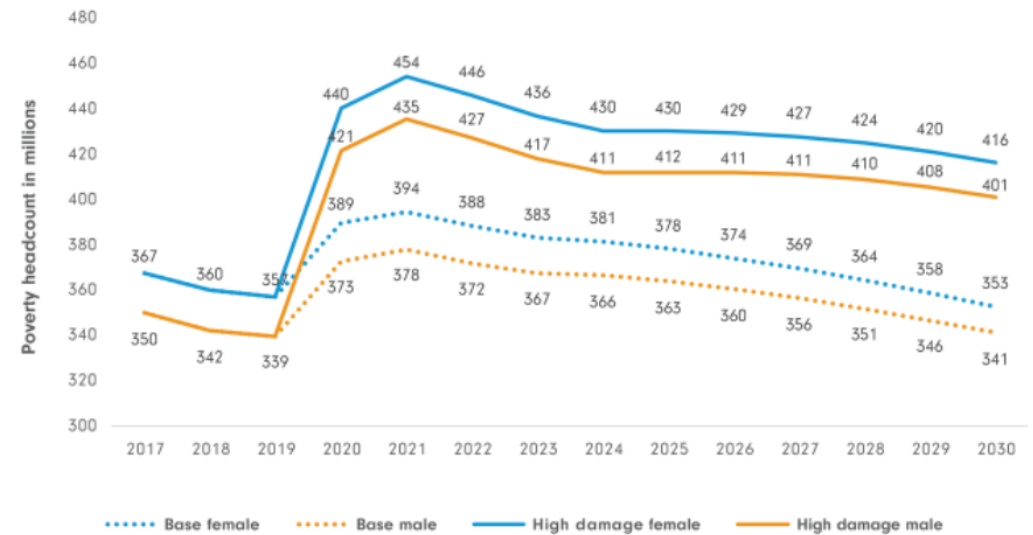
## Poverty deepens for women and girls, according to latest projections

01 Feb 2022



Two years on, the unpredictable course of this pandemic continues to upend prospects for growth and poverty reduction.

## Global extreme poverty headcounts, base and high-damage forecasts, by sex (2017-2030)



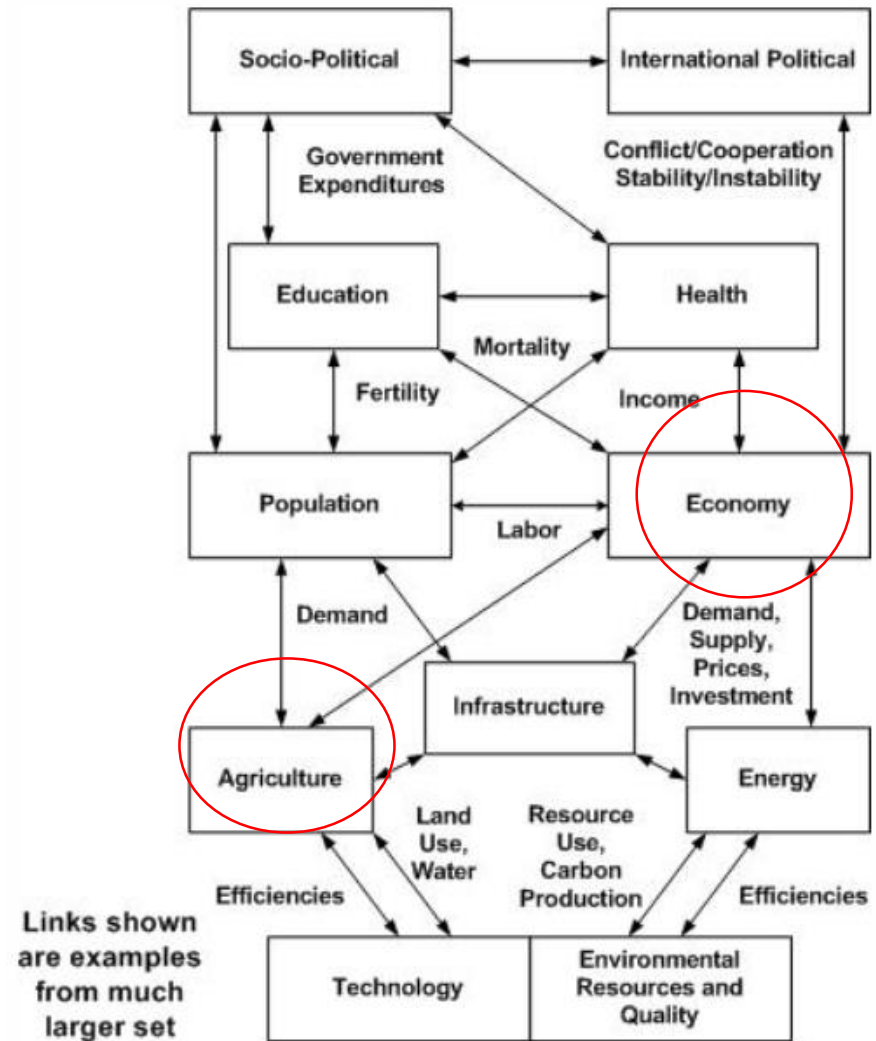
Source: UN Women, UNDP and Pardee Center for International Futures using the International Futures modeling platform.



A deep dive into the  
methodology

- The International Futures (IFs) model is a sophisticated and comprehensive forecasting modeling system that is used to forecast change and development in 186 countries worldwide.
- IFs includes more variables and connections from a wider range of key development systems than any other forecasting model available today (and it does so for 186 countries).
- The International Futures (IFs) tool, makes use of historical data (over 4,500 historical series), identifies and measures trends, and models dynamic relationships to forecast hundreds of variables at the global, regional and country level

# Introduction to the IFs model





# How is poverty by sex and age forecasted in the IFs?

- Drivers of **poverty** at the national level (*National income, distribution of the income, macroeconomic variables like growth and employment*)
- Drivers of **age-specific poverty** (*Household income, youth unemployment, education of the householder, wage differences from education and age*)
- Drivers of the **gender gap** in poverty (*female-to-male ratio of adult educational attainment, the wage ratio between women and men, the crude birth rate, and expenditures on social protection*).

- Once the model is initialized with the survey data, poverty headcounts are computed using the poverty rate and population of each group in the IFs demographic model
- Age-group specific poverty rates are first forecasted for a reference group (women and men of reproductive ages) and all other age groups are tied to this reference group
- Poverty head counts in each of the age groups are computed by multiplying age-group poverty rate with age-group population
- Age-group poverty counts are normalized with the national poverty headcount
- The age-group poverty rates are split into female and male poverty by computing a gender difference in poverty rates for each of the age-group. Following the logic like the one used for computing total age-group poverty, a reference age-group is identified first.
- Gender difference in poverty in all other age-groups are computed from the gender difference in the reference age-group. Among the eight age-groups, the third one which includes everyone from 25-year-olds to 34-year-olds, has the largest gap between female and male poverty and is thus chosen as the reference group for gender difference in poverty.
- Female and male poverty headcounts by age-group are computed from poverty rates and age-sex population. Female and male poverty headcounts and rates at the national level come from population weighted average of age-group poverty rates for each of the sexes.

# Process of building the forecasts

## Building an Age-Sex Poverty Profile

### Model Initialization

### Forecast Dynamics

#### 4.1 Poverty Rates by Age Groups

#### 4.2 Number of People in Poverty by Age-Group

#### 4.3 Reconciling Bottom-Up and Top-Down Poverty Computations

#### 4.4 Gender Difference in Poverty

#### 4.5 Poverty Headcounts by Sex

#### 4.6 National Poverty by Sex

#### 4.7 Poverty Shortfall

#### 4.8

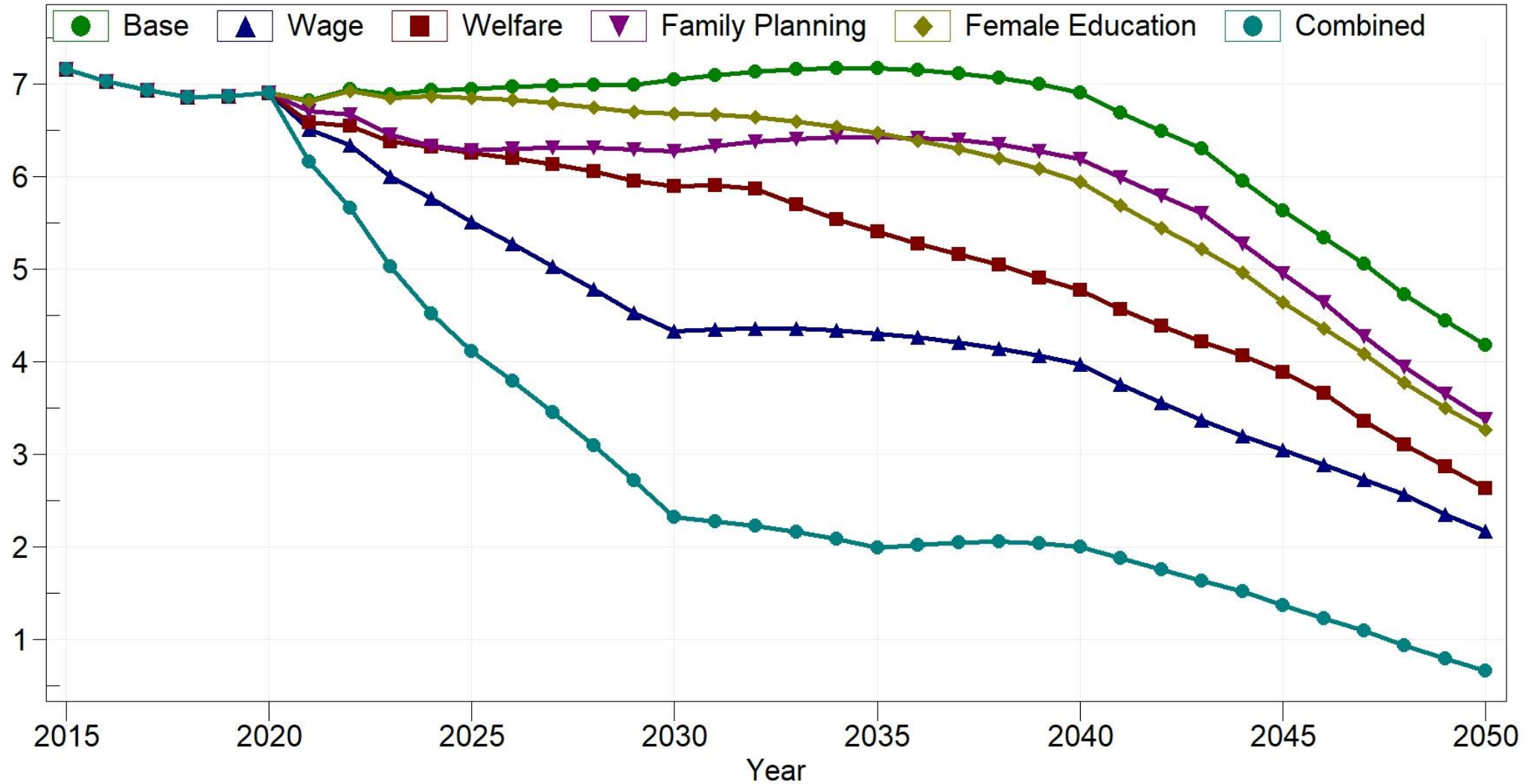
### Model Parameters

# Scenario Analysis

- Given the interconnected nature of the IFs model, its also possible to look at how the forecasts for poverty by sex and age can change if model assumptions change
- These new estimates and policy simulations allow for a more comprehensive assessment of the impact of COVID-19 and other crises on poverty and gender equality and the potential benefits of a comprehensive push policy scenario as compared to a counterfactual of business as usual.
- This scenario analysis exercise helps recognize that one-dimensional policy levers are inadequate and that it is indeed more comprehensive instead to look at addressing challenges that are intersecting and growing in frequency through a multi-layered approach focused on high-investment for a high-yield future.

| Scenario name    | Description  |
|------------------|--|
| Base Case        | Current path of development. Reference Case.   |
| Wage             | Converge female and male wages over a 10-year period. Countries where women earn more wages remain unchanged.  |
| Welfare          | Increase government welfare transfers to unskilled households (as a percent of GDP) to levels on average with high-income economies over a 10-year period. Countries already at that level remain unchanged. |
| Family Planning  | Reduce total fertility rates by 20 percent over a 10-year period to simulate greater access to family planning services.   |
| Female Education | Increases female student throughput across all levels by 20 percent (if possible) over a 10-year period for all countries.   |
| Combined         | Combines all for interventions described above.  |

# Global Poverty Sex Difference for Ages 25 to 34 (millions)



# COVID scenarios

## No COVID

- GDP growth rates follow IMF April 2019 projections
- All other results are estimated endogenously

## COVID Base

- Wage gap rises between women and men as a proxy for COVID's disproportionate impact on female employment, but return to pre-COVID levels by 2023 [1]
- Increase in births in 2020-2022 (following low health service disruption estimation) [2]

## High Damage

- Distribution of calories worsens over time
- Rather than stemming mostly from underutilized capital, the economic shock of COVID leaves a more lasting scar on economic productivity
- Inequality increases by 5 percent globally
- Countries take on greater debt
- Severe Acute Malnutrition is worse in 2020 and contributes to higher stunting levels
- High debt-risk countries see a 5 percent reduction in expenditures over the coming decade
- Education enrolment and quality drop in countries with significant closures
- Low- and lower-middle income countries experience a higher degree of child undernourishment
- Wage gap rises between women and men as a proxy for COVID's disproportionate impact on female employment [1]
- Increase in births in 2020-2022 (following high health service disruption estimation) [2]

[1] Estimated ratio of female to male employment rates in 2019, 2020, and 2021 (ILO 2021). Applied percent change between years to the labor wage sex ratio. Carried forward 2021 value to 2022 for both COVID Base and through horizon in the High Damage scenario.

[2] Increased TFR so that additional births (relative to No COVID) matched estimates from UNFPA 2020.

# SDG Push scenario

## Social Protection

- Shift towards a more crop-based diet
- Modernization of cookstoves
- Increased public health spending
- Greater welfare transfers in low-income economies
- Increased access to piped water and improved sanitation
- Equal pay for women

## Digital Disruption and Innovation

- *Higher secondary education graduation rates*
- Increased focus on science and engineering graduates
- Greater education budget allocation
- Higher research & development spending
- Higher infrastructure spending
- Increased access to fixed and mobile broadband

## Governance

- Improved government effectiveness
- Strengthened democratic institutions
- Increased government transparency

## Green Economy

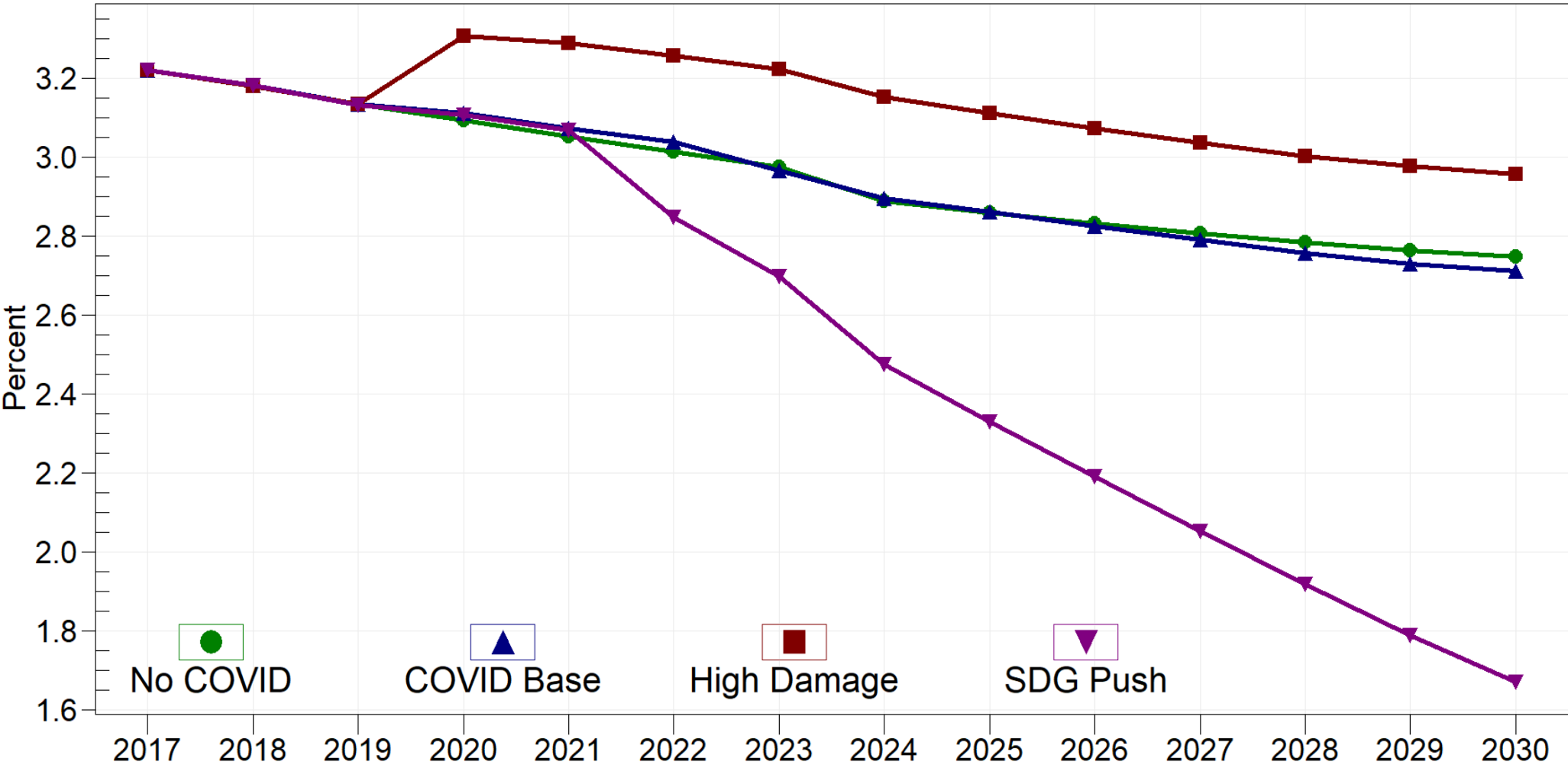
- Lower water demand
- Reduced electricity transmission loss
- Improved urban air quality
- Reforestation
- Stronger carbon tax regime
- Reduced energy intensity in the economy
- Greater investment in renewable resources
- Reduced energy demand
- Increased electricity access
- Reduced agricultural losses
- Improved crop yields
- Reduced fish catches for largest producers

## Additional Phase 1 Interventions

- *Reduction in total fertility rates*
- *Increase in wages and welfare transfers (beyond related SDG Push interventions)*

# Global sex difference in \$5.50 poverty rates

*For ages 25 to 34, by scenario*





UN Women Resources

[The Gender Snapshot 2021](#)

[SDG Spotlight Series](#)

[COVID-19 and the Gender Monitor](#) (database)

[From Insights to Action: Gender Equality in the Wake of COVID-19](#)

[COVID-19 and Gender Policy Tracker](#)

[RGAs on Socio-economic impacts of COVID-19](#)

[RGAs on the impacts of COVID-19 on VAW](#)

**THANK YOU**