The demographic opportunity for social and economic change in Mozambique

Zooming on methodological issues in investigating the dividend potential

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Outline

- The need for urgent policy action to reap the DD in Mozambique

- Methodological approach and issues encountered

Demographic analysis

1. **Demographic trends**: issues in measuring fertility
2. **Demographic projections**: reconciling different projection sets
3. **Determinant of fertility:** adjusting models to country's specificities
4. **Family policies:** how to carry out a policy mapping

Economic analysis

5. **Estimating the demographic dividend :** the NTA approach
6. **Projecting the labor force:** changes in population, education, gender policy, migration

Policy discussion

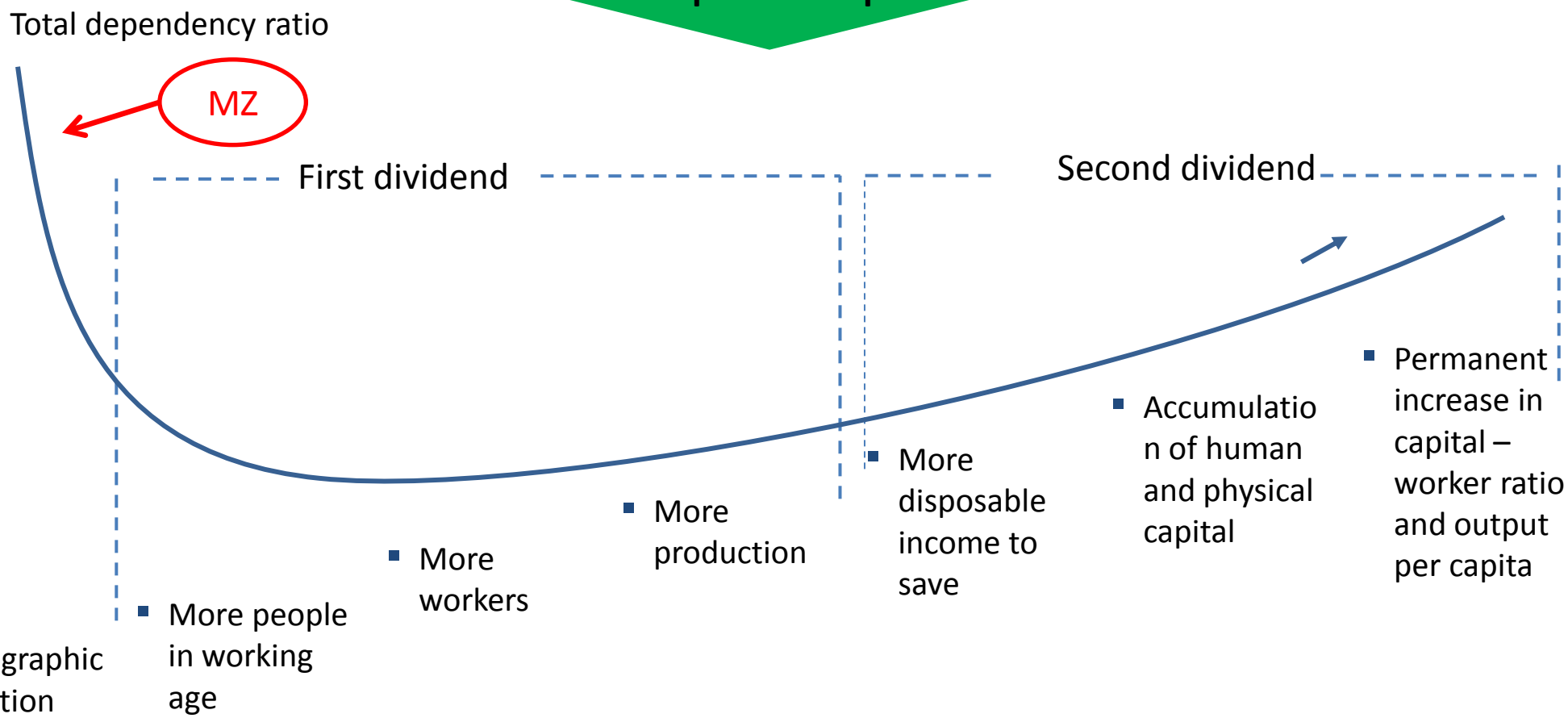
7. **Effects on growth, poverty and inequality:** a CGE approach
8. A framework to guide **policy advice**

1. The need for urgent policy action to reap the DD in Mozambique

A potential for a demographic dividend in Mozambique

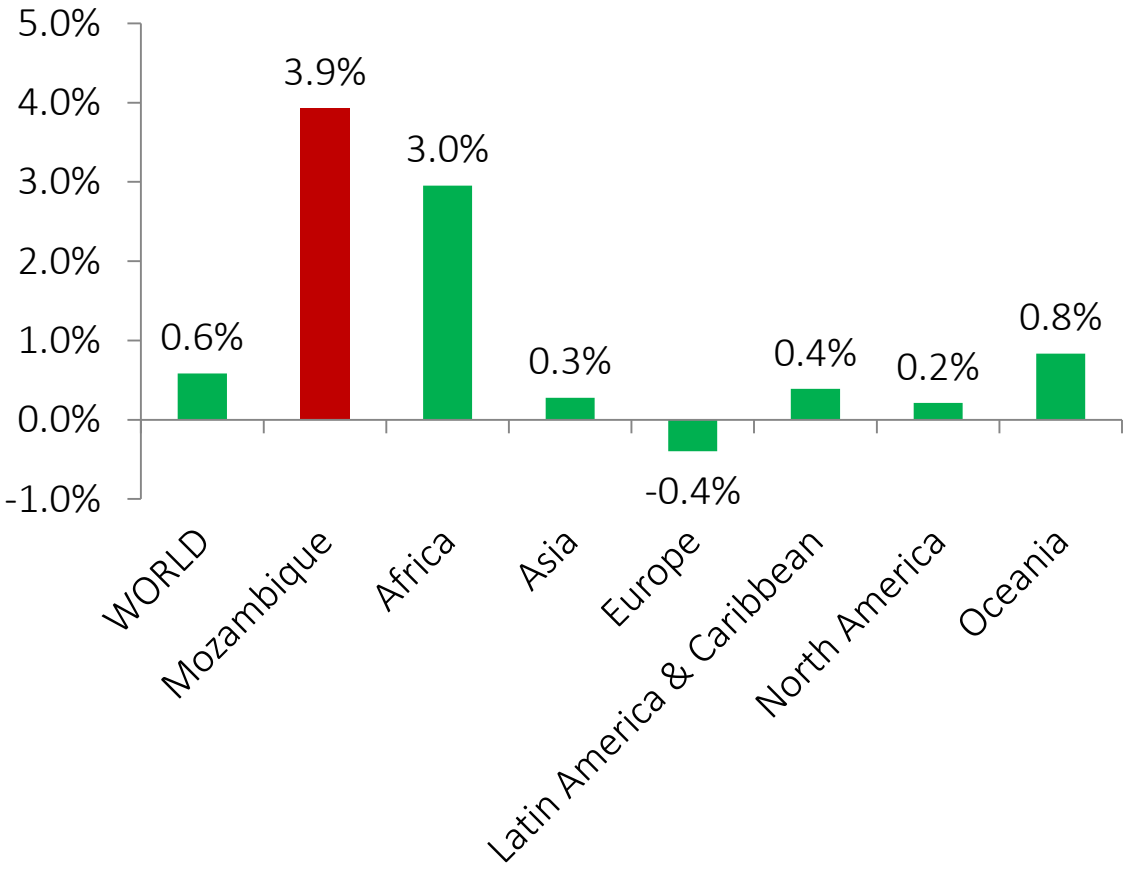
An accelerated decline of fertility is necessary to seize the demographic dividend

If the focus shifts from population numbers to population structure , the prospects for Mozambique can be positive



Favorable demographic change lie ahead ….. but policy is needed today to accelerate economic growth in Mozambique

Average annual growth rates of working age populations by region, 2015-2050



Mozambique could benefit, provided appropriate policies are urgently put in place

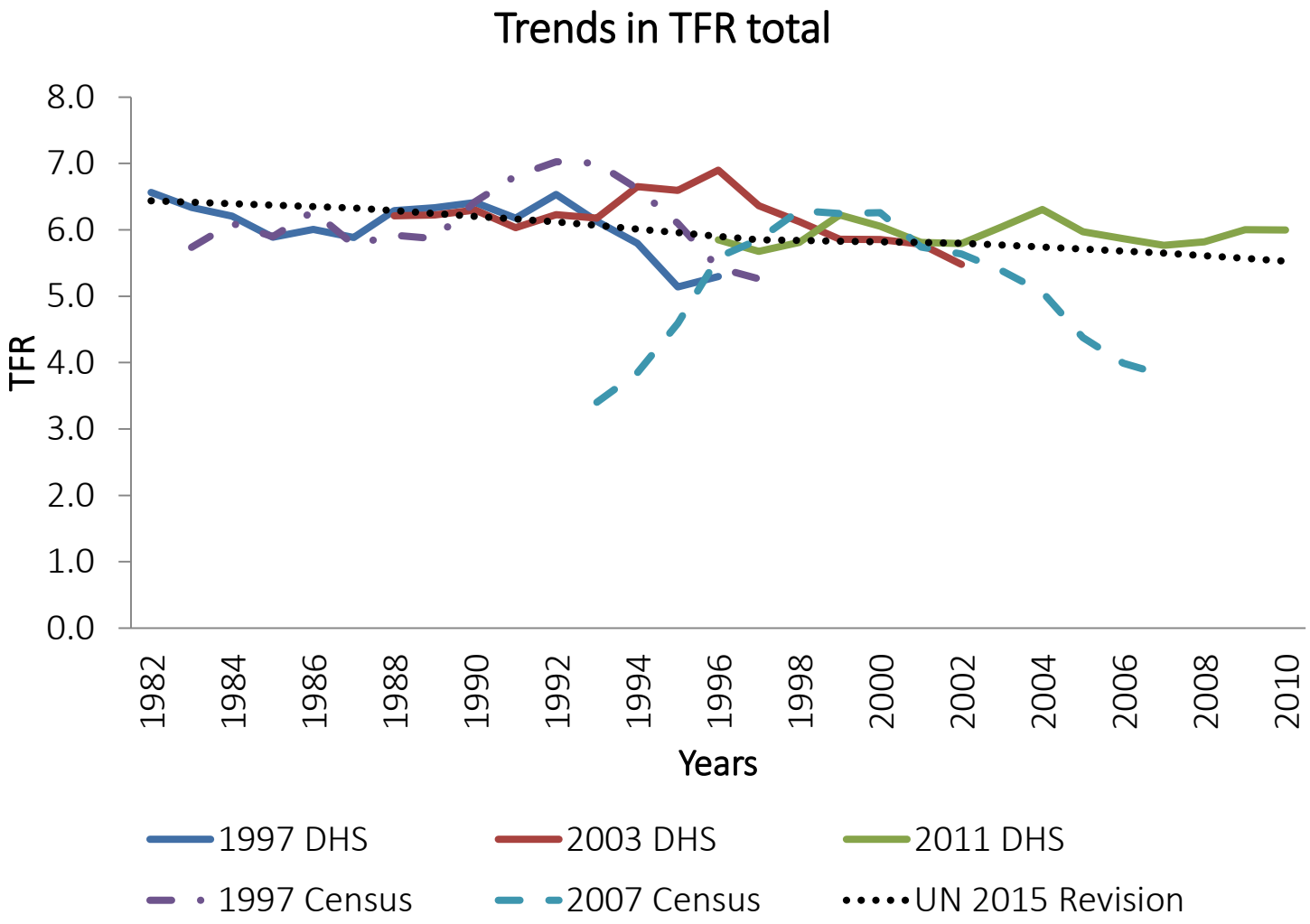
- Demographic dividend or a demographic disaster? The answer is up to Mozambique's policy makers—today.
  - → With the right policies, MZ's transition to smaller families and a more favorable population age structure can be accelerated
  - → With right policies, MZ can build human capital and skills for its future cohorts of workers
  - → With the right policies, MZ's labor markets can provide productive work for the rapidly growing workforce.
  - → With the right policies, MZ can reap a tremendous demographic dividend to propel its economic takeoff.

2. Methodological approach and issues encountered

Demographic trends: issues in measuring fertility

- Different options to be used as data source
  - UN Pop data. Pros: international comparability. Cons: assumptions do not always take into account country-specific context
  - Censuses. Pros: universal sampling. Cons: few editions (last one in 2007)
  - DHS. Pros: level of disaggregetation. Cons: sampling representativeness

- Preliminary general conclusions:
  - Fertility is yet to experience a sustained decline in Mozambique
  - However, it is declining in urban areas and among educated and rich women



Demographic projections: reconciling different projections

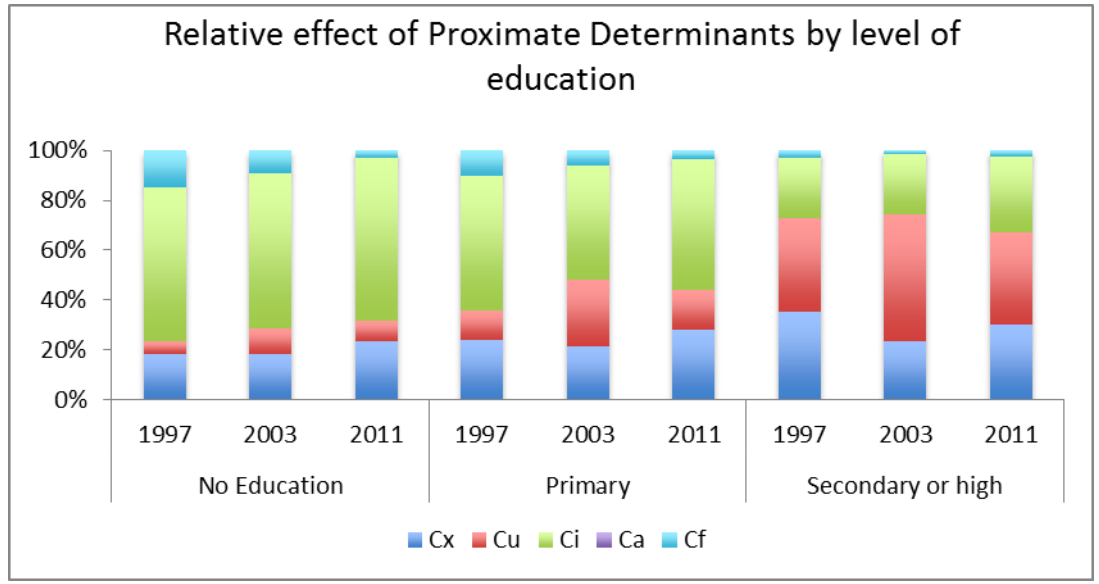
- Discrepancies in sources are likely to be magnified when projecting demographic indicators into the future into the future
- Specific datasets depending on the question of interest
  - UN Projection: low-fertility, medium-fertility, high-fertility variants
  - IIASA projections (education)
  - Domestic projections
- Sensitivity analysis to assess robustness of results to choice of dataset

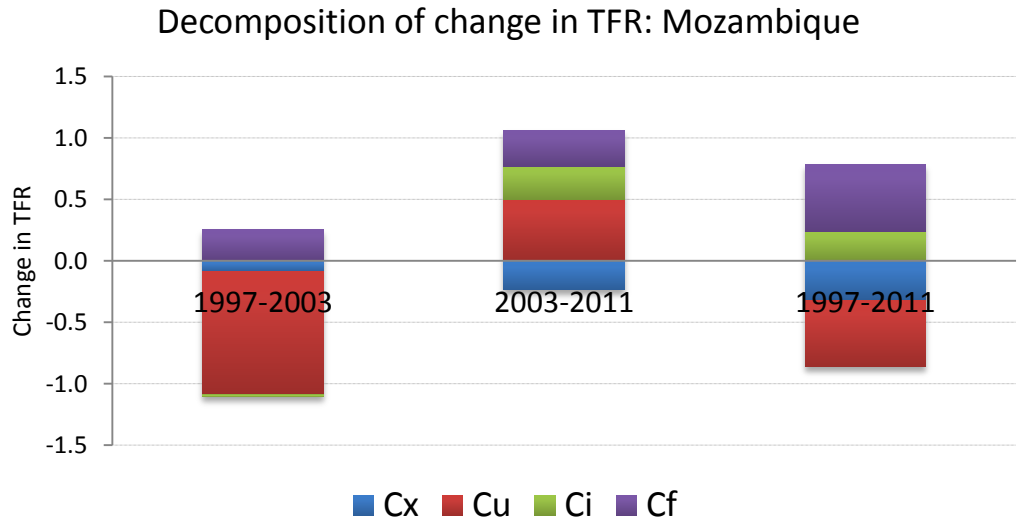
- Preliminary results: if fertility in Mozambique will have to follow the medium/high trends, the country will still suffer from very high dependency ratios as of 2050

Dependency ratios	2050		
	High	Medium	Low
Total	76.9	69.3	61.6
Child	67.3	58.9	50.4
Elderly	9.6	10.4	11.2

Determinant of fertility: adjusting to country's specificities

- Analysis of socio-economic differences are key to explain fertility transition in Mozambique
  - Analysis of fertility trends and its proximate determinants (PDs) using DHS (1997-2011) showed large variations in TFR according to place of residence, region, education and wealth index in Mozambique.
- Used Stover's (1998) modified version of the PDs Bongaarts' framework PDs analysis to adjust to Mozambique characteristics
  - Considerable out-of-wedlock sexual activity (and consequent childbearing)
  - High prevalence of sexually transmitted diseases (and consequent infertility);
- The contribution of each of the principal PDs was estimated using a five-factor decomposition method (Das Gupta, 1978, 1993)
  - Including the 4 indices (sexual activity (Cx) contraception (Cu), postpartum infecundability (Ci) and sterility) and a time invariant potential fertility of 21



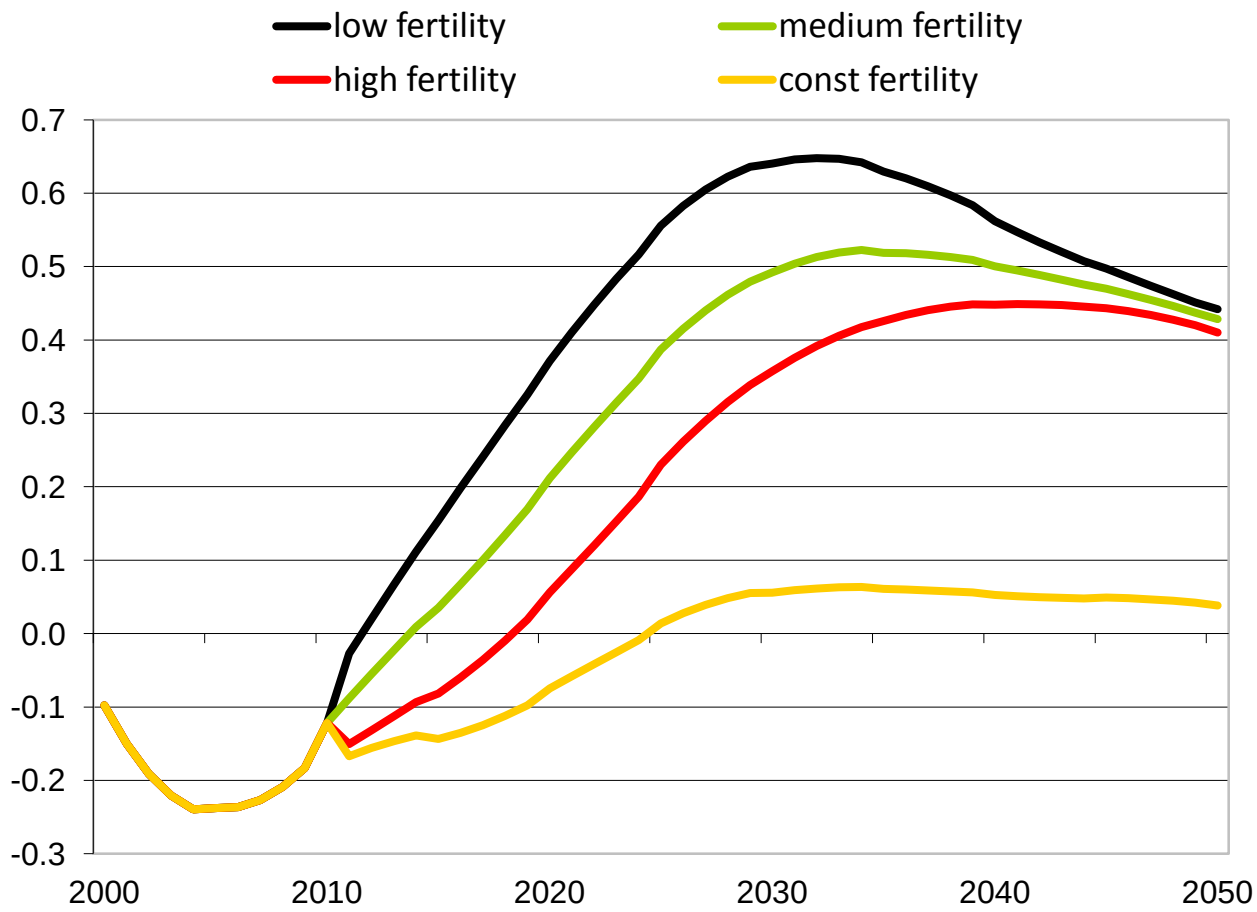


Family policies mapping

- Population related policies, programs and strategies are mapped and reviewed
  - There were no explicit policies to influence changes in the demographic dynamic until 1999, when the first and only national population policy was approved
  - In 1978, the family planning program was officially adopted, but it only became a national programme in 1980, when family planning services began to be made available free of charge through the national health system
- Mozambique has adopted multi-sectoral policies and programs to address population issues, specifically, mother and child health programs, female education and gender equity, early marriage and childbearing and family planning

Estimating the DD: the NTA approach

- NTA approach: measures the DD taking into account the age profile of income and consumption (Life-Cycle Deficit - LCD)
  - Combines estimated LCD with population projections to describe the evolution of the Support Ratio
  - How many total labor income producers, and consumers, are there in population in a given year
- If the real number of labor income workers increases more than that of consumers > Support Ratio increases > expected increase in economic growth rate
- Could lead to slightly different identification of opportunity and magnitude of the DD with respect to a purely demographic definition



Projecting the labor force: changes in population, education, gender policy, migration

- Increases in labor force supply may result from:
  - larger shares of adult population,
  - improved educational profile,
  - higher women's participation and
  - urbanization
- We would need time-series data to capture age-period-cohort trends for LFPRs according to all these dimensions and project future labor force
  - Unfortunately in MZ only two demographic censuses (1997 and 2007)
- We decompose LFPRs in the 10-year period to understand the determinants of labor supply in MZ by age structure, rural-urban condition, occupation, education, and gender
- We also apply an econometric model to census data to estimate the educational attainment distribution resulting from smaller family sizes
- We simulate future labor force from the projections of the population by age, sex and urban-rural situation, and the scenarios of education distribution

Effects on growth, poverty and inequality: a CGE approach

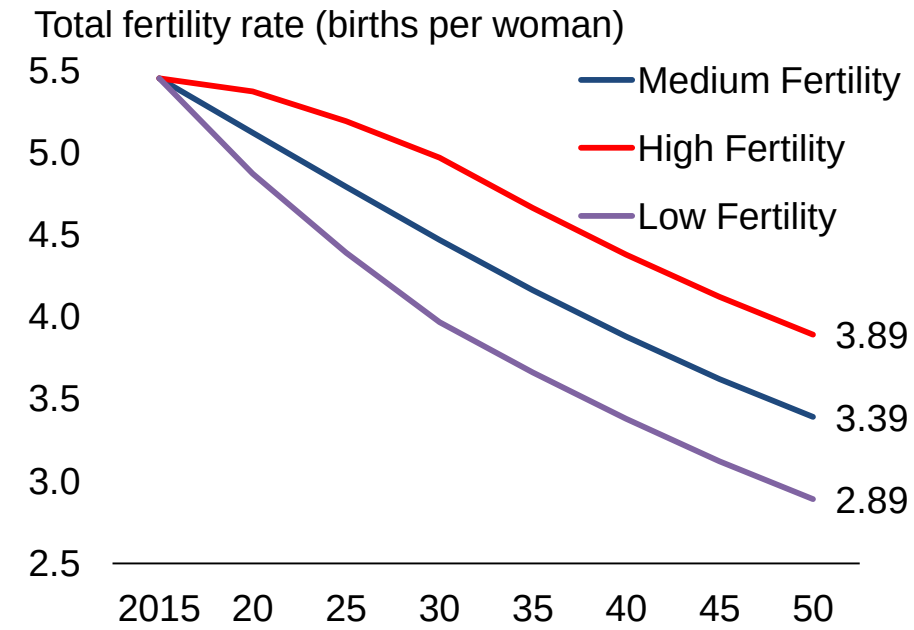
- Simulate alternative scenarios of economic growth, 2015-50
  - Age-structure and population projections from different WPP 2015 fertility scenarios
  - Impact of demographics through labor supply, savings, and investment

- Simulate alternative scenarios of poverty and inequality, 2015-50
  - Take into account distributional effects
  - Isolate the direct impact of changes in the age structure from indirect, potential impacts
  - Simulate how different policy interventions could change expected levels of poverty and inequality

- Macro-micro simulation approach used in several recent Bank reports for analysis of growth, poverty, and inequality
  - Ahmed et al. (2014); Go et al. (2015); GMR 2015/16; South Africa Economic Update Aug. 2015
  - LINKAGE - neoclassical global dynamic recursive CGE model
  - GIDD - microsimulation model based on household survey data

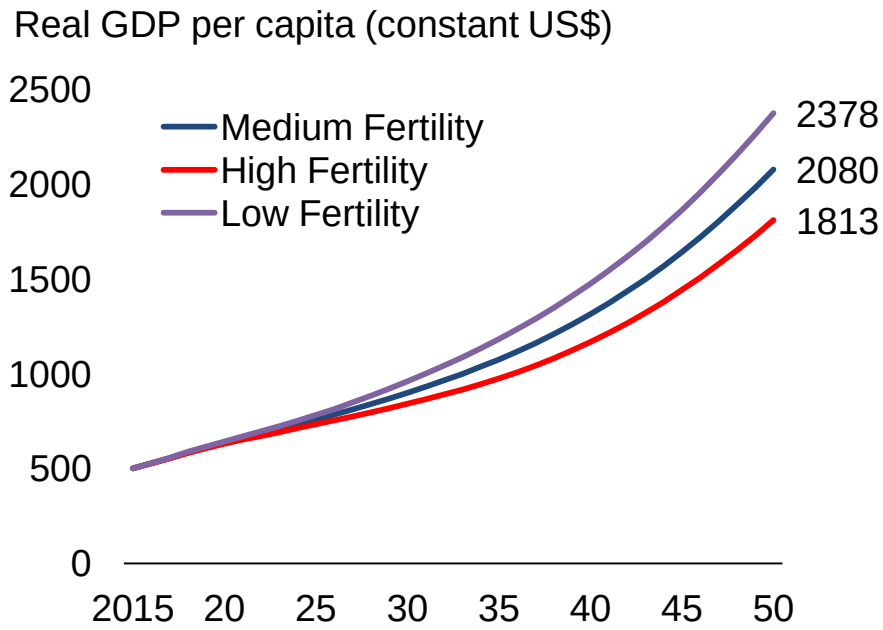
Real GDP per capita under different fertility scenarios

Fertility is expected to remain above replacement rates even under a low fertility scenario



Source: UN WPP 2015

Income per capita in 2050 can be 35 percent higher under low fertility than under persistently high fertility

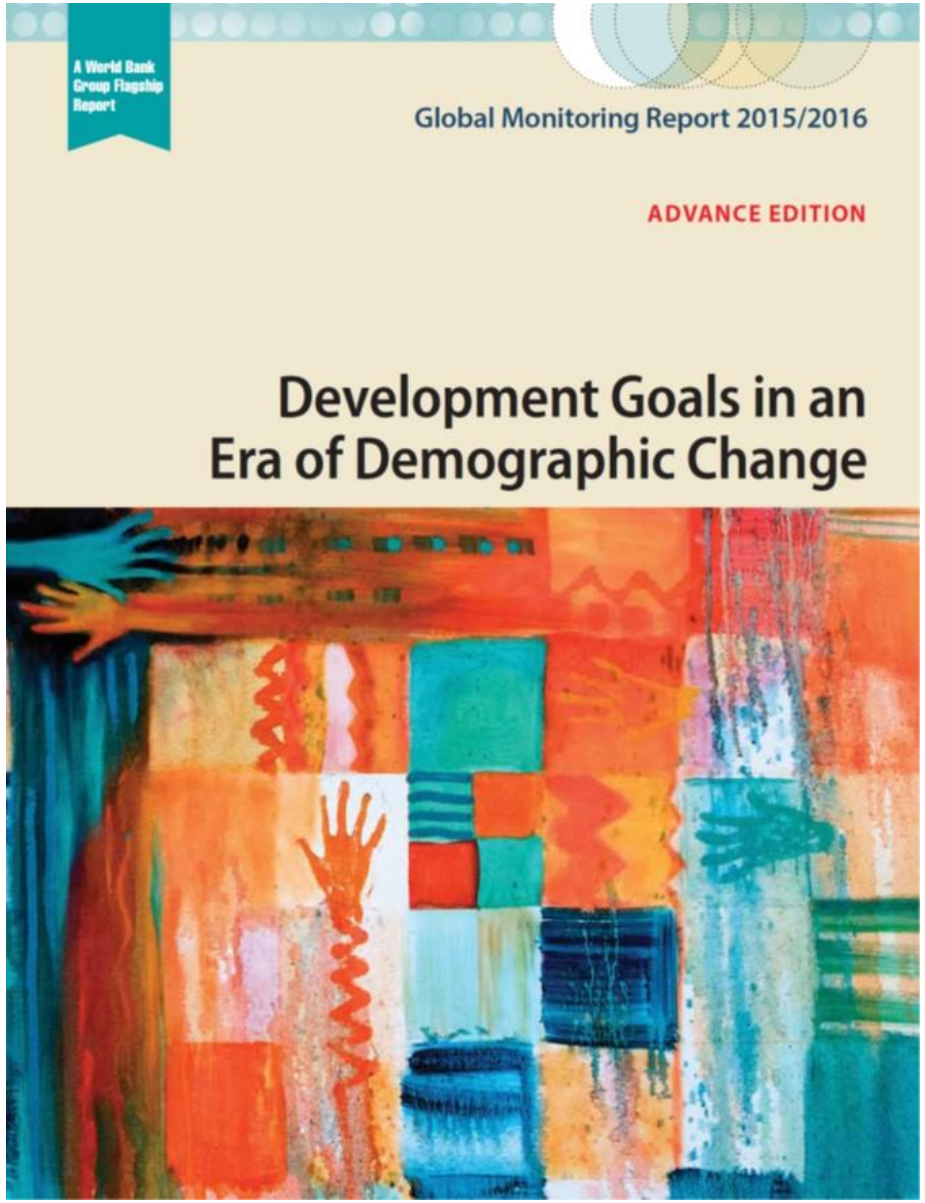


Source: LINKAGE simulation results.

What type of effects?

- Direct effect – through changes in the age distribution
- Indirect effect – through increased spending per child, human development outcomes and better productivity and income across the life cycle
- Additional policy effects – through increased labor force participation, especially among women

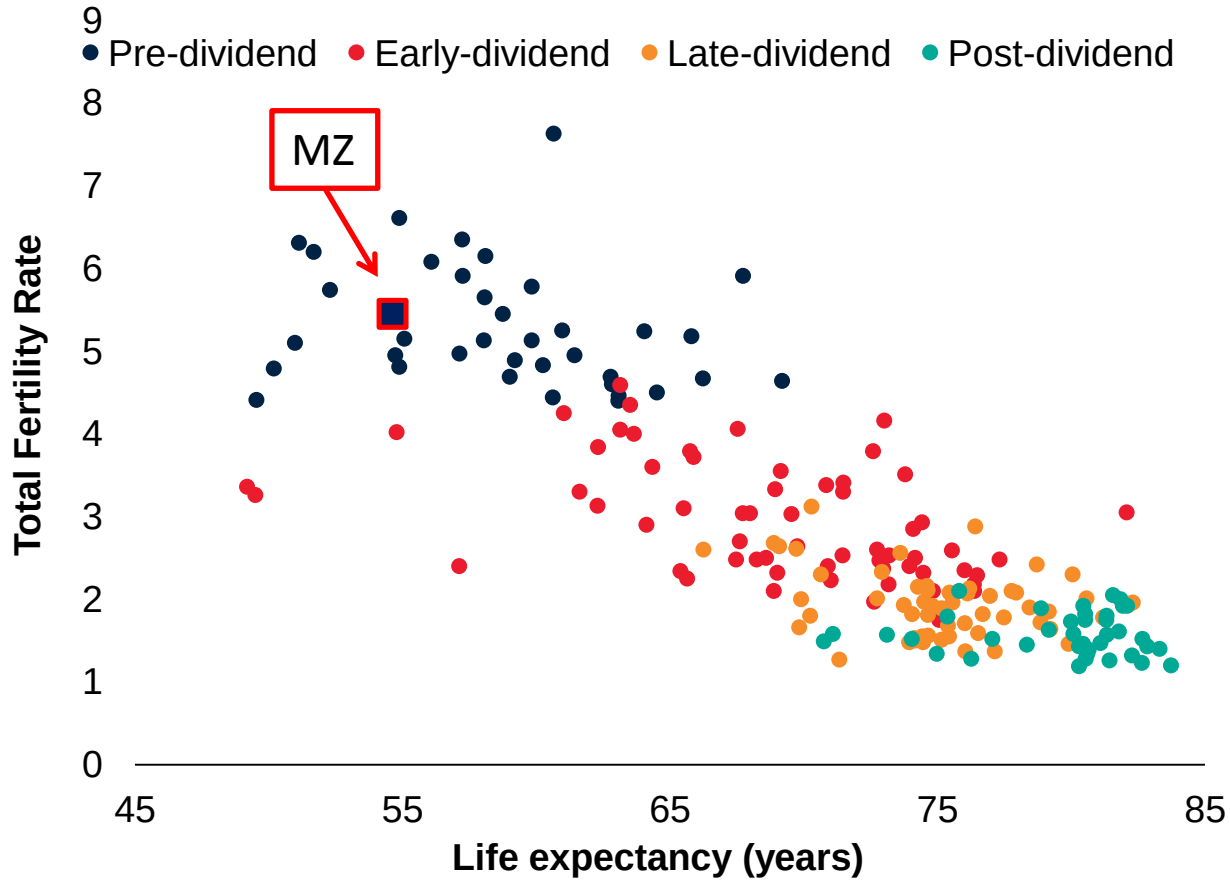
A new typology recently introduced by the World Bank



Using demography to identify economic and development potential

Growth WAP Share, 2015-2030	TFR 2015		TFR 1985	
	>=4	<4	>=2.1	<2.1
>0	Pre-dividend	Early Dividend		
<=0			Late-dividend	Post-dividend

Note: WAP = Working Age Population.The working-age population is defined as the share of the population aged between 15 and 64 years. Total fertility rate is the average number of births per woman in her lifetime.



Can the GMR framework help crystalize policy priorities?

Phase	Objective	Policies
Pre-Demographic Dividend Countries	Accelerate the fertility decline	• Reduce child mortality, morbidity, malnutrition • Increase female education and gender equity • Address social norms on fertility • Reduce child marriage • Expand comprehensive family planning programs
Early Demographic Dividend Countries	Reap the first economic dividend	• Improve education and human capital • Attract foreign direct investments • Improve business environment to build demand for labor • Reduce trade barriers
	Create conditions for the second economic dividend	• Encourage female employment outside the home • Improve policies and institutions for domestic savings and investment

Thank you!