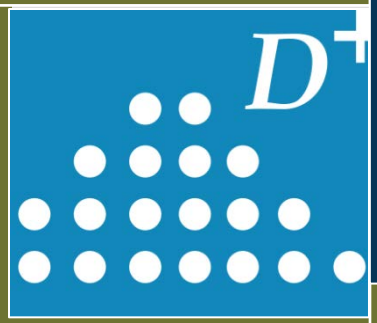
policy



Demographic dividend opportunities for Kenya:

DemDiv model pilot

NCPD and HPP validation and training

March 24, 2014

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DemDiv model structure and functions

Purpose of DemDiv

- Build support for FP/RH and multisectoral investments across the development spectrum
- Provide evidence to meet growing interest in potential of the demographic dividend
- Quantify specific policies that may help Kenya achieve its dividend
- Target audience: GOK policymakers outside the health sector

  - NCPD and Technical Working Group to identify specific target audience for this application

DemDiv basics

- Target audience: GOK policymakers outside the health sector

  - NCPD and Technical Working Group to identify specific target audience for this application

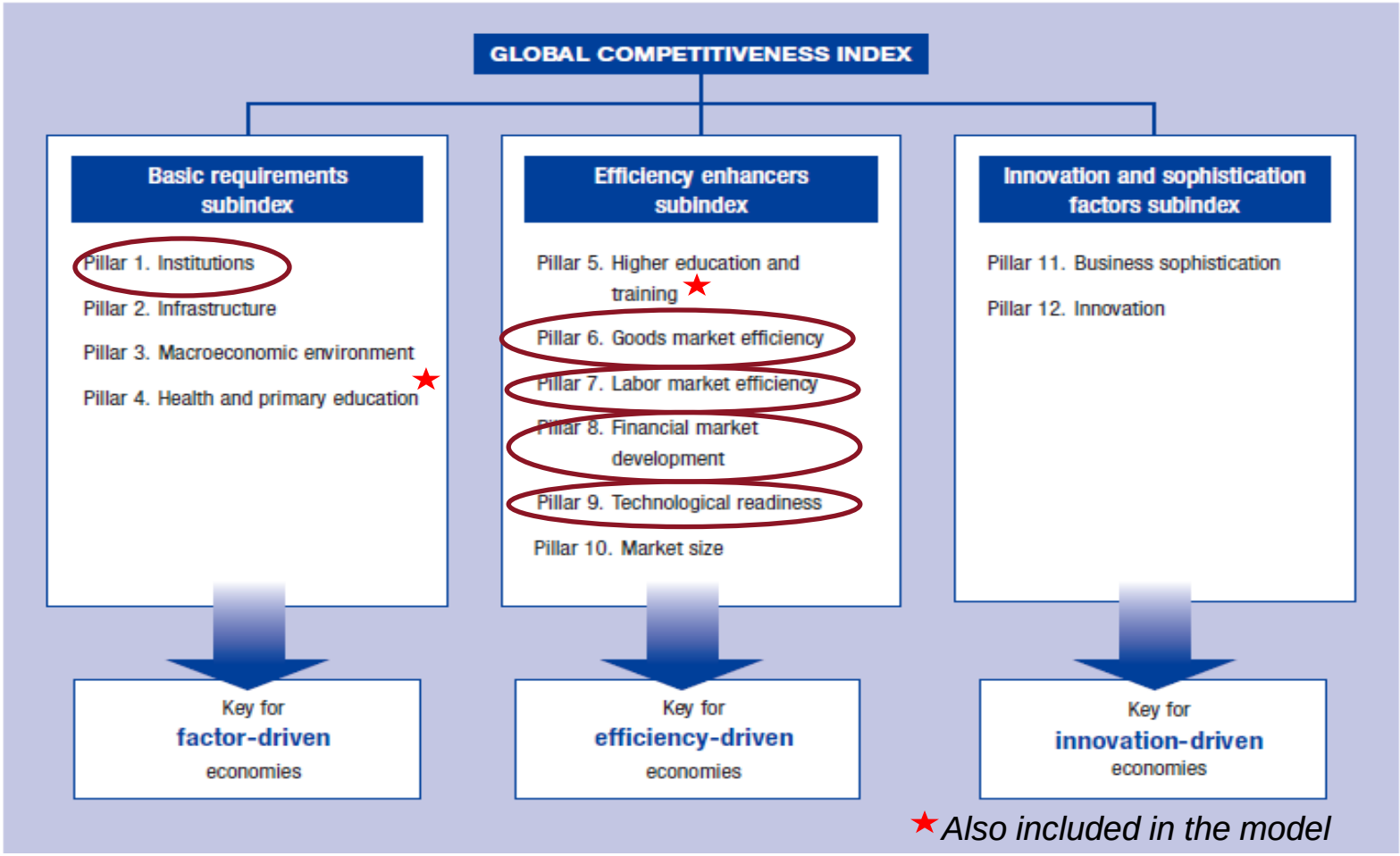
- Statistically rigorous and evidence-based
- Makes projections for multiple scenarios
- Adaptable to each country's context
- Accessible to diverse audiences
- No special or proprietary software
- Data available from public sources

Data sources

- Kenya DHS 2008-09 (family planning, fertility, marriage, mortality, births at risk)
- World Bank, World Development Indicators (GDP per capita, capital formation, primary education costs)
- International Labour Organization (employment)
- UN Population Division (life expectancy)
- Barro & Lee, UN Statistics Division (education policy variables)
- World Economic Forum, Global Competitiveness Index (economic policy variables)
- Berlemann & Wesselhoft (capital stock)
- ***Complete list of data sources is attached***

The Global Competitiveness Index

Figure 1: The Global Competitiveness Index framework



Schwab, K. 2013. *The Global Competitiveness Report 2013-2014: Full Data Edition.* Geneva: World Economic Forum.

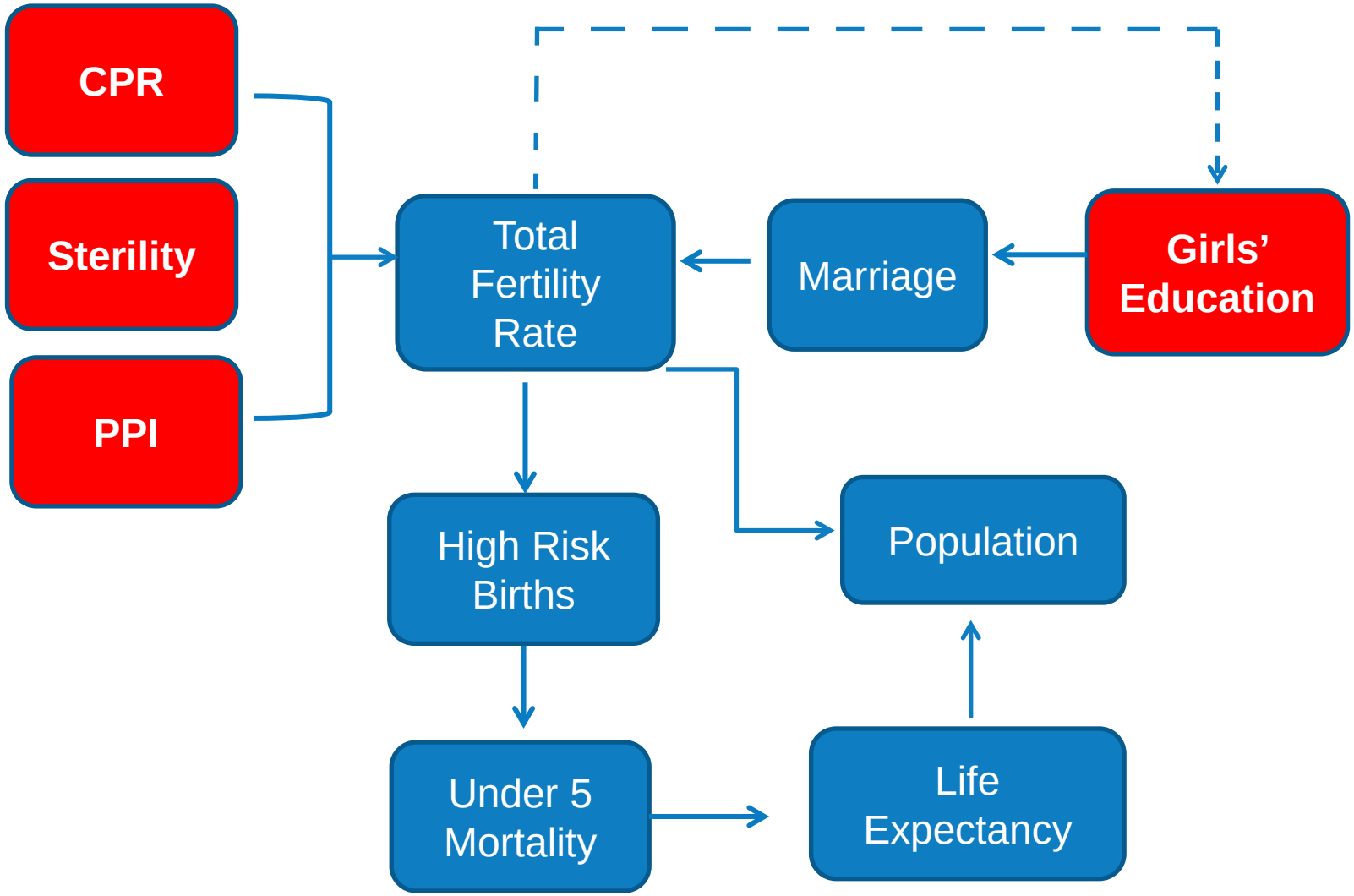
GCI policy variables

- Financial market efficiency—affects investment
- Labor market flexibility—affects employment
- Public institutions—affects productivity
- Imports as % of GDP—affects productivity
- Information and communications technologies—affects productivity

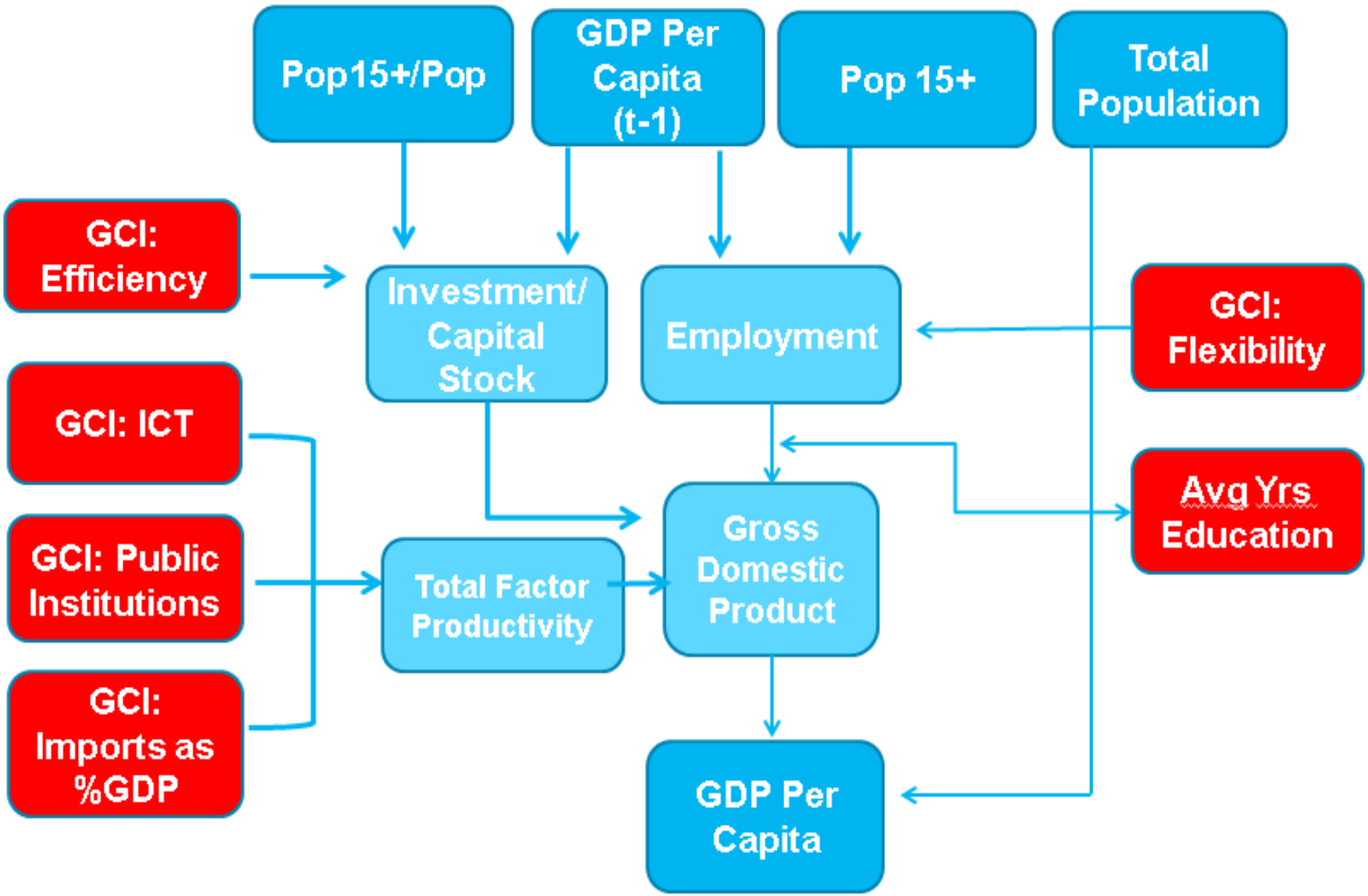
Model structure

- Two linked sub-models: demographic and economic
- User designs up to three policy scenarios for the future, plus a base scenario
- Standard projection period 2010 to 2050—can be adjusted
- Uses Microsoft Excel, automatically linked to DemProj model in SPECTRUM
- GDP = capital + employment + productivity

Demographic sub-model



Economic sub-model



DemDiv policy inputs

Economic	**Demographic**
Financial market efficiency	Family planning
Labor market flexibility	Girls' education
Public institutions	
Imports as % of GDP	
Info & comms technology use	
Male and female education	

DemDiv model outputs

Economic	**Demographic**
Labor force by age and sex	Population by age and sex
Employment	Dependency ratio
Investment/new capital formation	Infant, child and maternal mortality
GDP and GDP per capita	Fertility rate
GDP growth rate	Life expectancy

DemDiv preliminary results for Kenya

“A globally competitive and prosperous nation with a high quality of life.”

Kenya Vision 2030

Four scenarios

- **Base scenario**

  No change in any variable between 2010-2050

- **Policy scenario 1: Economic**

  Improvements in labor market flexibility, information and communication technology, financial market efficiency, public institutions, and imports

- **Policy scenario 2: Family Planning + Education**

  Improvements in contraceptive use and education

- **Policy scenario 3: Combined**

  Combined improvements in all economic, family planning and education variables

Scenario data and projections: Family planning and education

KENYA		Education				Family Planning		
Scenario Name	Value in:	Expected Years Female	Mean Years Female	Mean Years Male	Mean Years Both	CPR	PPI	Sterility
	2010	11	5.44	7.10	6.27	45.5	10.3	0
Base Case	2050	11	5.44	7.10	6.27	45.5	10.3	0
Econ only	2050	11	5.44	7.10	6.27	45.5	10.3	0
FP+Ed only	2050	16	10	10.5	10.25	70.0	10.3	0
Econ+Ed+FP	2050	16	10	10.5	10.25	70.0	10.3	0

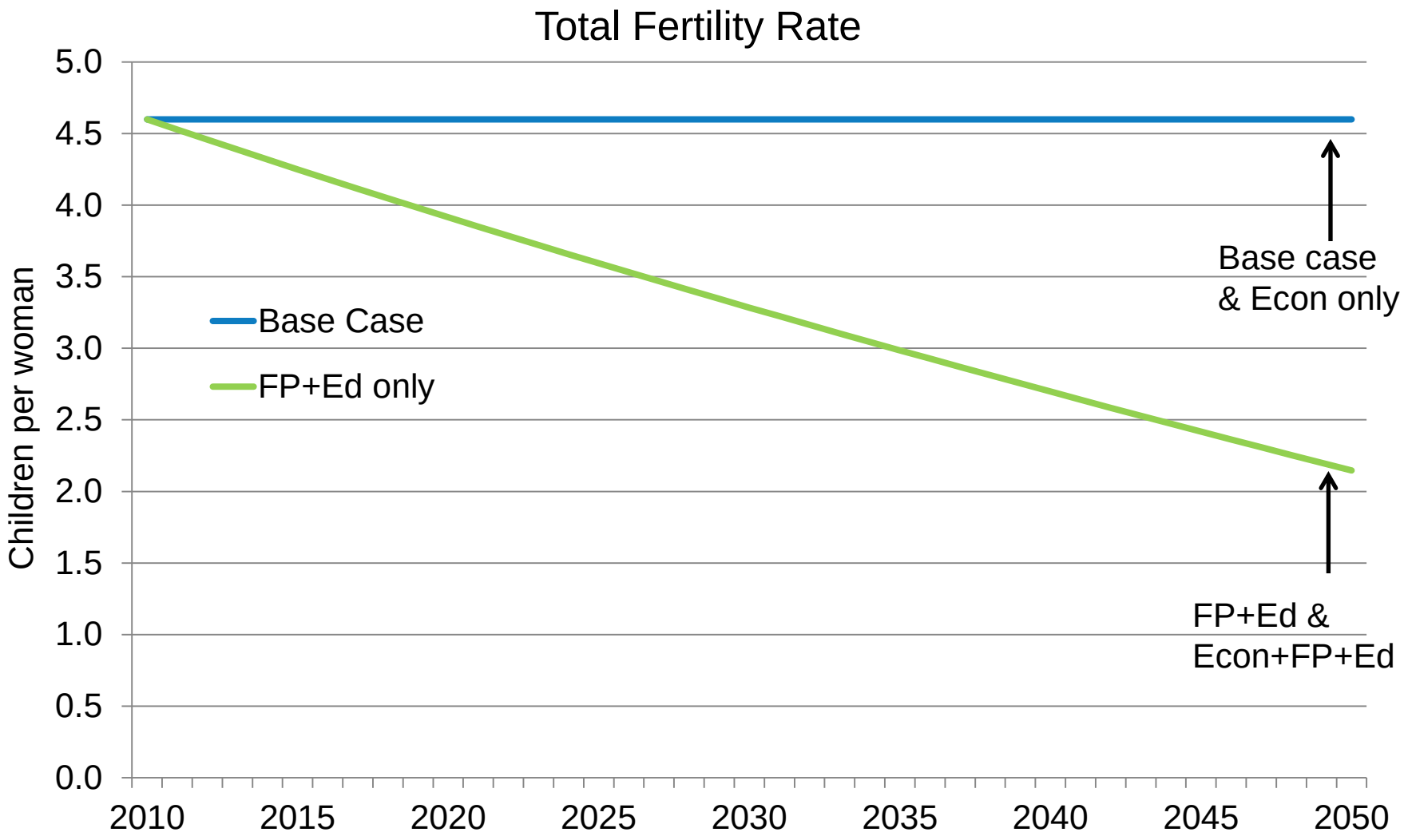
Policy assumptions for 2050 to be refined

Scenario data and projections: Economic policy variables

KENYA		Economic				
Scenario Name	Value in:	*GCI 7A: Labor Market Flexibility*	*GCI 9B: ICT Use*	*GCI 8A: Financial Market Efficiency*	*GCI 1A: Public Institutions*	*GCI 6.14 Imports %GDP*
	2010	4.79	1.66	3.87	3.27	42.62
Base Case	2050	4.79	1.66	3.87	3.27	42.62
Econ only	2050	4.89	5.00	4.90	4.71	21.31
FP+Ed only	2050	4.79	1.66	3.87	3.27	42.62
Econ+Ed+FP	2050	4.89	5.00	4.90	4.71	21.31

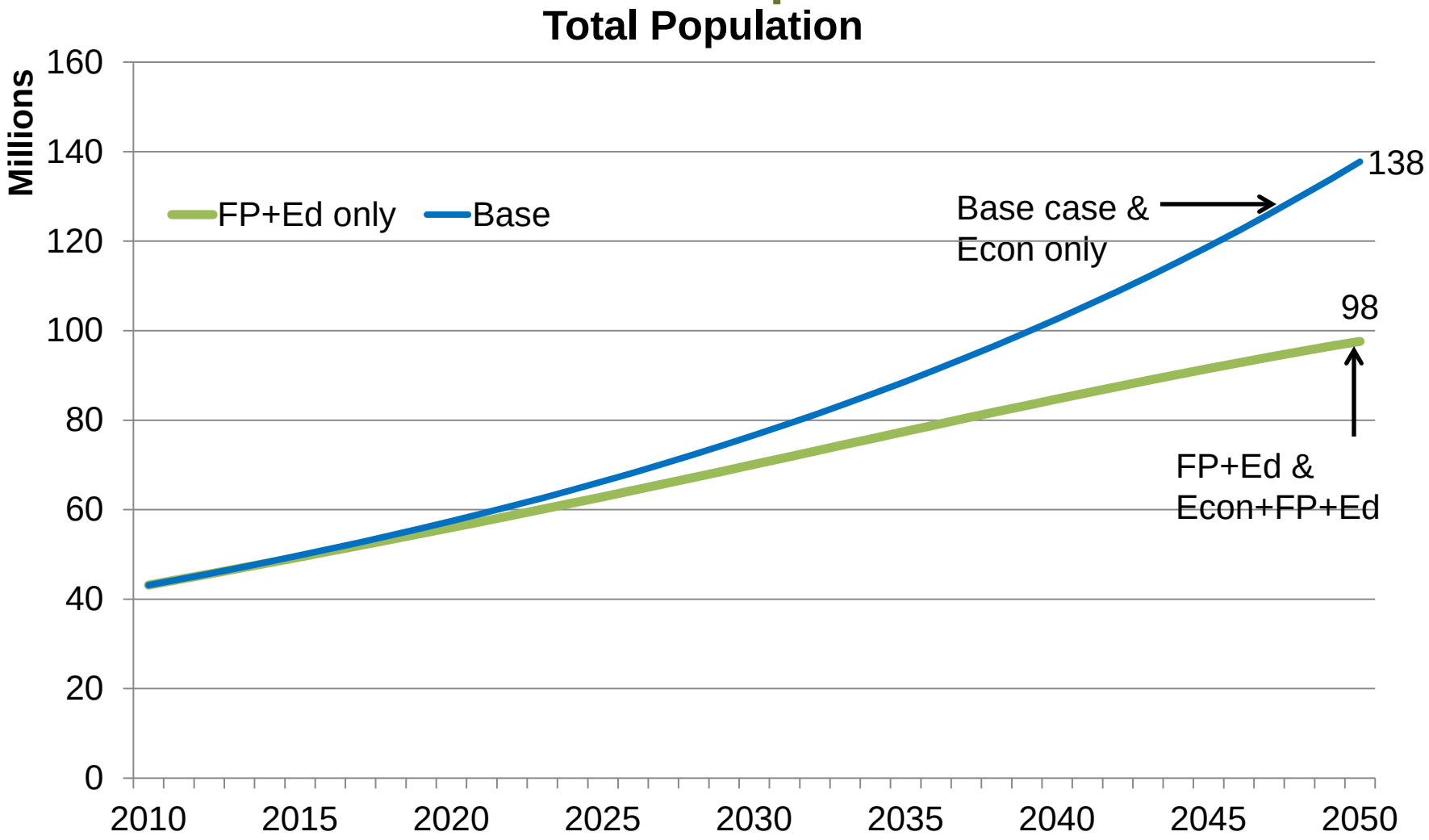
Policy assumptions for 2050 to be refined

Results: Fertility



Family planning and implementing education policies lower TFR to around two children per woman.

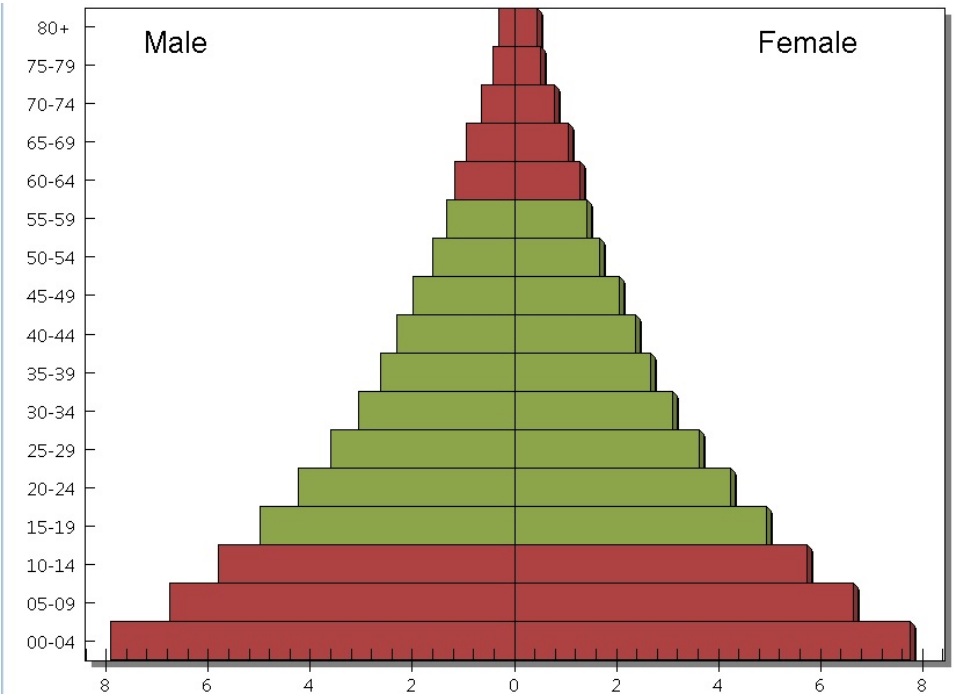
Results: Population



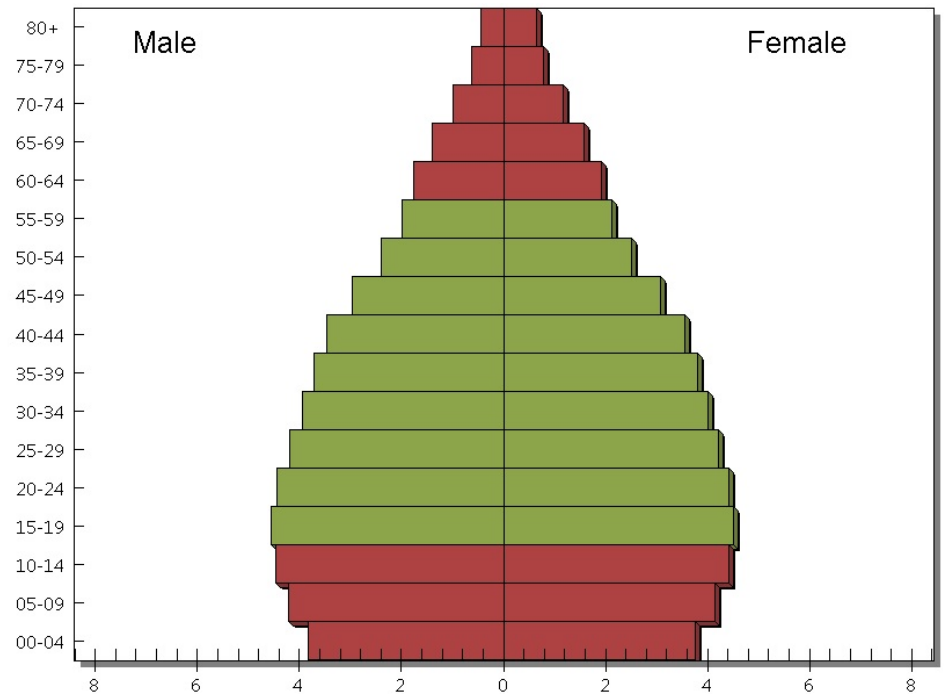
The lower fertility rate in the family planning and the combined scenarios results in a smaller total population.

Results: Age structure

2050 base scenario



2050 FP+Ed scenario

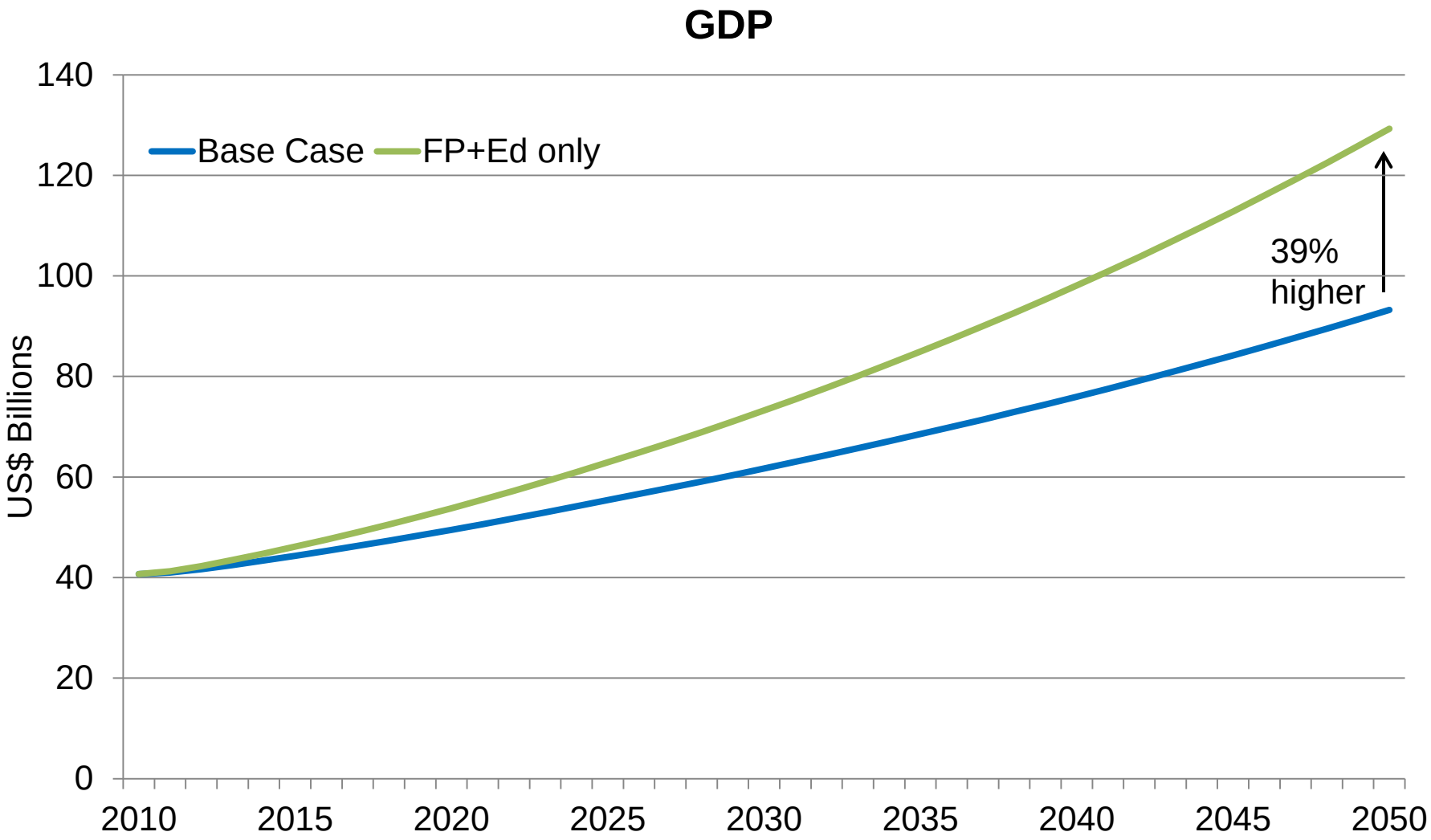


percent of total population

With constant TFR, Kenya's age structure remains very young and dominated by dependents.

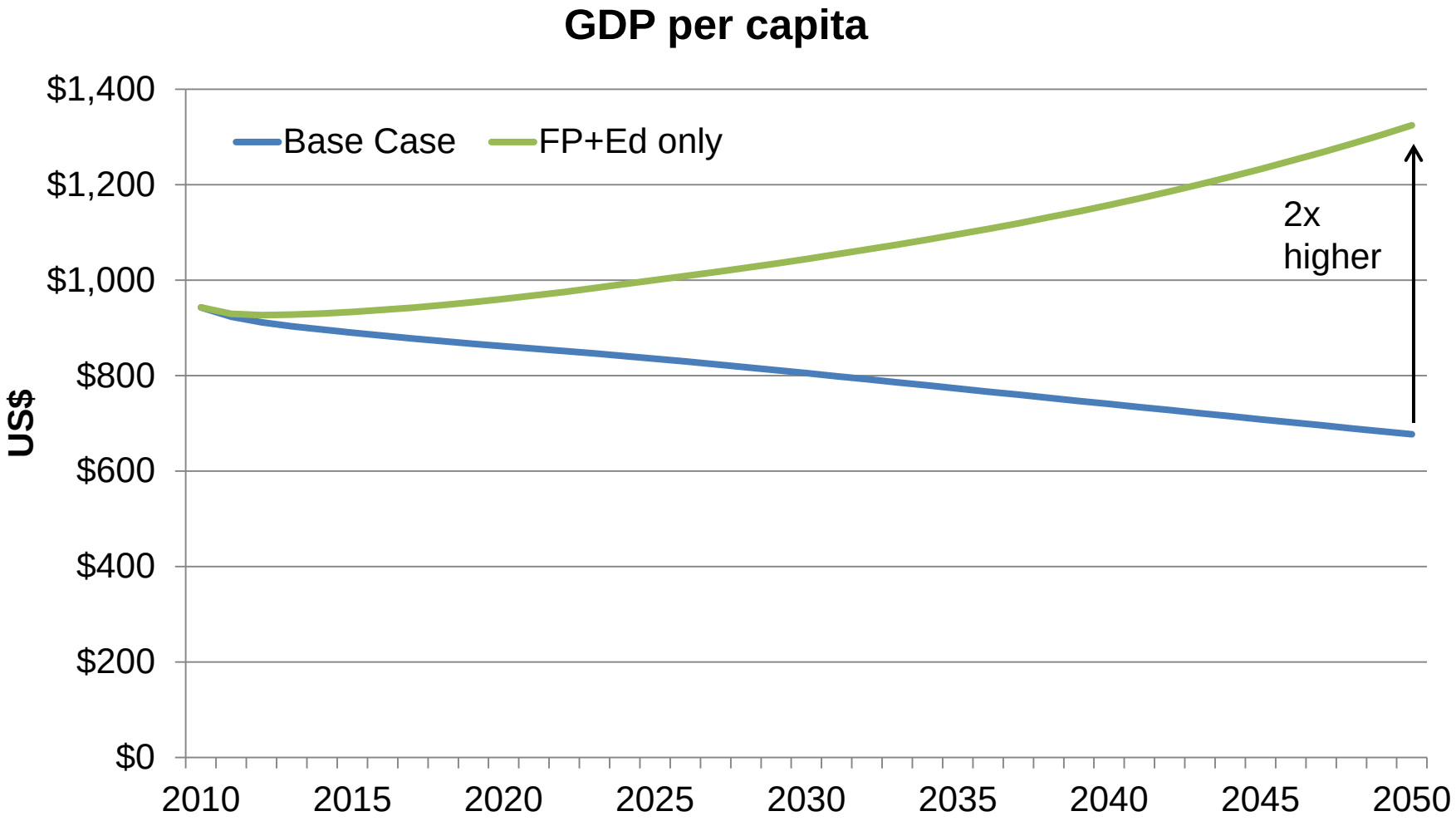
The FP+education scenario produces the youth bulge, which is beginning to move into working-age years.

Results: FP+Ed scenario



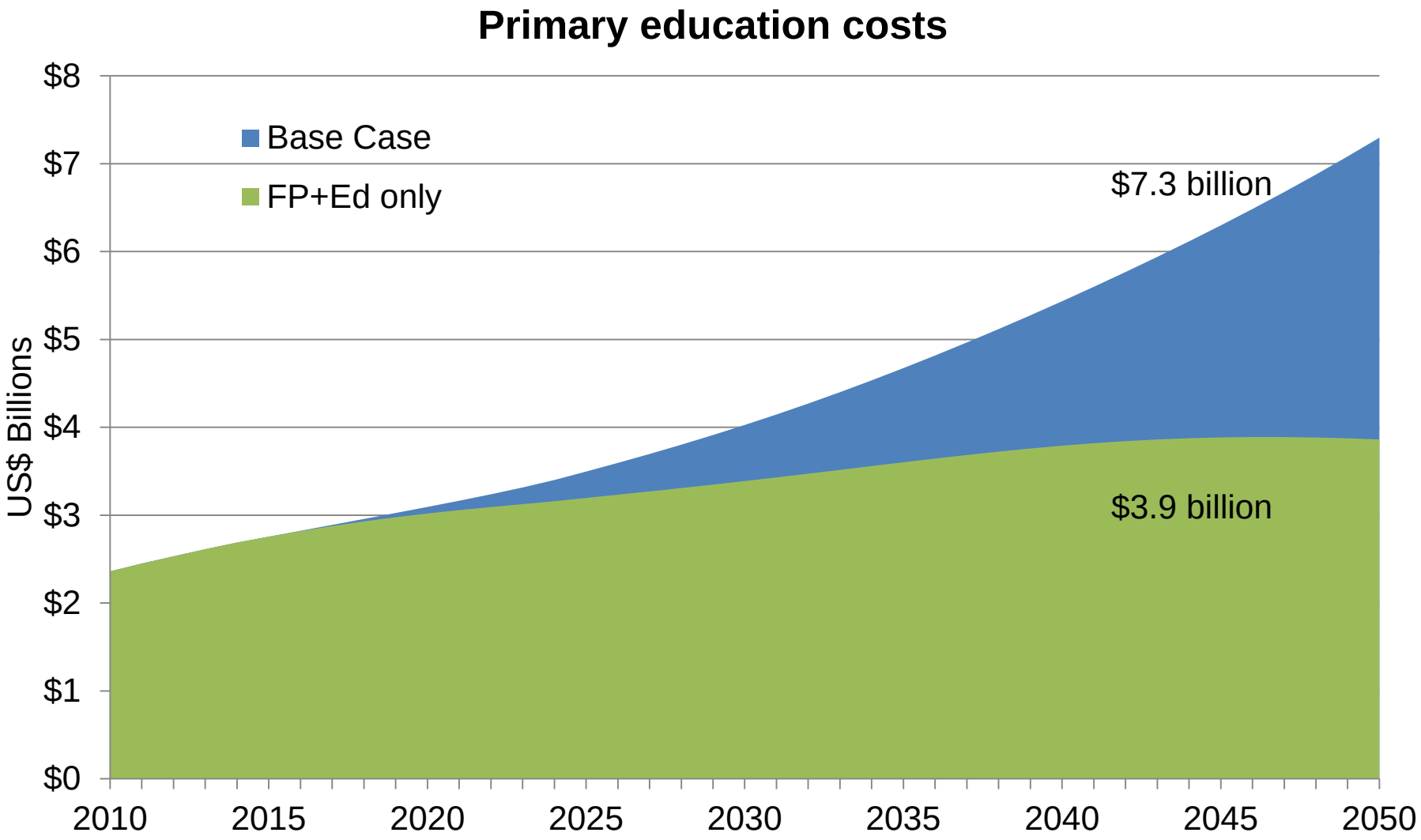
Increased investment and higher human capital induced by FP and education generate increases in GDP.

Results: FP+Ed scenario



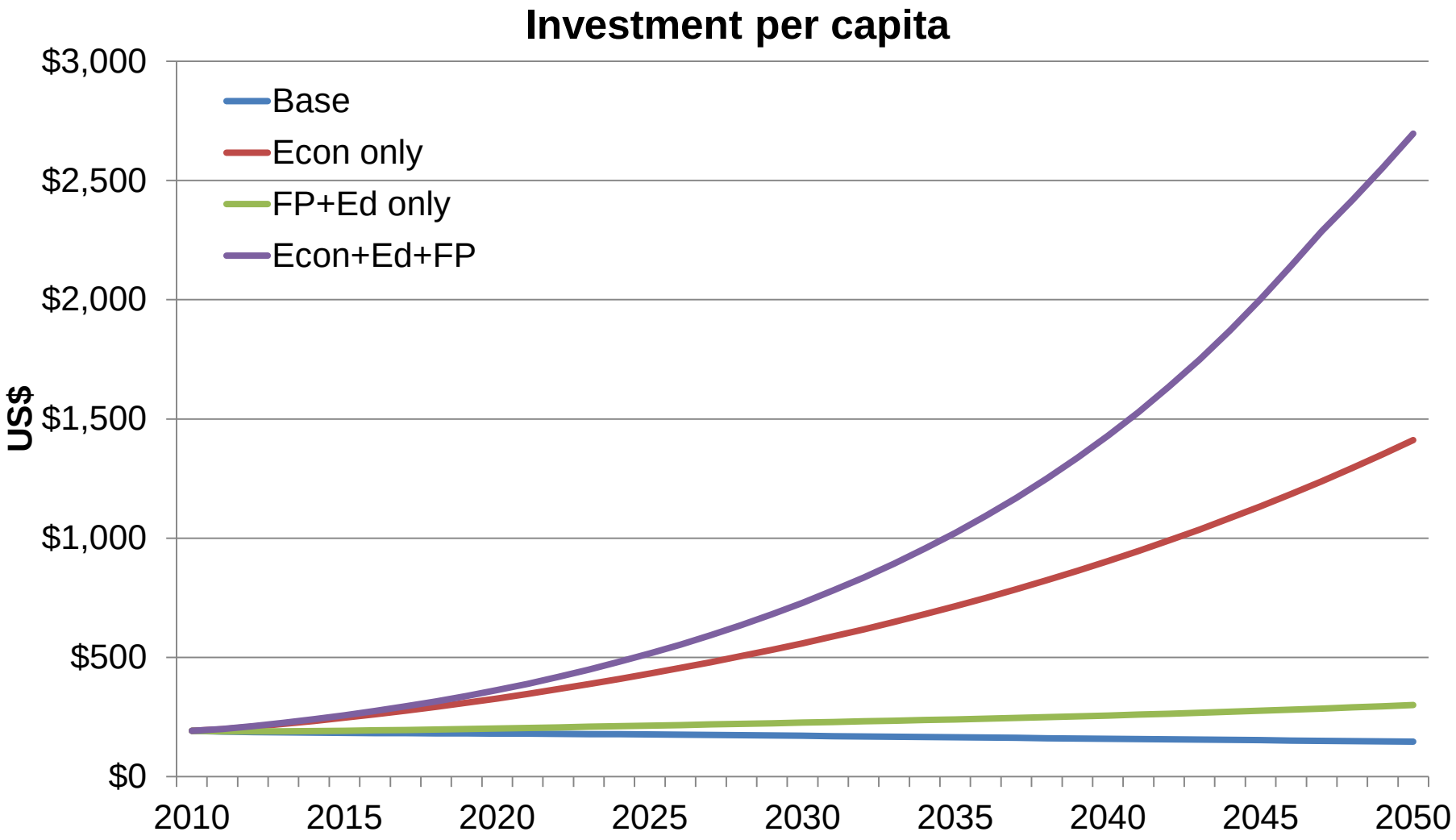
Lowering TFR and improving human capital through FP and education results in GDP per capita twice as high as under the base scenario.

Results: Education costs



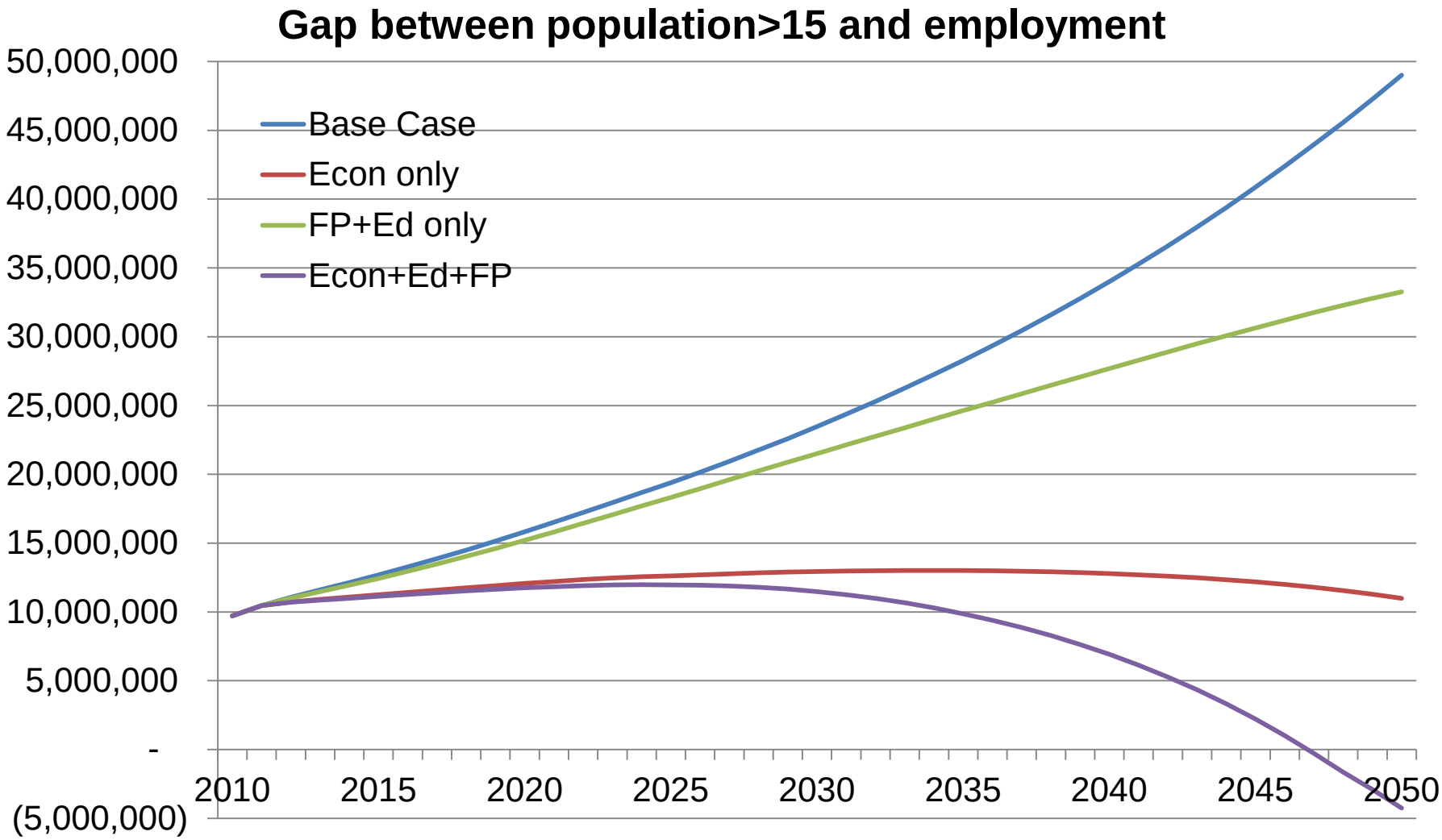
The costs of primary education for Kenya's children are almost half as much in the FP+education scenario than the base case.

Results: Combined scenario



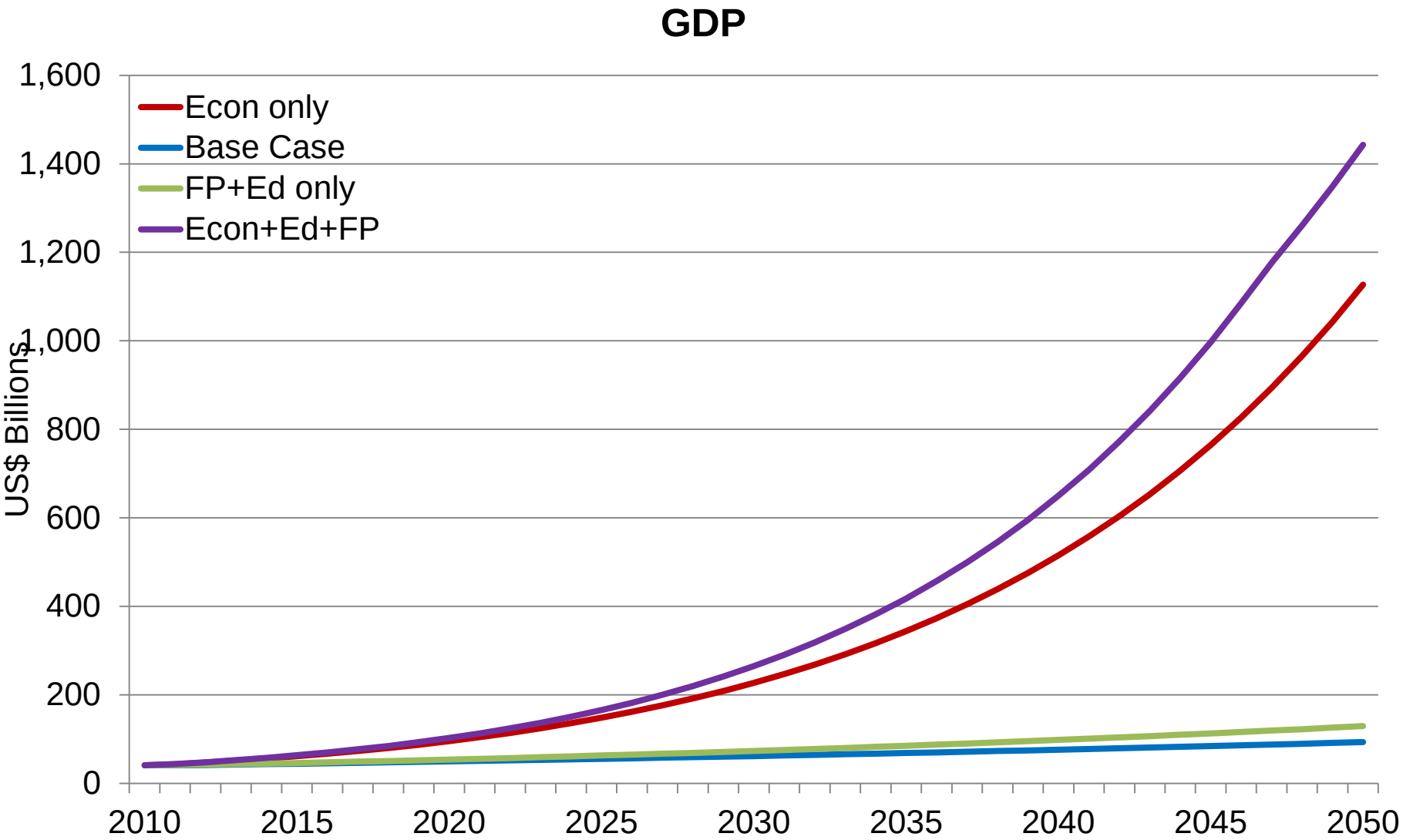
The highest levels of investment are generated by the combined scenario of FP, education, and economic policies.

Results: Combined scenario



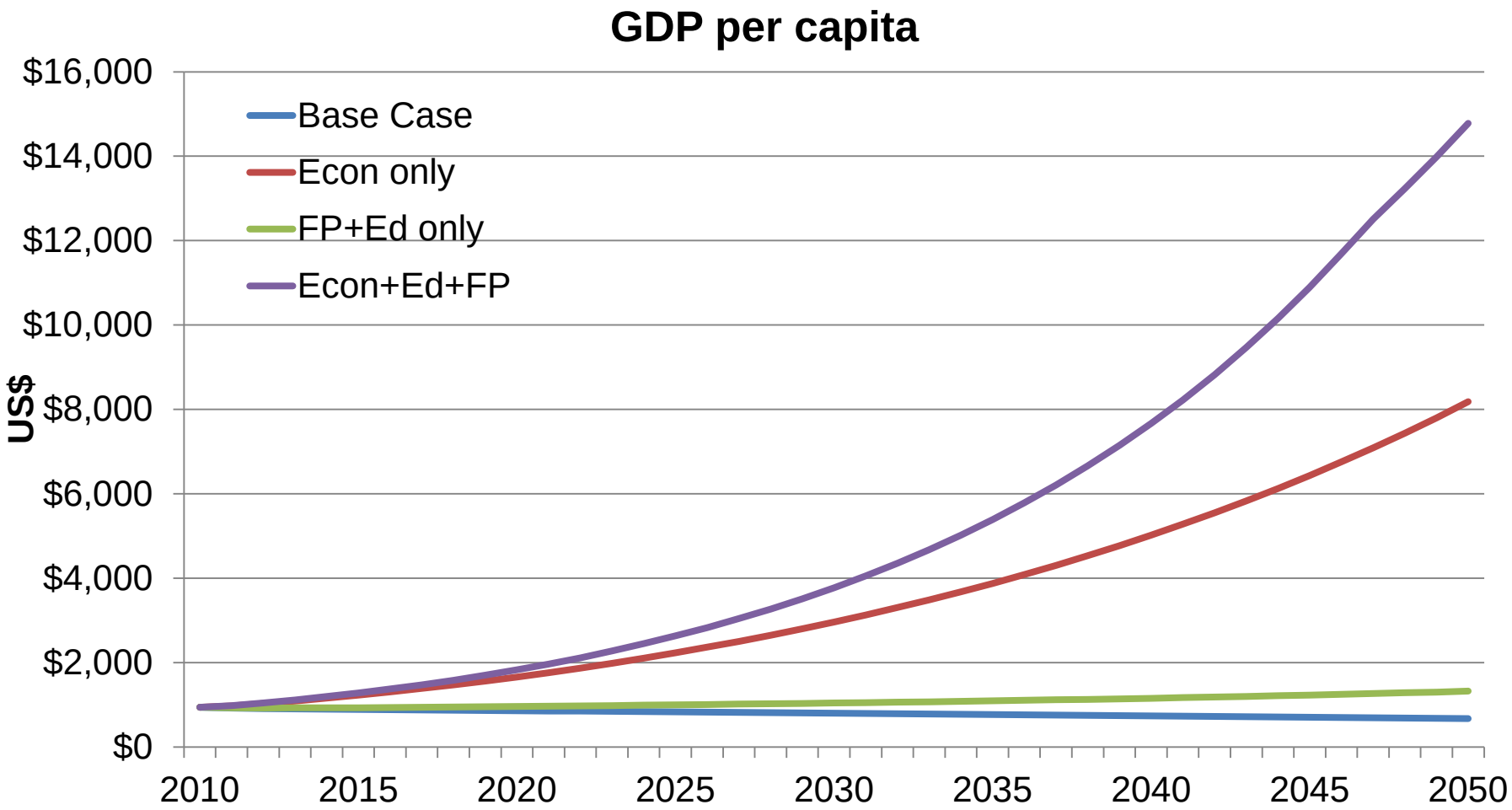
Combined FP, economic, and education policies produce the smallest employment gap.

Results: Combined scenario



Combining economic and education policies with FP substantially increases GDP.

Results: Combined scenario



By 2050, GDP per capita is nearly 20 times greater in the combined scenario than in the base case, and higher than economic or FP strategies alone.

Potential messages for policymakers

- Policies that target a single sector contribute to Kenya's development, but are most powerful when combined.
- Economic, FP, and education policies promote a demographic dividend by increasing investment, productivity, and GDP, and significantly reducing the employment gap.
- Investment in these areas must begin now for Kenya to see the benefits of a demographic dividend in coming decades.

Thank You!

www.healthpolicyproject.com

The Health Policy Project is a five-year cooperative agreement funded by the U.S. Agency for International Development under Agreement No. AID-OAA-A-10-00067, beginning September 30, 2010. The project's HIV activities are supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). It is implemented by Futures Group, in collaboration with CEDPA (part of Plan International USA), Futures Institute, Partners in Population and Development, Africa Regional Office (PPD ARO), Population Reference Bureau (PRB), RTI International, and the White Ribbon Alliance for Safe Motherhood (WRA).

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