

# **Family Planning in Egypt is a Financial Investment**

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# Introduction

This report (2015) is a follow up study of an earlier study conducted by (Chao, Research Triangle Institute-2005) aimed to demonstrate the financial benefits of family planning programs to help governments in their decision to allocate their scarce resources

Chao's main purpose of conducting a financial cost-benefit analysis for family planning programs is to evaluate the financial savings to the government as a result of providing the same level of social services to a smaller group of people.

Chao's report was a follow up study for Moreland report (*RAPID Project,1996*)

**Section 1: Cost-Benefit Analysis and Its Applications to Family Planning Programs: (*The theoretical component*)**

**Section 2: Estimated Demographic Impact of Family Planning Programs in Egypt (*The demographic component- impact component*)**

**Section 3: Costs of Family Planning Programs (*Costing component*)**

**Section 4: Impact on Government Social Services Expenditures (Public Expenditure Data(actual and planned)(*the sectoral component*)**

**Section 5 : Total Savings Compared to Family Planning Program Costs (*the benefit component*)**

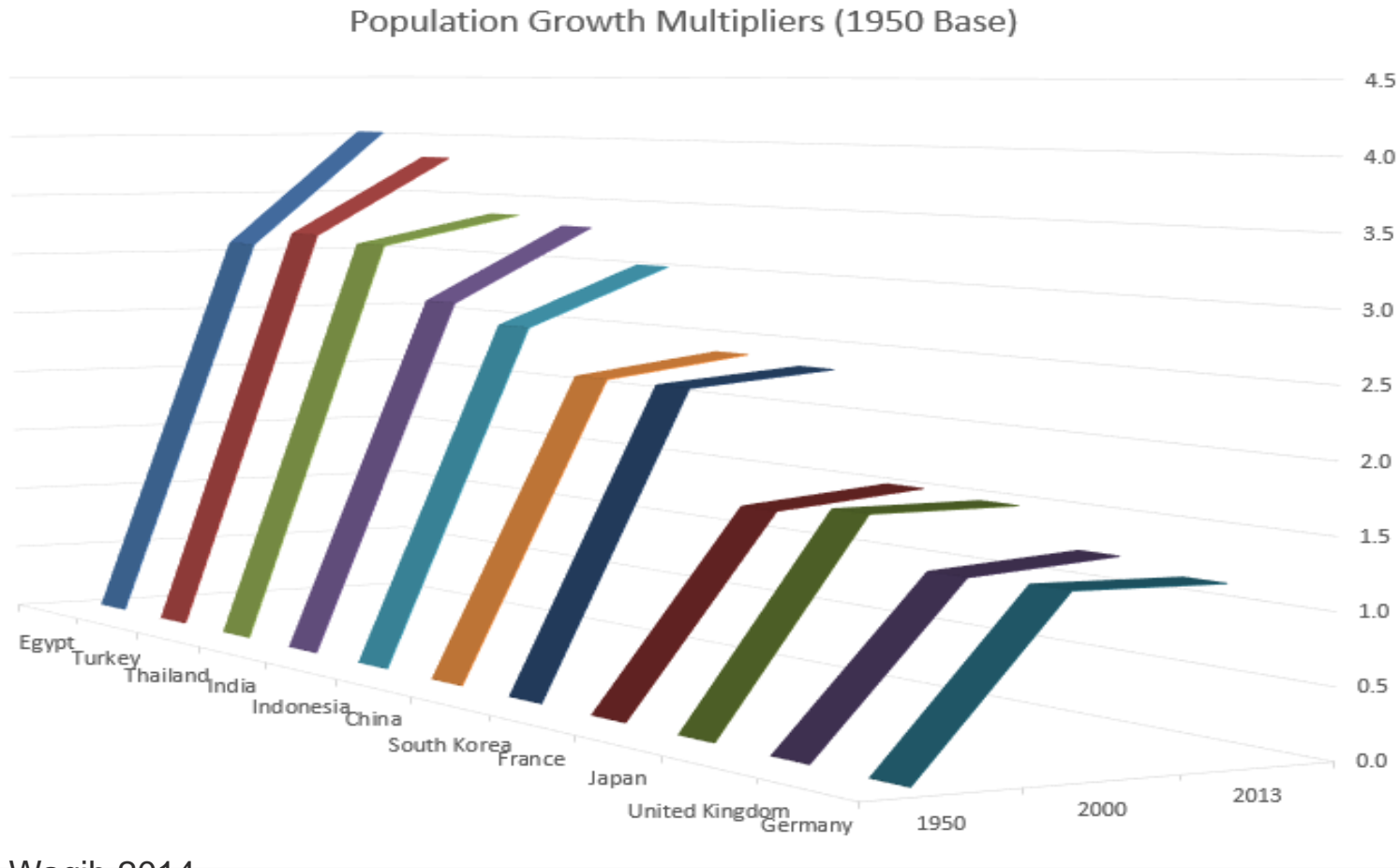
**Section 6: Family Planning Program Benefit-Cost Ratios (*The benefit cost component*)**

**Section 7: Policy and Program Implications( *the policy component*)**

**Section 8: Future Studies**

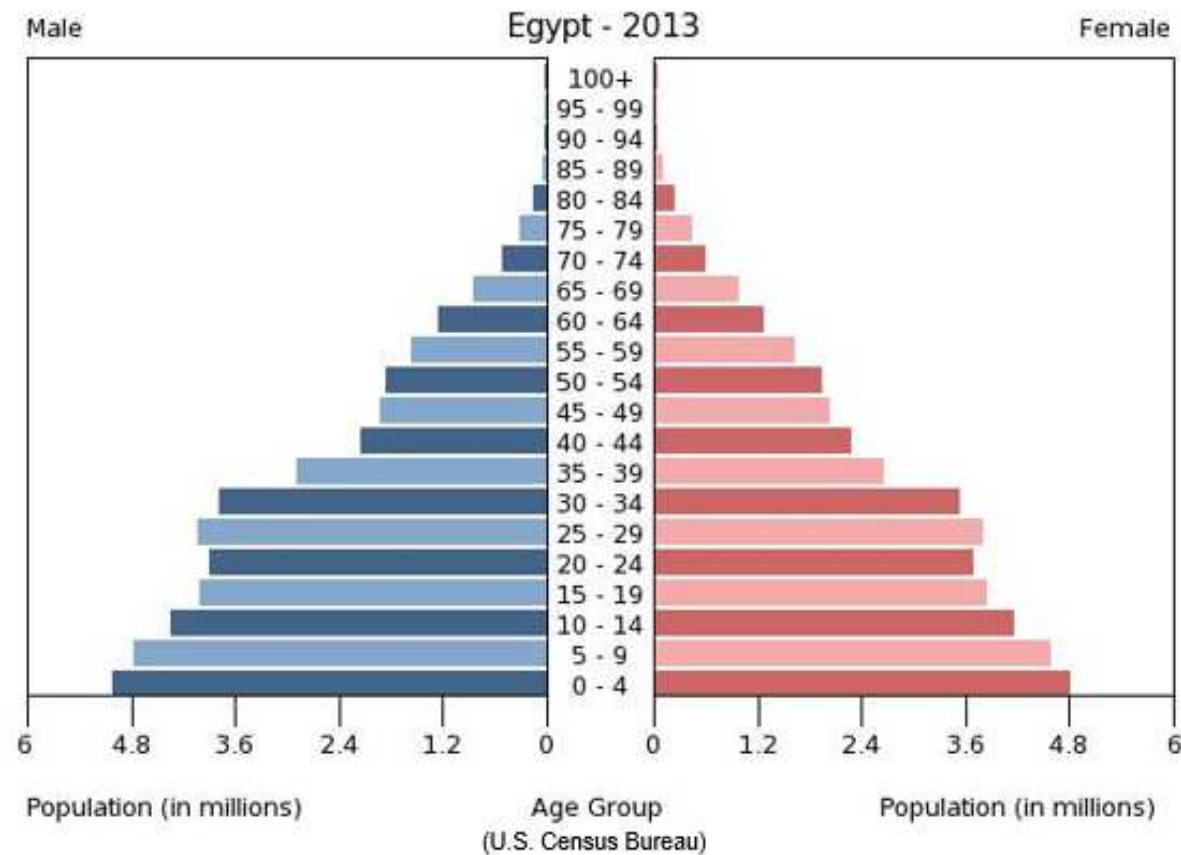
## Figure 1: Comparative Analysis of Population Growth

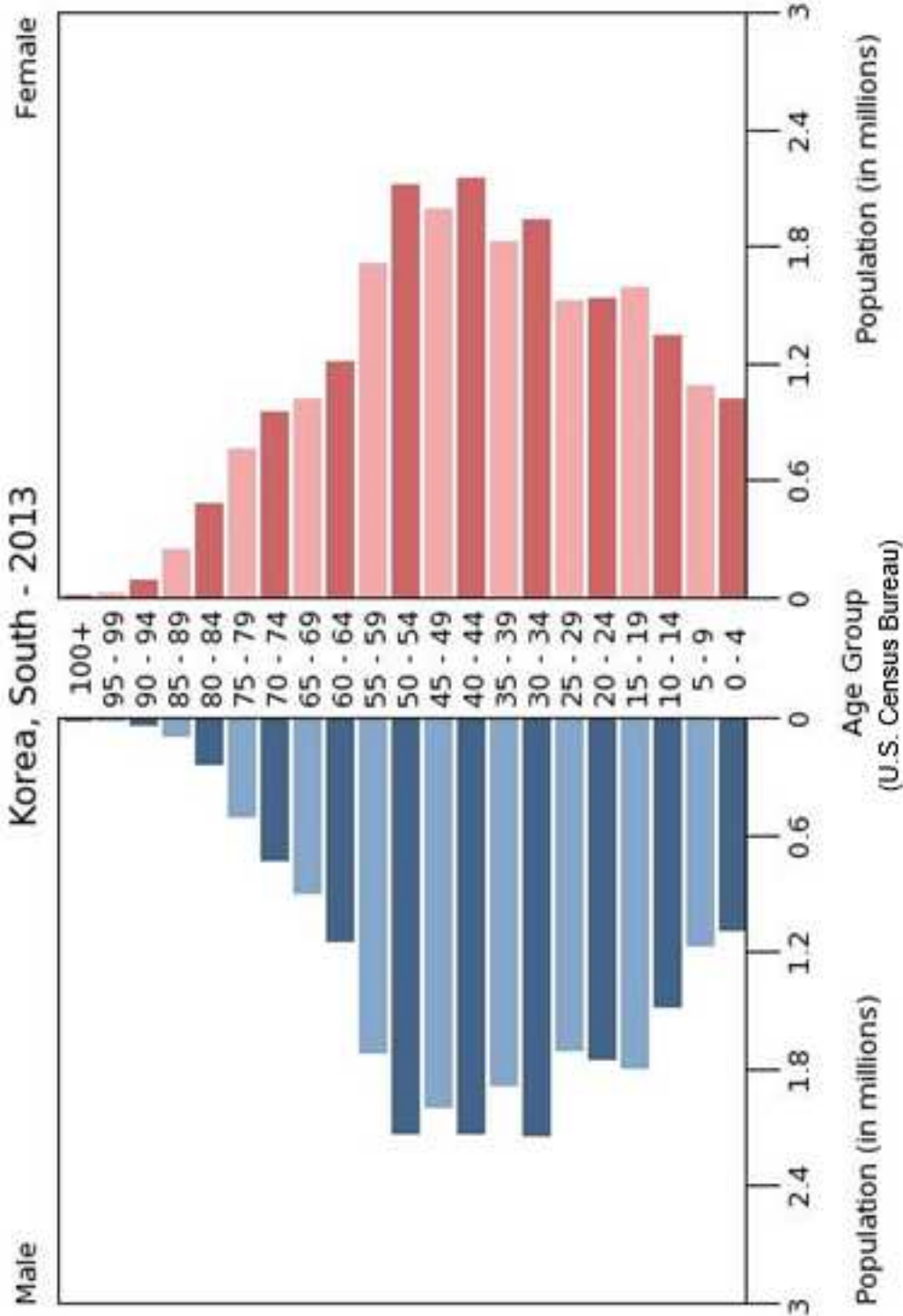
Illustrates the population growth rate of some selected countries in terms of the ratio between their respective populations in the years 1950, 2000, and 2013.



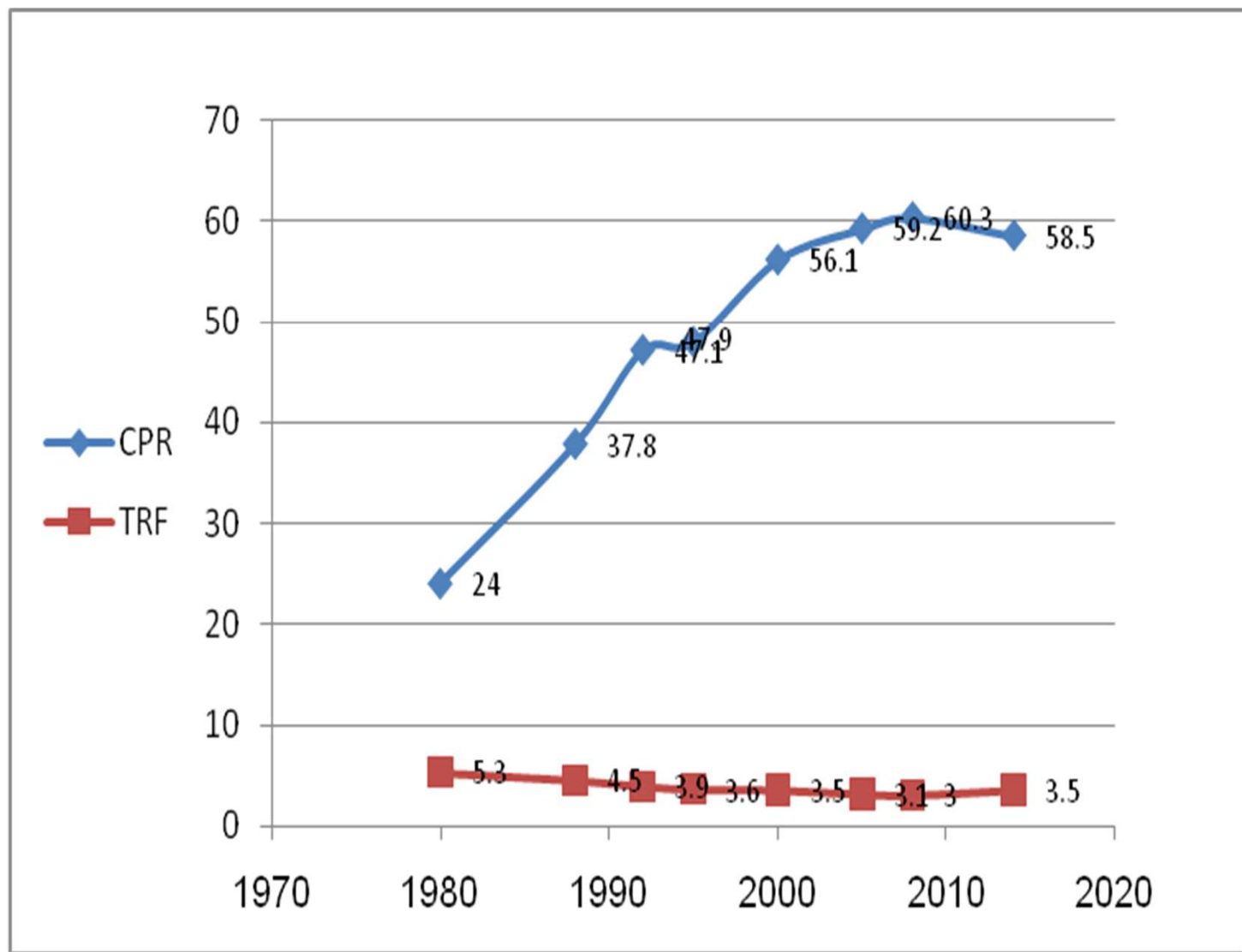
Source: A Wagih, 2014

- While all countries grew considerably between 1950 and 2000, growth rates for most countries declined over the next 13 years. However, Egypt witnessed a fourfold growth since 1950, with Turkey coming in with the second-highest overall growth rate.





### Contraceptive prevalence rate (CPR) and Total Fertility rate(TFR) in Egypt 1980-2014



Source : <http://statcompiler.com/>, accessed January 2015



# Objectives of the Analysis:

**(1) To estimate the impacts of family planning programs on government expenditures for social services such as health, education, housing, and food subsidies**

**(2) To compare reductions in government social services spending as a result of family planning programs to the costs of family planning services; and**

**(3) To show the financial viability of family planning programs and their effectiveness in improving the quality of social services.**

## Methodology: Impact of family planning on size of population:

1-A Family Planning projections “*FAM Plan, A computer Program for Projecting Family Planning Requirements, Spectrum System of Policy Models*”

✓ Based on Two SCENARIOS for TFR :

1- **Constant TFR** scenario:

Assumes that the contraceptive prevalence rate would remain constant at the current level of **58.5%** (DHS 2014) TFR would remain at the year 2014 level of 3.5 .

2- **Replacement TFR** scenario:

Assumes that the contraceptive prevalence rate would continue to increase to reach **74.44%** in the year 2030.

✓ **Time frame:**

✓ 1-( 2014 -2044)

2-2014-2050- (National Strategy of Population)

**Table 1. Changes in CPR under Two Different TFR Assumptions**

<b>Year</b>	<b>Contraceptive Prevalence Rate</b>		<b>Total Fertility Rate</b>	
	<b>Constant TFR Scenario</b>	<b>Replacement TFR Scenario</b>	<b>Constant TFR Scenario</b>	<b>Replacement TFR Scenario</b>
<b>2014</b>	58.5	58.5	3.5	3.5
<b>2015</b>	58.5	59.5	3.5	3.4
<b>2020</b>	58.5	64.5	3.5	3.0
<b>2025</b>	58.5	69.5	3.5	2.5
<b>2030</b>	58.5	74.4	3.5	2.1
<b>2035</b>	58.5	74.4	3.5	2.1
<b>2040</b>	58.5	74.4	3.5	2.1
<b>2045</b>	58.5	74.4	3.5	2.1
<b>2050</b>	58.5	74.4	3.5	2.1

-In line with the National Strategy for population 2015-**2030** (NPC,2014,p.36),

the replacement rate is assumed to be reached in the year 2030,

as the government will undertake a rigorous and comprehensive strategy to reach this level.

This is based on the medium-fertility variant (UN,2012),which assumes that fertility rates will eventually balance out around **2.1** children per woman

Note: the conversion factor of IUD and implants depends on national population council report.

**Table 3. Unit Cost of Contraceptives, by Method, 2014( National Council Population Report:Report of the Cost of Family Planning in Egypt-cost by aAcceptor and Use)**

Method	Unit Cost (£E)
<b>UCPM</b>	<b>122.30</b> ---
	<b>(23LE,Chao)</b>
<b>Acceptor</b>	
Sterilization	
IUD	
Implant	
Diaphragms	
<b>User</b>	
Pills	
Condoms	
Vaginal foaming tablets	
Injectable	
Creams	

**Table 2. Changes in Births and Population Under Two Different TFR Assumptions**

<b>Year</b>	<b>Number of Births (in millions)</b>		<b>Total Population (in millions)</b>	
	Constant TFR Scenario	Replacement TFR Scenario	Constant TFR Scenario	Replacement TFR Scenario
<b>2014</b>	2.67	2.67	86.73	86.73
<b>2015</b>	2.69	2.62	88.92	88.86
<b>2020</b>	2.77	2.36	100.07	98.66
<b>2025</b>	2.81	2.04	111.20	106.71
<b>2030</b>	2.92	1.75	122.40	112.99
<b>2035</b>	3.17	1.88	134.21	118.75
<b>2040</b>	3.68	2.08	147.68	125.04
<b>2045</b>	4.13	2.15	163.11	131.53
<b>2050</b>	4.48	2.08	180.00	137.45

### **Table 3. Public Expenditure on Various Sectors (in million Egyptian Pounds)**

Source: Ministry of Finance, 2014

<b>Sector</b>	<b>Actual Budget 2012/2013</b>	<b>Projected Budget 2014/2015</b>
<b>Health</b>	26128	42402
<b>Education</b>	66180	94355
<b>Food Subsidies</b>	32551	31557
<b>Housing and public services</b>	11912	21911

## 2-Benefit Cost Analysis

✓ Benefit – Cost Analysis by conducting

$$\frac{B_1}{(1+i)} + \frac{B_2}{(1+i)^2} + \dots + \frac{B_n}{(1+i)^n} > \frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \dots + \frac{C_n}{(1+i)^n},$$

Where

$C_1, C_2, \dots, C_n$  = the series of expected costs in year 1, 2, ..., n;

$B_1, B_2, \dots, B_n$  = the series of expected benefits in year 1, 2, ..., n;

$i$  = the appropriate discount rate for annual discounting

**If the benefits generated by the investment are larger than costs the benefit-cost ratio is greater than one, the project should be undertaken.**



**The family planning program** will lead to a decrease in population size which will be translated in a lower level of public expenditure on health, education, food subsidies and housing and utilities.

**The benefit cost analysis** is based on the projection of government expenditure on family planning programs over the period 2014-2050 and the saving in government expenditure on health, education, food subsidy and housing due to the number of births averted by the family planning program over the same period

**The saving in the government expenditure** is focused on public expenditure that is directly related to population growth, and will include total saving as a sum of sectorial saving on health , education food subsidy and housing

# Main Findings of the report

- 1- Number of births averted = **43.31** million birth
- 2- Estimated cost for family planning program = **8 billion** Egyptian Pound
- 3- Benefit - Cost ratio **56.12** ( the average return on each Egyptian pound spent on family planning programs for the period 2014-2050) and is the sum of the benefit cost of health(**9,24**) education(**31.15**), food subsidy (**11.52**) and housing and utilities(**4.21**) These results show that the major saving will occur in the educational expenditures followed by food subsidy , health and housing and utilities. These results depend on 2012/2013 actual figures.
- 4- The net savings stream was used to calculate the internal rate of return (IRR) which equates the present value of all costs with the present value of all benefits. The higher a project s IRR , the more desirable is to undertake it.  
IRR = **199.4%**Chao :**182%** higher than by ordinary investment projects

## Benefit-Cost Ratios

	Moreland (1996) Results	Chao(2005) Results 2000-2030	Our Results 2014-2050	Results 1(actual budget) 2014-2044*	Results 2(planned budget 2014- 2044**
Health	1.74	9.41	9.24	7.81	12.08
Education	6.64	19.20	31.15	25.47	25.47
Food Subsidy	1.76	6.02	11.52	9.72	8.99
Water, sanitation, and other Utilities	9.23	5.64			
Housing	7.22				
Housing and Utilities			4.21	3.56	6.24
<b>Total</b>	<b>26.59</b>	<b>40.27</b>	<b>56.12</b>	46.56	52.78

**All the results are based on a 10% discount rate**

# Policy Considerations

- Implementation of comprehensive family planning programs
- Adoption of an advocacy action plan.
- Public costs should increase if donors will not continue in spending on FPP.
- Efficiency in these programs should be accompanied with reducing costs, reallocation of resources; elimination of unnecessary costs; changes in the method mix to cheaper methods; increased efficiency of client's use; and reduction in avoidable switching
- Integration of human resource development programs .

# Future Studies

1-Further analysis of the trend in the cost of family planning programs to GDP over a time span with reduction of fertility rates.

2-Impact of changes in the age composition, population size, labour productivity, maintenance costs for social programs should be included

3-This analysis should be repeated by including the non financial benefits of family planning programs, as well as also direct and indirect benefits.

4-The impact of declining fertility rates on the possibility of reaching the window of opportunity has to be examined assuming that all other factors are available such as infrastructure, institutions and savings.

5- The impact of declining of fertility rates on labour force, productivity, quality of services , income per capita and total income should be studied