

# Assessing the Key Drivers of Potential GDP: A Production Function Approach

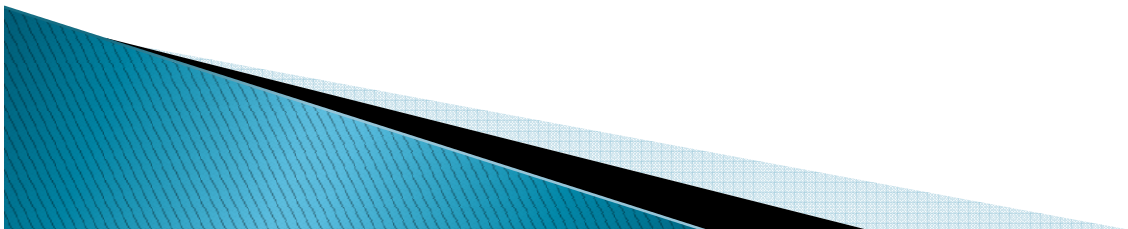
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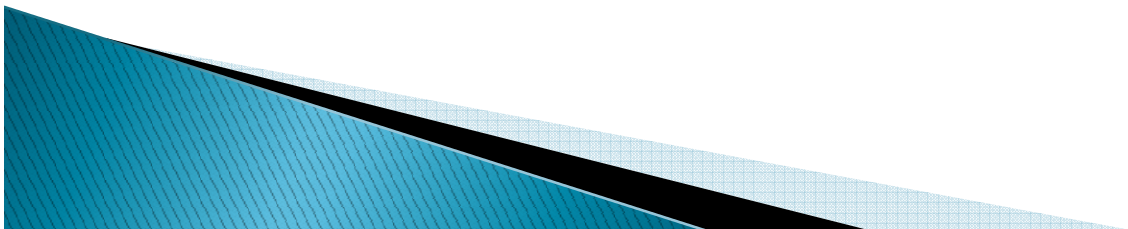
# Outline

- ❖ Introduction
- ❖ Problem statement
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- ❖ Conclusions & Policy recommendations



# Introduction

- ❖ Understanding an economy's level of output requires understanding aggregate supply/output/GDP
- ❖ Why assess potential GDP & Key drivers?
  - i. Evaluate effects of aggregate DD i.e. if  $\text{aggregate DD} > \text{non-inflationary aggregate SS}$ ; calls for tighter fiscal & monetary policies



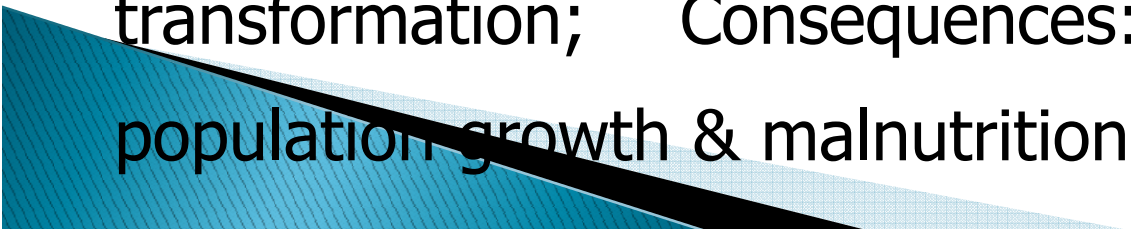
## Intro...cont..

ii. Understand longer term prospects of the county

iii. Medium term projections

- ❖ Potential GDP: Level of output that can be achieved if all factors of production are employed (Conway and Hunt, 1997)
- ❖ In the medium term, ability to produce goods & services depends on *physical capital, employment & TFP*

# Problem statement

- ❖ Kenya is an emerging economy where Agriculture contributes 24 percent of the GDP (GoK, 2014)
  - ❖ A majority of the population (57%) lives in poverty reliant on climate-sensitive economic activity (Ojwang' *et al.*, 2010)
  - ❖ According to Olila *et al.* (2014), over 70% percent of the population derive livelihood from agric.
  - ❖ The overdependence on this sector has stalled structural transformation; Consequences: persistent poverty, population growth & malnutrition
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# Problem statement

- ❖ Various attempts have been made to transform the economy along a sustainable path; devolution of resources, prudent policies aimed at poverty alleviation
- ❖ *However, there exists limited information on the key determinants of agricultural potential GDP*
- ❖ The result is an elusive structural transformation, with an embryonic manufacturing sector



## Methodology

- ❖ Secondary data from IMF World Economic Outlook (WEO) database was used (<https://www.imf.org/external/ns/cs.aspx?id=28>) for 1980–2012.
- ❖ Labour data (ILO)
- ❖ A growth accounting approach was used to estimate potential output and its associated key drivers i.e. K& L
- ❖ Assumption: K share of  $Y = 0.45 (<1)$
- ❖ Real GDP (Millions of Kshs), Estimated capital, Population, L (working age population)  
<http://www.ilo.org/ilostat/faces/home/statisticaldata?locale=en>

# Production function

$$Y_t^* = A_t^* K_t^\alpha L_t^{*1-\alpha}$$

$$\ln Y_t^* = \ln A_t^* + \alpha \ln K_t + (1-\alpha) \ln L_t^*$$

Labor's share  
in national  
income

Potential  
output

Total factor  
productivity  
(TFP)

Capital's  
share in  
national  
income

Capital stock

Labor input  
based on  
employment



# Results & Discussions

## ❖ Average growth rates


	TFP	K	WAP	Employment (L)
1981–2012	-0.012%	1.423%	3.136%	5.224%
1981–1989	-0.772%	1.586%	3.988%	8.357%
1990–1999	-0.524%	0.476%	3.979%	4.483%
2000–2012	1.033%	2.342%	3.066%	3.330%
2005–2012	1.418%	3.375%	2.876%	3.279%

# Results & Discussions

## ❖ Average contributions to GDP

	TFT	K	Employment	Y
1981-2012	-0.012%	0.640%	2.873%	3.502%
1981-1989	0.087%	0.695%	2.718%	3.500%
1990-1999	0.150%	0.741%	2.586%	3.477%
2000-2012	0.323%	0.777%	2.472%	3.572%
2005-2012	0.482%	0.814%	2.373%	3.669%

## Conclusions & policy recommendations

- ❖ The study established that potential output is mainly driven by one factor (L)
  - ❖ Growing K while TFT remains negative signals misallocation of investments
  - ❖ Declining potential employment signals inefficiency in the labour market.
  - ✓ Need for policies aimed at: Enhancing the use of K; improving efficiency in the resource allocation as well as those focused on building stronger employee unions.
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“It is the agricultural sector that the battle for long-term economic development will be won or lost” *Gunnar Myrdal (1974)*

THANK YOU

