
بسم الله الرحمن الرحيم

Human Resource Development and Inclusive Growth: Evidence from Selected Countries

Mirajul Haq

Assistant Professor International Institute of Islamic Economics (IIIE),

International Islamic University, Islamabad

Email: haqmirajeco@gmail.com

Misbah Kureshi

Ph.D Scholar Pakistan Institute of Development Economics (PIDE),

Islamabad

Email: misbah.kureshii@gmail.com

Muhammad Akram

Assistant professor at International Institute of Islamic Economics (IIIE), International Islamic University, Islamabad

E.mail: makram2341@gmail.com.

Outlines

- Introduction
- Methodology
- Empirical Findings
- Conclusion

Introduction

Inclusive growth is a recently developed concept that incorporates the components of poverty reduction, productive employment, and distributive justice along with the pace of economic growth

- Traditional Neo-Classical Growth Models ------ Solow (1956), Cass (1965), Koopmans (1965) ---- factor accumulation (capital formation) is the major fore behind EG

- Cross-country differences in factor accumulation are due either to differences in saving rate (Solow), preferences (Cass-Koopmans), or other exogenous parameters as total factor productivity growth
  - ***Technological Progress - exogenous process in the long run analysis of EG (driven only by time)***

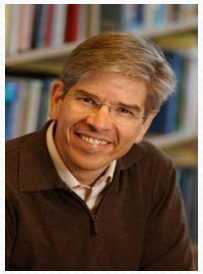
    Rules out human capital to have an impact on long-run EG (Resource Base)

Introduction

- In 1960s human capital and its role in the long run economic growth process got space as a heated issue among economists and policy makers
- A number of studies highlighted the role of human capital in the growth process ---------- Arrow (1962), Uzawa (1965), Nelson and Phelps (1966)
- Growth Literature gradually switch from Resource Base (Physical Capital) to Knowledge Base (Human Capital)

Introduction

- The first generation of Endogenous Growth Theories (Romer,1986 and Lucas ,1988) – Neo-Classical View ----- Emphasize on Human Capital Accumulation --- Unlike physical capital, human capital exhibits non-decreasing returns to scale, that determines long run EG in the economy- Assume
  - **Endogenous Technological Progress**
  - **Non-Decreasing Returns to Scale of Human Caital**



- **Romer (1986) model based on learning by doing idea of Arrow (1962)**
  - **Human capital is by product of physical capital**
  - **Firm ↑ capital stock results ↑ learning by doing → ↑ human capital accumulation**

- **Lucas (1988) human capital is the engine of EG**

  Two models

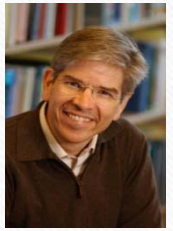
  a) **Human Capital accumulation off-the-job training**

  b) **Human Capital accumulation on-the-job (learning by doing)**

According to these models ------- Countries differences in per capita income growth is mainly explained by differences in resource allocation to Human Capital

Introduction

- Second generation of endogenous growth model ----- Romer (1987,1990), Grossman and Helpman (1991) and Aghion and Howitt (1992) give emphasis to the endogenous development of technology



- Creation of new knowledge is the main determinant of long-run EG

- Romer (1987) - technology is endogenously produced as a side effect of private investment decisions-Assumed
  - Firm's stock of knowledge increases in proportion to the firm's investment in R&D
  - Investment in R&D creates spillover effects - public knowledge increases

A country may be more prosperous than another if it allocate more resources to creation of knowledge, innovation, ideas.

Introduction

- North (1990), North et al. (2009), Acemoglu et al. (2005), Acemoglu and Robinson (2012) argued that ***factor accumulation, and innovation*** are the ***proximate*** causes of EG ------- ***Institutions explain long run economic growth***
  - ***Economic Institution ------ Economic Growth***
    - ✓ ***Shape the incentives of key economic actors (consumer, producer, investor, worker, labor, buyer, seller etc.) ------ influence investments in physical capital, human capital, technology, and the organization of production.***
    - ✓ ***Economic institutions are endogenous ---- determine as collective choices of the society ----- but not all individual or groups will prefer the same Economic Institutions ------ conflict of interest among various groups and individuals over the choice of Economic Institutions***
    - ✓ ***How Economic Institutions determine? Depends on political power ----- group which has more political power is likely to secure the set of economic institutions that is prefer.***
  - ***Political Power*** → ***Economic Institutions***

Inclusive Economic Growth cause as a result of Inclusive Institutions

Introduction

- The emphasize on economic growth inclusiveness has started recently especially the high growth rates in the emerging Asia
  - High growth in the two hugely populated economies China and India------- however both economies suffer from the large parentage of poor
  - In the two tiger economies South Korea, Taiwan (China) have impressive economic growth ---------the level of inequality remained more or less unchanged
  - In most of the emerging economies the level of inequality remained, more or less unchanged
  - The degree of inclusiveness of growth is still low in most of the developing economies.
- Lack of human resource development, depraved governance, extractive institutions ------ Main Causes

Introduction

- The existence of massive poverty, high unemployment, illiteracy in some of the emerging economies calls for the basic question that "***whether this growth has been inclusive in character".***
  - ***The key objective of this study is to highlight the relationship between Inclusive Growth (in the context of inequality and poverty reduction, employment generation, and justice prevalence and Human Resource Development (education, health, and R&D) -------- in the sample of 120 emerging and developing economies over the last 23 years.***
- Investigate that whether Human Resource Development, and Institutional Soundness can be a more sustainable way out of inequality, poverty, and unemployment --------- Leads towards Inclusive Growth

Methodology

Inclusive Growth and HRD

As the study is an attempt to examine that how investing in Human Capital, Human Resource Development-----can be a more sustainable way out of inequality, poverty, unemployment and hence ------towards Inclusive Growth

In this association the following empirical models have been estimated

Empirical Model-1: Pace of Economic Growth and HRD

$$G_i = \alpha + \beta HRD_i + \delta X_i + e_i \qquad (5)$$

G_i = Pace of Economic Growth

HRD_i = Human Resource Development that captures expenditures on R&D, Education expenditure as a percentage of GDP, Expenditure on Health at percentage of GDP.

X_i = It includes the vector of all controlled variables. This include Physical Capital (Gross Fixed Capital Formation, Investment to GDP), Foreign Aid, Trade openness, Foreign Direct Investment, Political Stability, Net Financial Flow, Natural Resource Wealth, Economic Stability (Inflation), Population Growth, Labor Force (Working Age of Population) and Institutional variable.

Methodology

Empirical Model-2: Productive Employment and HRD

$$E_i = \alpha + \beta HRD_i + \delta X_i + e_i \quad (2)$$

E_i = Productive employment (employment to population ratio)

Empirical Model-3: Poverty and HRD

$$P_i = \alpha + \beta HRD_i + \delta X_i + e_i \quad (3)$$

Empirical Model-4: Distributive Justice and HRD

$$J_i = \alpha + \beta HRD_i + \delta X_i + e_i \quad (4)$$

I_i= GINI coefficient (proxy for Distributive Justice)

Empirical Model-5: Inclusive Growth and HRD

$$A_i = \alpha + \beta HRD_i + \delta X_i + e_i \quad (5)$$

A_i = Index of Inclusive Growth (i.e. Pace of Economic Growth, Productive employment, Poverty Reduction, and Distributive Justice).

Methodology

Estimation Techniques

- ✓ As our analysis is based on cross sectional data of 120 developing economies (50 percent of the World economy at PPP basis)
- ✓ This study used Ordinary least squire (OLS) for estimation
  - ✓ All dependents variables are in continuous form
  - ✓ Non availability of data ---- unbalanced panel
  - ✓ Institutional variables are persistent ----- don not show any change over the time
  - ✓ Twenty three years average (1990-2013)

Methodology

Sample of Countries

120 developing and emerging countries

1) Sub Saharan Africa
2) Latin America/ Western Hemisphere
3) Asia and Pacific
4) Middle East and Central Asia
5) Europe

Methodology
Data and Data Sources

Variable	Definition of Variable	Sources of Data
Growth rate of GDP Per Capita	It is measured as an average from 1990 to 2013 and is real at constant the prices of 1990.	World Bank (2013), World Development Indicators
Distributive Justice	Income Inequality Index (GINI Coefficient Index) and Hoover Index (Rrobin Hood Index) Human Development Index Gender Inequality Index (GII)	World Bank (2013), World Development Indicators Human Development Reports (HRD) The Global Gender Gap Index 2013 rankings
Productive Employment	Employment to Population Ratio, 15+, total (%)	World Bank (2013), World Development Indicators
Poverty Eradication	Poverty Headcount Ratio [($1.25 a day (PPP) (% of population)]	World Bank (2013), World Development Indicators
Health Expenditures	Health Expenditure, (% of GDP)	World Bank (2013), World Development Indicators
Health	Life Expectancy	World Bank (2013), World Development Indicators
R&D expenditure	• Research and development expenditure (% of GDP) • Researchers in R&D (per million people)	• World Bank (2013), World Development Indicators • UNESCO
Secondary School Enrollment Ratio	Gross Secondary School Enrollment Rate. It is the proportion, regardless of age, to the population of the age group that officially corresponds to the level of education shown, averaged from 1990 to 2012	World Development Indicators, World Bank

Methodology

Physical Capital	**Gross fixed capital formation (% of GDP)** **Investment to GDP**	**World Development Indicators, World Bank/ Different issues of International Monetary Fund (IMF) and International Financial Statistics Yearbooks**
Foreign Direct Investment	Net inflow (percentage of GDP) Net outflow (percentage of GDP)	World Development Indicators, World Bank
Political Stability	Polity score (Project data on Polity=dem-aut, ranging from -10(full Authoratrian) to 10(full democracy), averaged from 1964-2009, depending availability	World Development Indicators, World Bank
Economic stability	Inflation, GDP deflator (annual %)	World Development Indicators, World Bank
Population density	Population density (people per sq. km of land area)	World Development Indicators, World Bank
Institutional indices	Index made by government effectiveness, regulatory quality,rule of law, political stability and absence of violence/terrorism, voice and Accountability.	The Worldwide Governance Indicators (WGI)
Natural Resources Rents	It is measured as the per cent share of natural resources exports (including agricultural and raw material exports, fuel exports, food exports, and ores and metals exports) in GDP, averaged from 1960 to 2000.	World Development Indicators, World Bank

Empirical Findings

Table 1: Dependent Variable: Growth of GDP Per Capita

Variables	β values
Secondary School Enrollment Ratio	0.351*
	(0.000)
Health Expenditures	0.243**
	(0.023)
R&D Expenditures	0.083***
	(0.073)
Institutional Index	0.61*
	(0.000)
Physical Capital	2.632*
	(0.000)
Ethnicity	-0.017
	(0.436)
Population Growth	-0.516***
	(0.061)
R-Squared	0.66
Adjusted R-Squared	0.53

Note: *, **, *** shows significance at 1, 5, and 10 respectively
P-Values for t-test is in the Parenthesis

Empirical Findings

Table 2: Dependent Variable is Employment

Variables	Specification_1	Sepecificaiton_2
S. S Enrollment Ratio	-0.315*	--------
	(0.000)	
T Enrolment Ratio	-------	-1.140
		(0.258)
Health Expenditure	0.457*	0.521*
	(0.002)	(0.013)
R&D Expenditure	0.130	0.120
	(0.223)	(0.905)
Institutional Index	0.480	0.250
	(0.635)	(0.802)
Physical Capital	1.840**	1.862**
	(0.046)	(0.024)
Ethnicity	-0.700***	0.625***
	(0.086)	(0.046)
Labor Force	1.681	1.220
	(0.521)	(0.228)
R-Square	0.50	0.57
Adj. R-Square	0.44	0.51

Empirical Findings

Table 3: Dependent Variable is Poverty

Variables	Specification_1	Sepecificaiton_2
S. S Enrollment Ratio	-0.899	------
	(0.345)	
T Enrolment Ratio	-------	-0.900
		(0.375)
Health Expenditure	-0.351**	-0.371*
	(0.024)	(0.003)
R&D Expenditure	0.641	0.127*
	(0.471)	(0.002)
Institutional Index	-0.346***	-0.680***
	(0.062)	(0.065)
Physical Capital	-0.816***	-0.924***
	(0.057)	(0.054)
Ethnicity	0.026	0.024
	(0.782)	(0.940)
Population Growth	1.960***	1.450***
	(0.057)	(0.035)
Life Expectancy	0.428*	0.642*
	(0.004)	(0.002)
R-Square	0.16	0.18
Adj. R-Square	0.14	0.17

Empirical Findings

Table 4: Dependent Variable is GINI Coefficient

Variables	Specification_1	Sepecificaiton_2
S. S Enrollment Ratio	0.340	-----
	(0.734)	
T Enrolment Ratio	----	-0.179***
		(0.079)
Health Expenditure	0.024	0.060
	(0.763)	(0.954)
R&D Expenditure	-0.800	-0.750
	(0.429)	(0.459)
Institutional Index	1.807	0.650
	(1.340)	(0.519)
Physical Capital	0.810	0.400
	(0.425))	(0.692)
Ethnicity	0.530	1.450
	(0.598)	(0.155)
Population Growth	-1.960***	-1.752***
	(0.057)	(0.063)
Aid Per Capita	-0.825	-1.210
	(0.427)	(0.357)
R-Square	0.33	0.43
Adj. R-Square	0.25	0.32

Empirical Findings

Table 5: Dependent Variable is Index of Inclusive Growth

Variables	Specification_1	Sepecificaiton_2
S. S Enrollment Ratio	0.051*	-----
	(0.000)	
T Enrolment Ratio	----	0.140***
		(0.073)
Health Expenditure	0.220	0.142*
	(0.866)	(0.000)
R&D Expenditure	0.103*	0.136*
	(0.000)	(0.000)
Institutional Index	0.470*	0.436*
	(0.001)	(0.001)
Ethnicity	-0.060	-0.040
	(0.937)	(0.742)
Physical Capital	0.745*	0.637*
	(0.000)	(0.001)
R-Square	0.68	0.72
Adj. R-Square	0.62	0.67

Conclusion

- The study analyze the contribution of Human Resource Development (HRD) in the process of inclusive growth.
- This is an empirical exercise covering selected countries from Europe, South, East, Central Asia, Sub-Saharan Africa, and Latin America.
- The results of our analysis show that HRD is an important component for inclusive growth.
- Besides HRD, institutions also play a significant role in promoting inclusive growth in our sample.
- As in most of the models HRD indicators and institutions enters significantly with expected signs ------- it is safely concluded that HRD and Institutional soundness are the key factors ---- to sustain long run economic growth and henceforth get ride of inequality, poverty, and unemployment

THANK YOU

for your Patience