The Growth-Employment Nexus: Evidence and Lessons

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- Employment intensity of growth and poverty reduction: empirical evidence
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- Methodology of employment projection using employment elasticity
- Recent trends in the employment intensity of economic growth in developing countries
 - Employment elasticity
 - Factors influencing the employment intensity of growth
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Channels Linking Economic Growth with Poverty Reduction

• The social provisioning channel

Education and skill development

Health services

Water and sanitation

• The personal income channel

Employment and labour market outcomes

> The quantity and quality of employment of the poor

Economic Growth, Employment and Poverty

- Macro level:
 - Economic growth leading to structural change in the economy
 - More employment in sectors with higher productivity
 - Reduced Poverty
- Micro level:
 - Higher level of human capital
 - Higher labour productivity
 - Higher real wages/earnings
 - Reduced Poverty

Linkage between Employment and Poverty

- Sustained growth with rising productivity
- Employment intensity of growth
 - Sectoral composition of output
 - Choice of technology
 - Terms of trade
- The ability of the poor to integrate into the growth process
 - Education
 - Skills
 - Assets
 - Access to infrastructure (including finance and support services)

Virtuous Circle of Links between Growth, Employment and Poverty Reduction



Employment Intensity of Economic Growth and Poverty Reduction

- High rate of economic growth necessary but not sufficient for poverty reduction
- The relationship between economic growth and poverty is not invariant
- Employment intensity of economic growth is important for poverty reduction
- Important variables
 - > Structural transformation of employment
 - Degree of inequality in income
 - Productivity in agriculture and rural non-farm activities
 - Terms of trade of agriculture
 - Growth of labour-intensive manufacturing
 - Productivity, earnings and real wages including in the informal economy
 - Education and skill of the workforce

Percentage Decline in Poverty and Manufacturing Employment Elasticity



Employment Elasticity

Varying Rates of GDP Growth and Poverty Reduction: Some Examples

Rates of GDP growth		Rates of poverty reductio	'n
	High	Moderate	Low
High	China (1980s & 1990s) Indonesia (1970s and 1980s) Malaysia (1980s &1990s) Vietnam (1990s) Thailand (1990-96)	India (1990s) India (1990s – urban) Pakistan (1980s) Bangladesh (2000s)	India (1990s) India (1990s – rural) Indonesia (1990s) Thailand (1970-90) India (mid-1990s to 2000s)
Medium	Nepal (1990s and 2000s)	Bangladesh (1991-96)	Bangladesh (1996- 2000) India (1980s) Pakistan (1990s)* Philippines Sri Lanka (1990s) * Denotes increase in poverty.

The Notion of Jobless Growth: Conceptual Clarifications

- What do we mean by jobless growth?
 - ✓ Can output growth be jobless in a literal sense?
 - Does the term "jobless growth" need to be interpreted in a literal sense?
- Different possible combinations of output and employment growth (see next slide)
 - ✓ Low output low employment (stagantion)
 - ✓ Low output high employment (growthless jobs)
 - ✓ High output low employment (jobless growth)
 - High output high employment (employment intensive growth)

The Notion of Jobless Growth: Combination of Output and Employment Growth

Employment Growth	I High growth of employment and low growth of output (growth-less jobs)	IV High growth of output and of employment (employment-intensive growth)
	II Low growth of output and employment	III High growth of output with low growth of employment (jobless growth)

Possibility of Trade-off between Employment and Productivity Growth

- Inverse relation between emp-elast and prody
- Hence the possibility of trade-off
- But both quantity of labour input and prody can contribute to output growth
- Consider the following accounting identity

Output growth = Labour force growth + productivity growth

- In a growing economy, both items on the right hand side can grow and contribute to output growth
- The combination of labour froce growth and productivity growth depend on a variety of factors

Employment Intensity of Economic Growth and Productivity

- Employment intensity of economic growth is a summary indicator of employment growth associated with output growth
- Employment intensity of growth can be measured by elasticity of employment with respect to output
- Employment elasticity refers to the degree of change in employment due to a percentage change in output
- Employment growth lower than output growth implies an increase in labour productivity
- Productivity increase is possible when employment elasticity is less than one

Employment Intensity of Growth and Employment Projections

Definition of employment elasticity

• Elasticity of employment with respect to output (η) = r_e / r_o

where

- r_e = percentage change in employment
- r_o = percentage change in output

 $r_e = \eta r_o$

Employment Intensity of Growth and Employment Projections:

• Use of Aggregate Projection Model

The targeted level of employment (E_t) over a plan period may be projected as follows

$$E_{t} = E (1 + r_{e})^{t}$$

$$E_{t} = E (1 + \eta r_{o})^{t}$$

Example:

$$\eta = 0.4$$
; r_o (for 2015-20) = 7% per annum

and $E_{2015} = 40$ million

Projected employment for 2020 is:

$$E_{2020} = 40 (1 + 0.4 \times 0.07)^5 = 45.9$$
 million

Employment Intensity of Growth and Employment Projections

Disaggregated Projection Model: Methodology using sectoral growth and employment elasticities

$$E_{it} = E_{io} (1 + r_{ei})^{t}$$

Where E_{it} = target year employment in sector i E_{io} = base year employment in sector i r _{ei} = growth of employment in sector i

Employment Intensity of Growth and Employment Projections (contd.)

- Disaggregated Projection Model (contd.)
- $r_{ei} = g \mu_i \eta_i$

Where

r_{ei} = annual rate of increase in employment in sector i

g = annual rate of growth of GDP

 μ_i = sectoral growth elasticity, i.e., elasticity of sector i's output (value added) with respect to GDP

 η_i = sectoral employment elasticity

Employment Intensity of Growth and Employment Projections (contd.) Disaggregated Projection Model: An Illustration

Sector	Employ- ment elasticity	Output growth (%) per annum	E _{i0} (million, 2015)	E _{it} (million, 2020)
Agriculture	0.37	4	24	25.8
Manufactur ing	0.80	10	6	8.8
Services	0.90	7	9	12.2
Others	0.70	5	1	1.2
Total			40	48

Employment and Output Growth: Empirical Analysis

- Focus on Manufacturing
- Why manufacturing?
 - Employment may be expected to reflect real demand for labour more closely
- Data source(s): UNIDO industry data, and other data sources
- Periods: 1980s and 1990s
- Cross-country evidence on the relationship between employment and output growth
- Has there been a shift in the relationship between the two periods?

Relationship between employment and output growth (1980-89)



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Relationship between Employment and Output Growth (1990-2002)



<u>Notes</u>: Arg: Argentina; Bgd: Bangladesh; Bolv: Bolivia; Botw: Botswana; Ghn: Ghana; Ind: India; Idn: Indonesia; Ken: Kenya; Kor: Korea; Mlwi: Malawi; Mlsy: Malaysia; Mtius: Mauritius; Mex: Mexico; Nig: Nigeria; Pkst: Pakistan; Phil: Philippines; Sgal: Senegal; Safr: South Africa; Srlk: Sri Lanka; Thld: Thailand. <u>Source</u>: Author's calculations based on Unido, Indstat 3, 2005.

Output elasticity of employment (OEE) in selected Asian countries

Country	OEE (economy-wide)		OEE (man	ufacturing)
	1980s	1990s	1980s	1990s
Bangladesh ^a	0.55 ^b	0.50 ^b	0.76 ^c	0.72 ^c
Cambodia	n.a.	0.48	n.a.	0.56
China	0.33 ^b	0.13 ^b	0.50	0.25 ^d
India	0.40	0.15	0.37	0.29
Indonesia	0.44 ^b	0.38 ^b	0.79 ^e	0.61 ^f
Malaysia	0.55	0.48	0.68 ^g	0.68 ^g
Sri Lanka	0.51	0.46	0.64	0.47
Thailand	0.56	0.10	0.55	0.53



Output Elasticity of Employment in Manufacturing in Selected Countries of Asia



Elasticity of Employment in Different Regions, 1984-2008

Regions	Output Gro	owth	Employment Growth		Elasticity of	
						nt
	1984-	1999-	1984-1998	1999-	1984-1998	1999-
	1998	2008		2008		2008
All	3.0	4.2	1.3	1.6	0.43	0.38
countries						
Develo-	2.9	2.7	1.1	1.6	0.38	0.59
ped						
countries						
Develop-	4.3	4.4	2.3	2.1	0.53	0.48
ing						
countries						
Asia	5.5	5.7	2.1	1.8	0.38	0.32
LAC	3.2	3.5	2.6	2.4	0.81	0.69
MENA	NA	4.5	NA	2.2	NA	0.49
SSA	NA	4.1	NA	1.2	NA	0.29

Elasticity of Employment with respect to Output in South Asian Countries

Country and periods	GDP	Agricul-	Manufac-	Construc-	Services
		ture	turing	tion	
Bangladesh (Rahman,					
2014, Islam, 2015)					
1995-96 to 1999-2000	0.54	0.73	0.26	0.27	0.21
2005-06 to 2010	0.55	0.71	0.87	2.42	0.27
2010 to 2013	0.39	0.20	1.28	-0.77	0.21
India (IHD, 2014)					
1983-84 to 1993-94	0.42	0.49	0.41	1.16	0.39 to 0.67 ¹
1993-94 to 2004-05	0.29	0.26	0.47	0.94	0.06 to 0.99 ¹
2004-05 to 2011-12	0.04	-0.42	0.13	1.15	0.12 to 0.59 ¹

Elasticity of Employment with respect to Output in South Asian Countries (contd.)

Nepal (Khanal, 2014)					
1991-2001	0.64	0.32	2.15	3.76	1.55 to 2.60 ¹
2001-2011	0.18	0.25	-4.85	0.47	-1.43 to 0.74 ¹
Pakistan (Amjad and					
Yusuf, 2014) ²					
1981-90	0.30	0.45	0.26 ³	n.a.	0.42
1991-2000	0.55	0.36	0.24 ³	n.a.	0.82
2001-2010	0.79	1.19	0.82 ³	n.a.	0.80
Pakistan (Arif and					
Farooq, 2011) ²					
1992-98	0.81	n.a	n.a.	n.a.	n.a.
1998-2001	0.50	n.a.	n.a.	n.a.	n.a.
2001-2005	0.43	n.a.	n.a.	n.a.	n.a.

Elasticity of Employment with respect to Output in South Asian Countries (contd.)

Sri Lanka (Chandrasiri, 2014)					
1981-94	0.44	0.38	1.28	n.a.	0.25
1994-2005	0.52	0.18	1.31	n.a.	0.57
2005-2012	0.085	0.67	0.06	n.a.	0.03

Notes: ¹: In these cases, data are available for sub-sectors of the service sector, e.g., trade, transport, finance and real estate and community, social and personal services. The figures mentioned here are the lowest and the highest of those figures.

²: The figures for Pakistan have been estimated by the present author from data on output and employment growth that are available in the sources cited.

³: These figures are for industry as a whole not for manufacturing.

n.a. denotes not available

Growth and Employment:The South Asian Experience

• India:

➤Growth of overall employment:

➤ 1.8% p.a. during 1993/94 to 2004/05, and 0.4% during 2004/05 to 2011/12

➤Growth of employment in manufacturing:

>3.2% p.a. during 1993/94 to 2004/05, and 1.14% p.a. during 2004/05 to 2011/12

Output growth during the latter period was 8.9% p.a.

Growth and Employment: The South Asian Experience (contd.)

Pakistan

- Decline in overall employment elasticity during 2001-2005 compared to the 1990s (0.43 compared to 0.81)
- But another study (Amjad and Yusuf, 2014) shows that employment elasticity has increased during 2001-2010 compared to 1991-2000
- Other indicators mixed
 - Share of vulnerable employment declined from 63% in 1999-2000 to 61% in 2006-07
 - But the share of informal sector increased from 65% to72%
 - Share of vulnerable employment for females increased from 67% to 75%

Growth and Employment: The South Asian Experience (contd.)

• Bangladesh

- Overall employment elasticity declined from 0.59 during 1999/00 to 2005/06 to 0.55 during 2005/06 to 2009/10 and to 0.39 during 2010-13
- Employment elasticity in manufacturing increased from 0.78 to 0.87 and to 1.28
- Employment elasticity in construction first increased and then fell sharply
- Nepal
 - Employment growth (2.2% p.a.) fell short of labour force growth (2.6% p.a.) during 1998/99 to 2008
 - Output growth in manufacturing was negative during 2006-10
 - Elasticity of employment in
 - ✓ large scale manufacturing was negative during 1991-2006
 - ✓ Small scale manufacturing was positive but low (0.26 during 1999-2008)
 - The share of labour in total cost of construction declined indicating a fall in the employment intensity of growth

An overview of some Asian experience on high growth with high rate of poverty reduction

Country and period	Pattern of growth	Characteristics of the policy regime	Observations
Indonesia (1970s, 1980s and 1990s till 1996)	Growth of agriculture and rural non-farm activities in 1970s followed by labour-intensive industrialization in the 1980s and 1990s.	Subsidies on agricultural inputs and incentive pricing of outputs; investment in infrastructure; trade liberalization and exchange rate reforms; reduction in ERP.	The trends of high growth and poverty reduction interrupted by the Asian economic crisis. Vulnerability around the poverty line remain a concern.
Malaysia (since 1970s)	Growth in agriculture accompanied by labour-intensive industrialization since 1980s.	Large-scale agricultural development projects; range of incentives for export- oriented industries including tax holidays, subsidies for training and R&D, licensed warehouses, etc.	Some incentives were linked to employment and location; decline in employment intensity in a number of industries during the 1990s.
Thailand (1980s and 1990s till 1996)	Growth of agriculture and rural non-farm activities followed by labour-intensive industrialization.	Expansionary land policies followed by ending of discrimination against agriculture investment in infrastructure; trade liberalization, stable exchange rate, low inflation and business-friendly policies.	Regional variation – the North- East lagging behind – remains an issue. Rising income inequality is an emerging concern.
Viet Nam (1990s)	Growth of agriculture and rural non-farm activities; growth of the private sector.	Institutional reforms in agriculture; liberalization of agricultural prices; exchange rate reform; reform of State-owned enterprises; encouragement of the private sector.	Decline in the rate of poverty reduction; rising income inequality; low employment- intensity of manufacturing.

Policies and Strategies Pursued: Contrast between South Asia and East and South East Asia

• What was different in countries of ESEA?

- > Manufacturing industries served as the engine of growth
- Relative factor prices better reflected their relative scarcities
- Incentives were provided to labour intensive export oriented industries
- > Policies supported the growth of productivity in agriculture
- > And the growth on rural non-farm activities
- The result was high growth of employment in industries and rural non-farm activities and improvement in productivity in agriculture

• What is different in South Asia?

- Special employment creation programmes (e.g., MGNREGP in India)
- Adopted to address the structural problem of poverty and need for employment
- In countries of ESEA, they have been mostly used to address crisis situations.

Constraints on Employment Growth

- The notion of "binding constraints" used in growth diagnostic literature (Hausman, Rodrik and Velasco)
 Marginal welfare benefit of reducing distortion
- Possible constraints on employment growth
 - The neoliberal approach and the blame on labour market interventions
 - Choice of technology and capital deepening
 - Going beyond technology: start from the pattern of growth

Constraints on Employment Growth (contd.)

- There is no conclusive evidence on the adverse effects of LM interventions on employment
 - Bean (1994, JEL): Evidence do not show that generous unemployment benefits in Europe was the cause of persistent unemployment
 - Nickel (1997, JEP): Unemployment benefits do not have an adverse effect on unemployment rates
 - Forteza and Rama (2002, ADB report 2005) covering 119 countries: minimum wages and mandated benefits do not hinder economic growth

Constraints on Employment Growth (contd.)

- Kapsos (2005, ILO WP): Rigidities in the labour market do not have a negative effect on employment elasticity
 - The coefficient of the World Bank's employment rigidity index is not statistically significant and the sign is opposite (cross section, 100 countries)
 - Rigidity of employment index is the average of three indices:
 - ✓ difficulty of hiring
 - \checkmark difficulty of firing
 - \checkmark rigidity of hours

Employment Intensity of Growth and Labour Market Institutions

- Does labour market rigidity affect employment?
 - In Sri Lanka, has recent labour market reforms led to higher employment growth?
 - In Cambodia, labour laws applied in garment industry have helped export growth
 - In many business environment surveys, labour market rigidity is not cited as the main constraint
 - ➤On the whole, the answer is not clear

Pattern of Growth and Employment

- Sector composition of output: Manufacturing and others
 - Growth of manufacturing in relation to GDP growth has been much higher in countries of ESEA compared to those in South Asia
- Sector composition of output: within manufacturing
 - In Malaysia and Korea, share of labour intensive industries increased up to 1990
 - ➢ In Thailand, this happened till 2002
 - > India witnessed a decline in the share of labour-intensive industries

Making Economic Growth More Employment-Friendly

Does this imply inefficiency and backward technology?

Not necessarily ...

• Employment-friendly growth can be achieved by:

Promoting the growth of employment intensive sectors

[Some sectors and sub-secorts of an economy are more employment-intensive than others]

Through the choice of technology without compromising on efficiency/productivity

[Choice may be available, e.g., in construction]

Sectoral Variation in Employment Elasticity in Sri Lanka (1990s)

	-0					
Trade						
Transport						
Services						
Construction						
Manufacturin g						
Mining and quarrying						
Agriculture						
	0	0.2	0.4	0.6	0.8	1

Sectoral Variation in Employment Elasticity in India's Manufacturing 1990-98

Bottling of... Cigarettes Asbestos Powerloom... **Dairy products** Cement Glass and... Chemicals **Fertilzers** Knitwear Animal feed Handloom... Sugar Industrial... Garments Leather... Footwear Jewellery п 0.2 0

0.4

0.6

0.8

Sectoral Variation in Employment Elasticity in Indonesia's Manufacturing Sector, 1975-96

Oil refinement and natural gas

Iron and steel

=

Glass and glass products

Transport

Food processing

Furniture

Leather products

Garments

Beverages

Footwear

п						
D	0.2	0.4	0.6	0.8	1	1.2

Policy Lessons

- Placing productive employment and decent work at the centre of economic and social policy making
 - > Employment consideration in policies for macroeconomic stability
 - Analysis of the employment impact of budgetary allocations
 - Analysis of the employment implications of prevailing incentive structures in the economy
 - Adoption of policy environment that does not at least discriminate against sectors that are employment intensive and sectors where the poor are concentrated
 - > Positive support to employment intensive sectors

Policy Lessons (cont'd)

• Labour market

- Interaction between labour market, economic growth and employment
 - o What aspects of labour market policies might hinder economic growth and employment?
 - o What labour market policies are needed to facilitate economic reforms and growth?
- Factors influencing labour market outcomes (quantity and quality of employment, wages, etc.)
- ➢ Factors influencing mobility of labour
- Active labour market policies
 - o Job creation
 - o Training and re-training
 - o Job facilitation
- Combining needed flexibility in the labour market with security for the workers