# The Growth-Employment Nexus: Evidence and Lessons

## By

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# Contents

- **The context: The nexus between economic growth, employment and poverty reduction**

- **Employment intensity of growth and poverty reduction: empirical evidence**

- **The notions of jobless growth and employment intensity of growth**

- **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**

- **Making economic growth more employment-friendly**

- **Policy lessons**

# 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



6
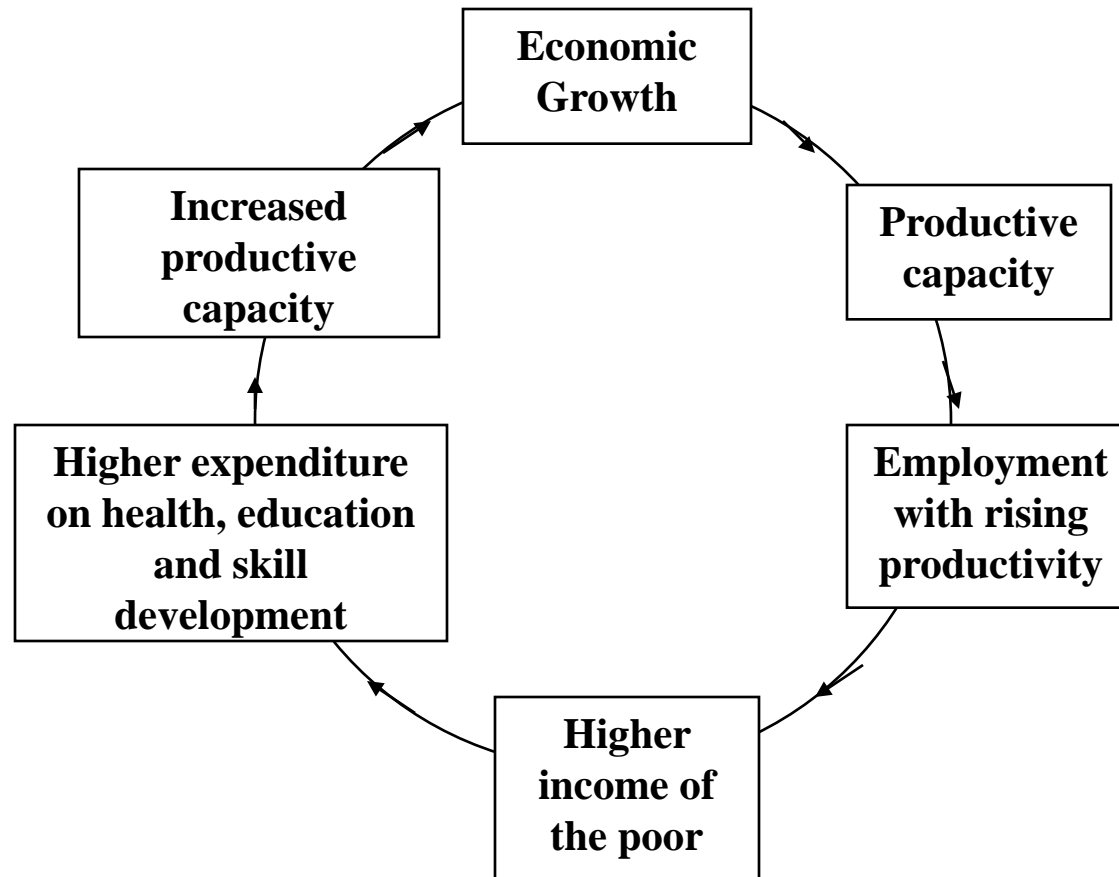
# Employment Intensity of Economic Growth and Poverty Reduction

- **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**

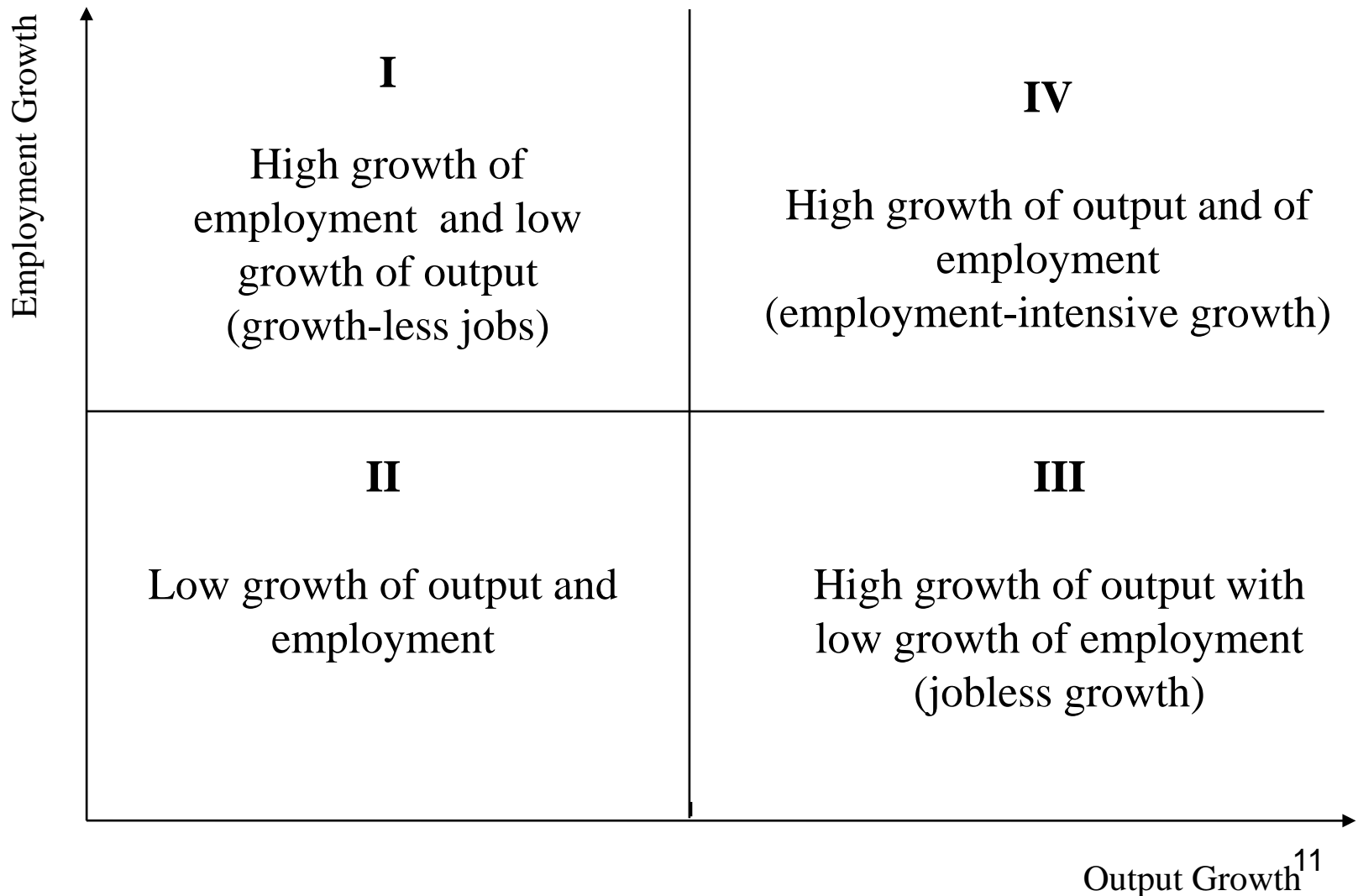# Percentage Decline in Poverty and Manufacturing Employment Elasticity
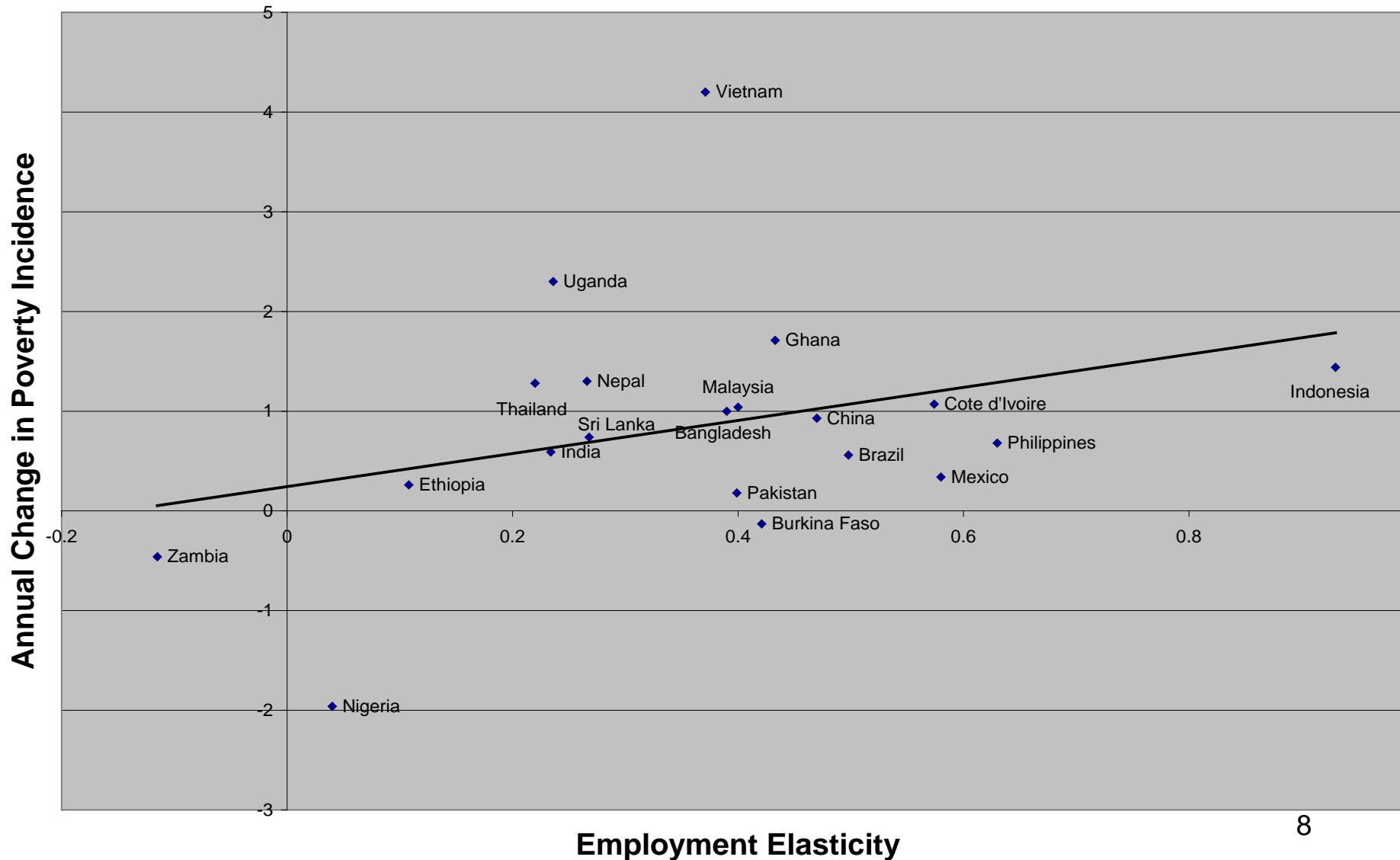
# Varying Rates of GDP Growth and Poverty Reduction: Some Examples

| Rates of GDP growth | Rates of poverty reduction | | |
| --- | --- | --- | --- |
| | **High** | **Moderate** | **Low** |
| **High** | China (1980s & 1990s)<br>Indonesia (1970s and 1980s)<br>Malaysia (1980s &1990s)<br>Vietnam (1990s)<br>Thailand (1990-96) | India (1990s)<br><br>India (1990s – urban)<br>Pakistan (1980s)<br>Bangladesh (2000s) | India (1990s)<br>India (1990s – rural)<br>Indonesia (1990s)<br>Thailand (1970-90)<br>India (mid-1990s to 2000s) |
| **Medium** | Nepal (1990s and 2000s) | Bangladesh (1991-96) | Bangladesh (1996-2000)<br>India (1980s)<br>Pakistan (1990s)*<br>Philippines<br>Sri Lanka (1990s)<br><br>* 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)

Output 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 ($\eta$)
  $= r_e / r_o$

**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

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

  $\eta_i$ =  sectoral employment elasticity

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

| Sector | Employment elasticity | Output growth (%) per annum | $E_{i0}$ (million, 2015) | $E_{it}$ (million, 2020) |
|---|---|---|---|---|
| Agriculture | 0.37 | 4 | 24 | 25.8 |
| Manufacturing | 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)



**Annual Growth of Employment and Value Added: 1980-1989**
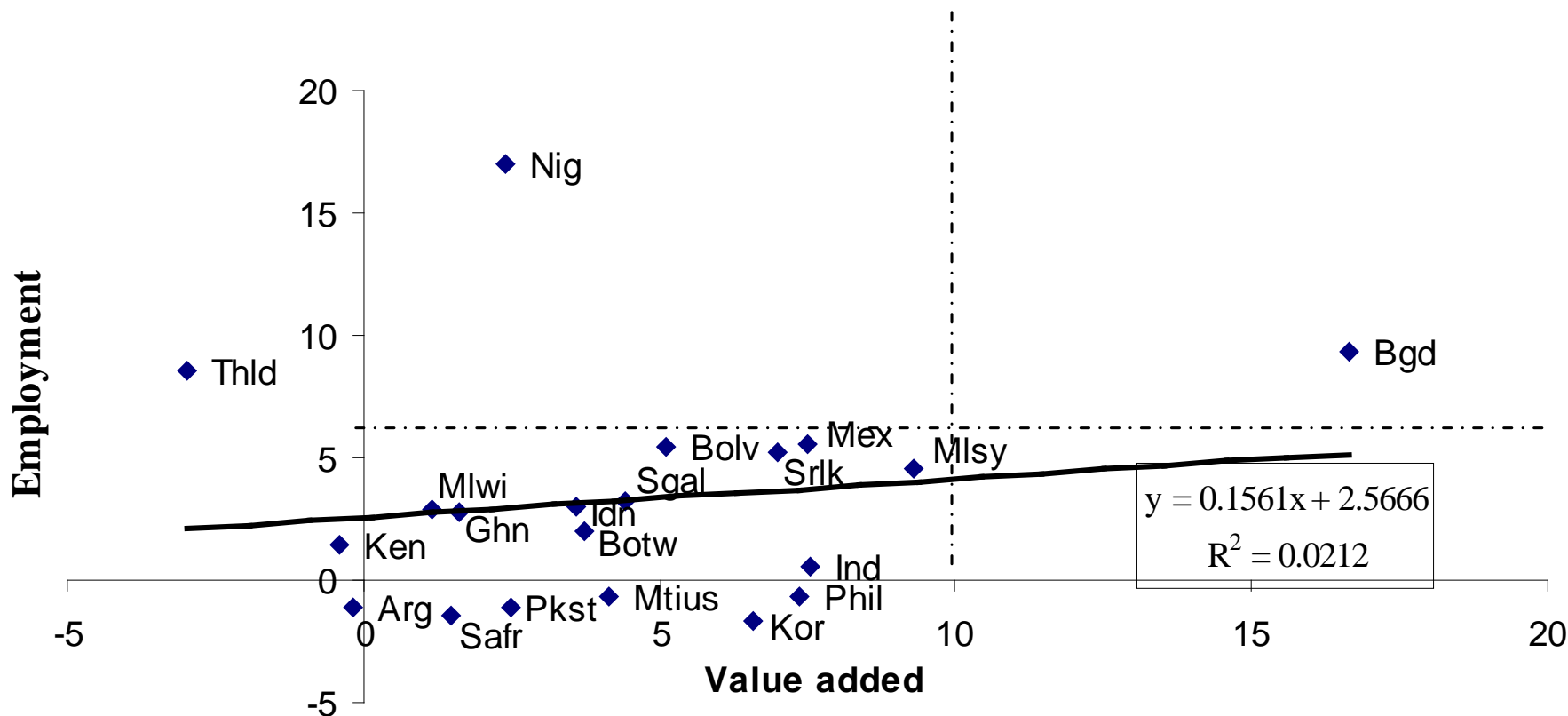
$y = 0.4458x - 0.0493$

$R^2 = 0.2858$
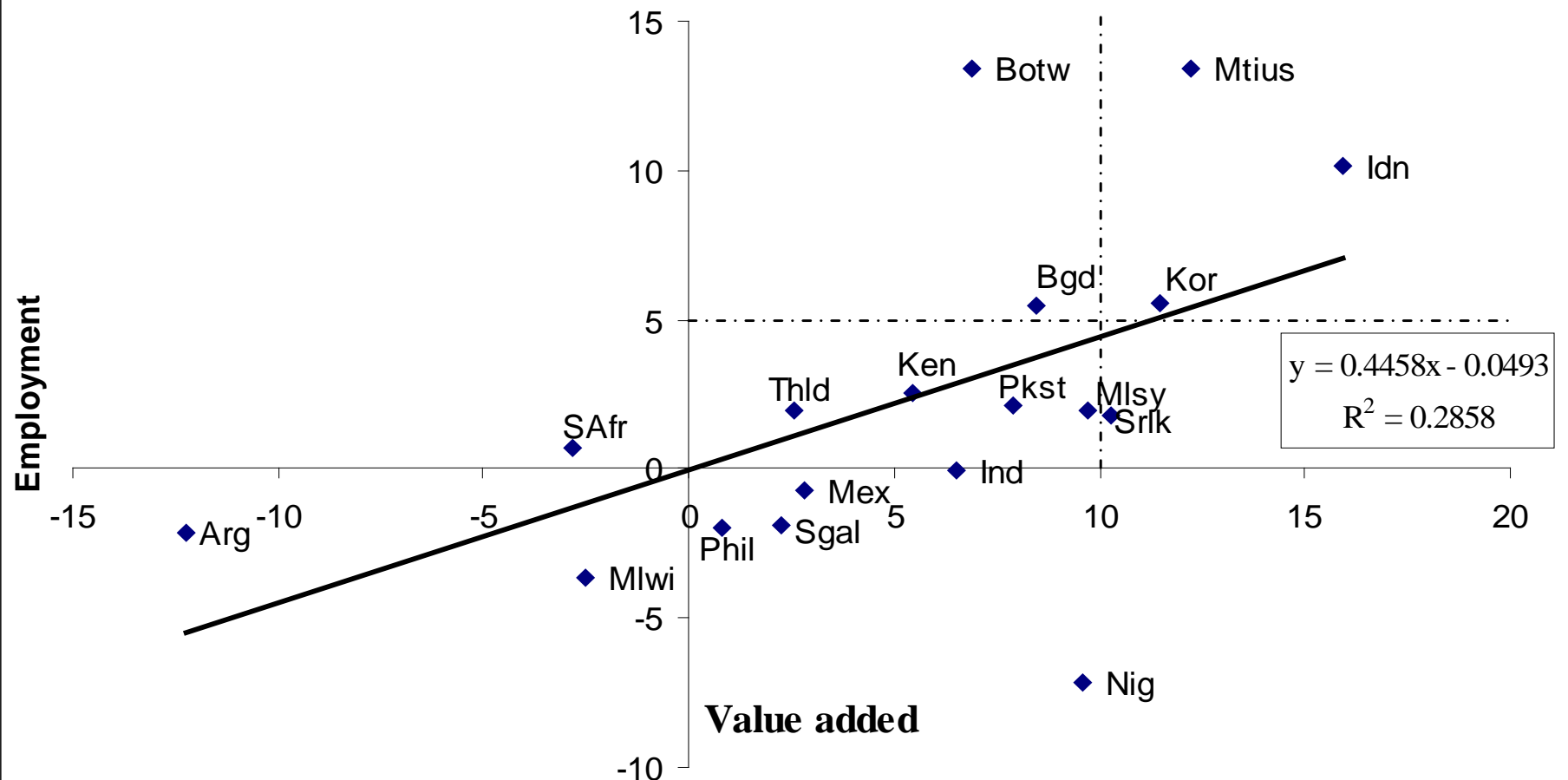
Notes: Arg: Argentina; Bgd: Bangladesh; Botw: Botswana; Ind: India; Idn: Indonesia; Ken: Kenya; Kor: Korea; Mlwi: Malawi; Mlsy: Malaysia; Mtius: Mauritius; Mex: Mexico; Nig: Nigeria; Pkst: Pakistan; Phil: Philippines; Sgal: Senegal; Safr: South Africa; Srlk: Sri Lanka; Thld: Thailand.

Source: Author's calculations based on Unido, Indstat 3, 2005.

# Relationship between Employment and Output Growth (1990-2002)



**Annual Growth of Employment and Value Added: 1990-2002**

$y = 0.1561x + 2.5666$

$R^2 = 0.0212$

Notes: 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.

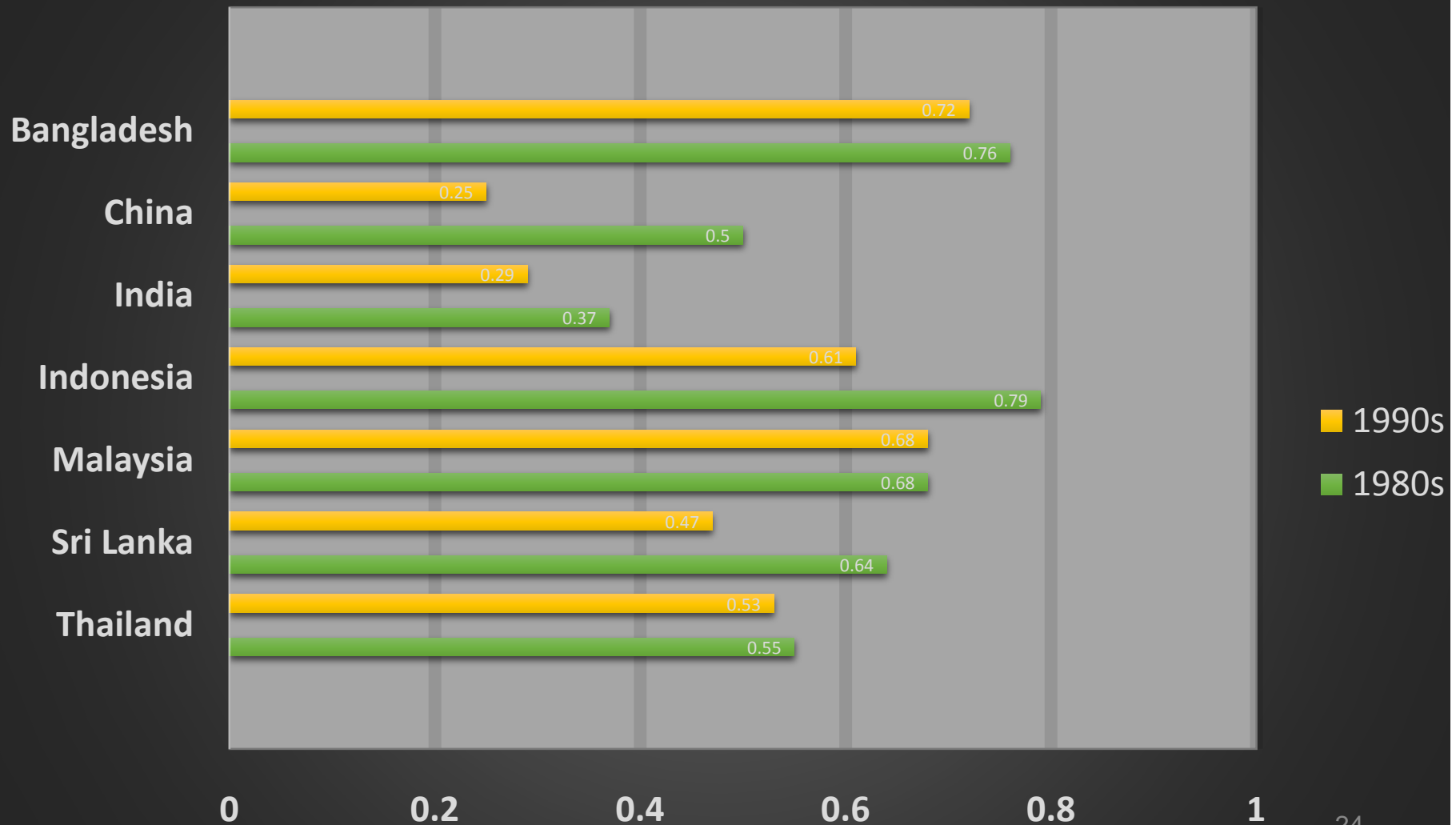Source: Author's calculations based on Unido, Indstat 3, 2005.

# Output elasticity of employment (OEE) in selected Asian countries

| Country | OEE (economy-wide) | | OEE (manufacturing) | |
|---|---|---|---|---|
| | 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 |

**Economy-wide output elasticity of employment in selected Asian countries**
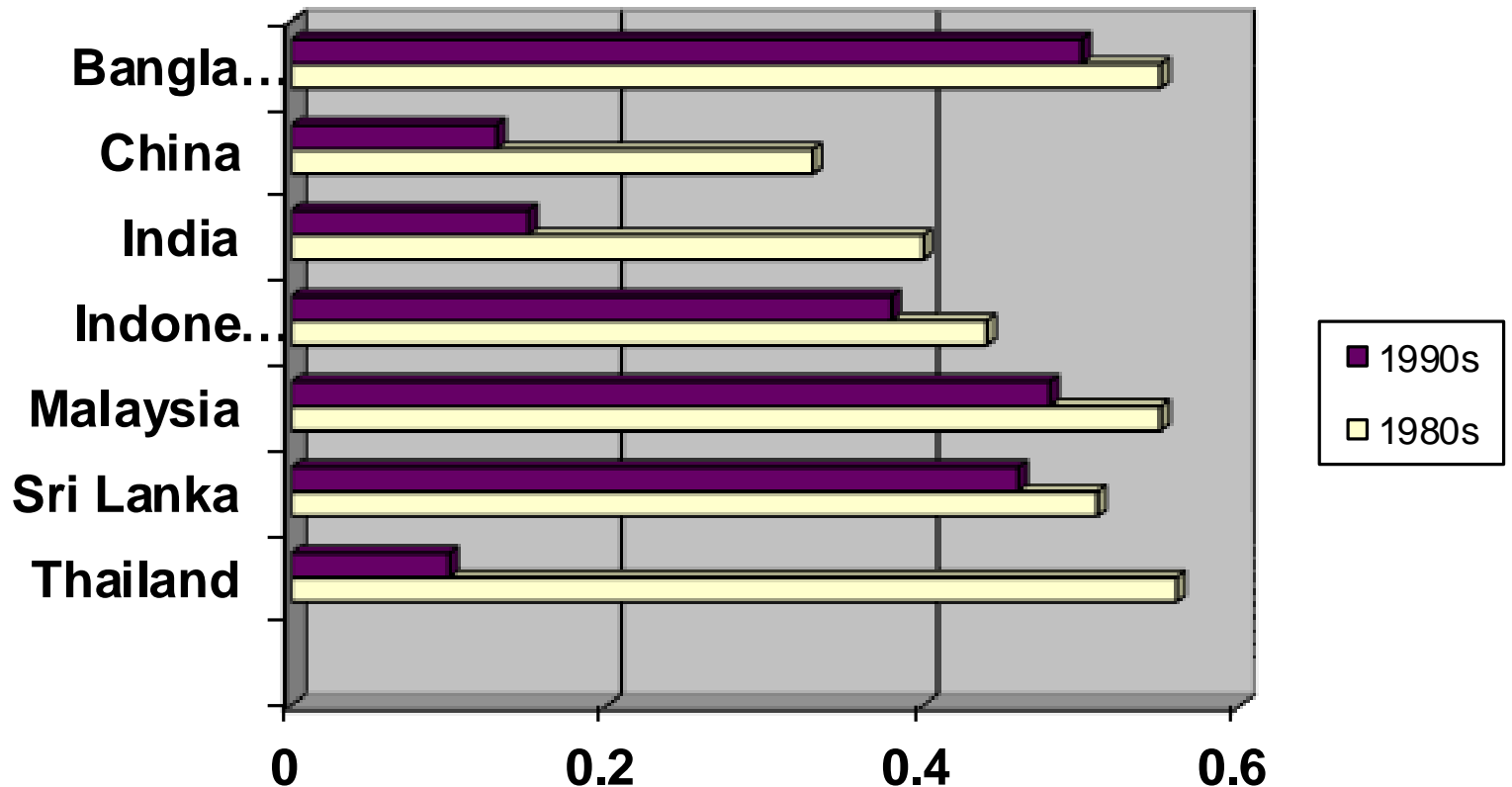
# Output Elasticity of Employment in Manufacturing in Selected Countries of Asia

| Country | 1990s | 1980s |
|---|---|---|
| Bangladesh | 0.72 | 0.76 |
| China | 0.25 | 0.5 |
| India | 0.29 | 0.37 |
| Indonesia | 0.61 | 0.79 |
| Malaysia | 0.68 | 0.68 |
| Sri Lanka | 0.47 | 0.64 |
| Thailand | 0.53 | 0.55 |

24

# Elasticity of Employment in Different Regions, 1984-2008

| Regions | Output Growth | | Employment Growth | | Elasticity of Employment | |
|---|---|---|---|---|---|---|
| | 1984-1998 | 1999-2008 | 1984-1998 | 1999-2008 | 1984-1998 | 1999-2008 |
| All countries | 3.0 | 4.2 | 1.3 | 1.6 | 0.43 | 0.38 |
| Developed countries | 2.9 | 2.7 | 1.1 | 1.6 | 0.38 | 0.59 |
| Developing countries | 4.3 | 4.4 | 2.3 | 2.1 | 0.53 | 0.48 |
| 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 |

# Growth and Employment:The South Asian Experience

- **India:**
  - Growth of overall employment:
    - 1.9% p.a. during 1983-2004/05, and 0.1% during 2004/05 to 2009/10
  - Growth of employment in manufacturing:
    - 2.5% p.a. during 1983-2004/05, and -1.12% p.a. during 2009/10
    - Output growth during the latter period was 9.3% 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)
  - ➤ 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
  - Employment elasticity in manufacturing increased from 0.78 to 0.87
  - Employment elasticity in construction also increased
- **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
    - ✓ difficulty of firing
    - ✓ 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**
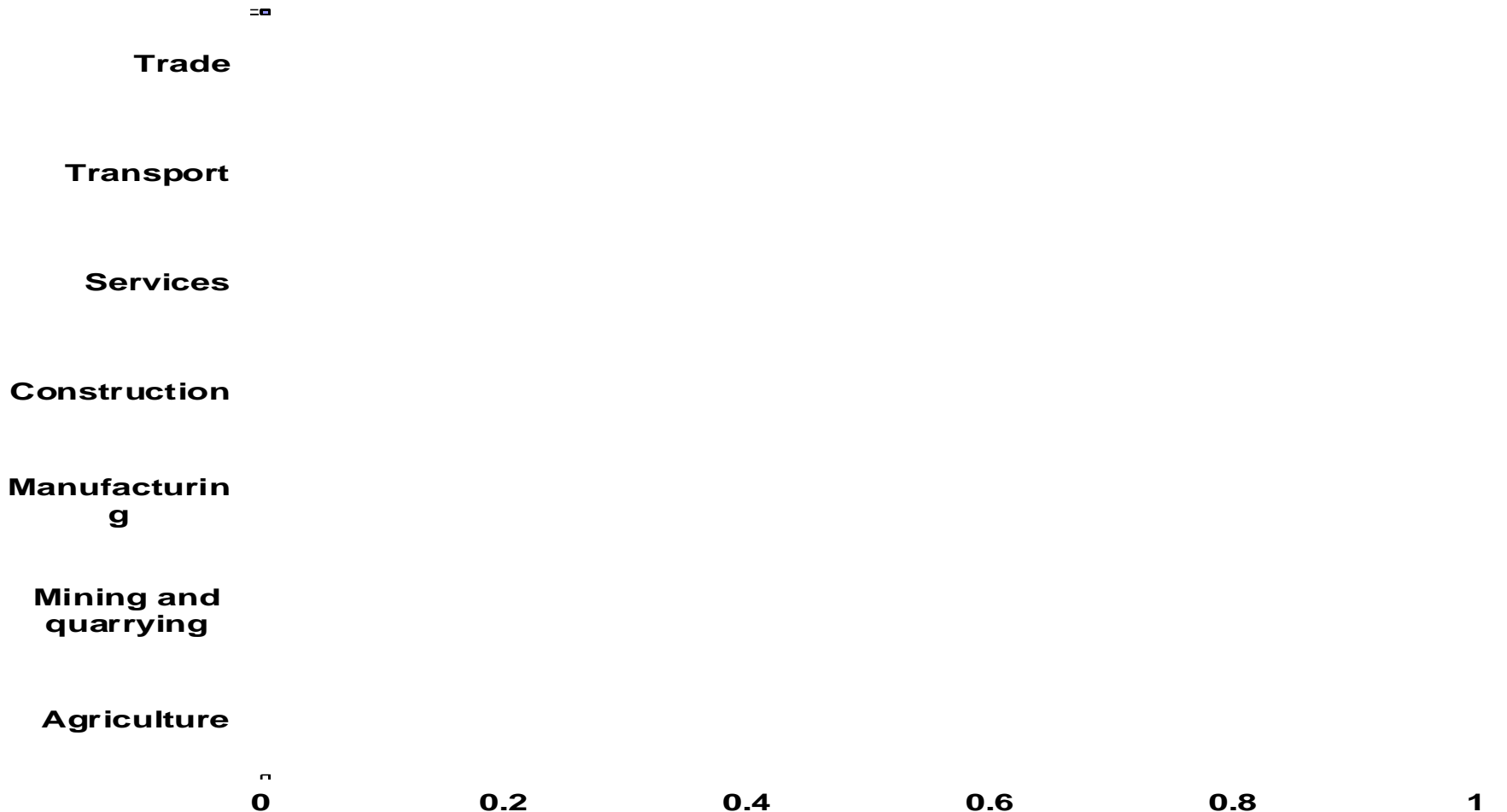  - ➤ **On the whole, the answer is not clear**

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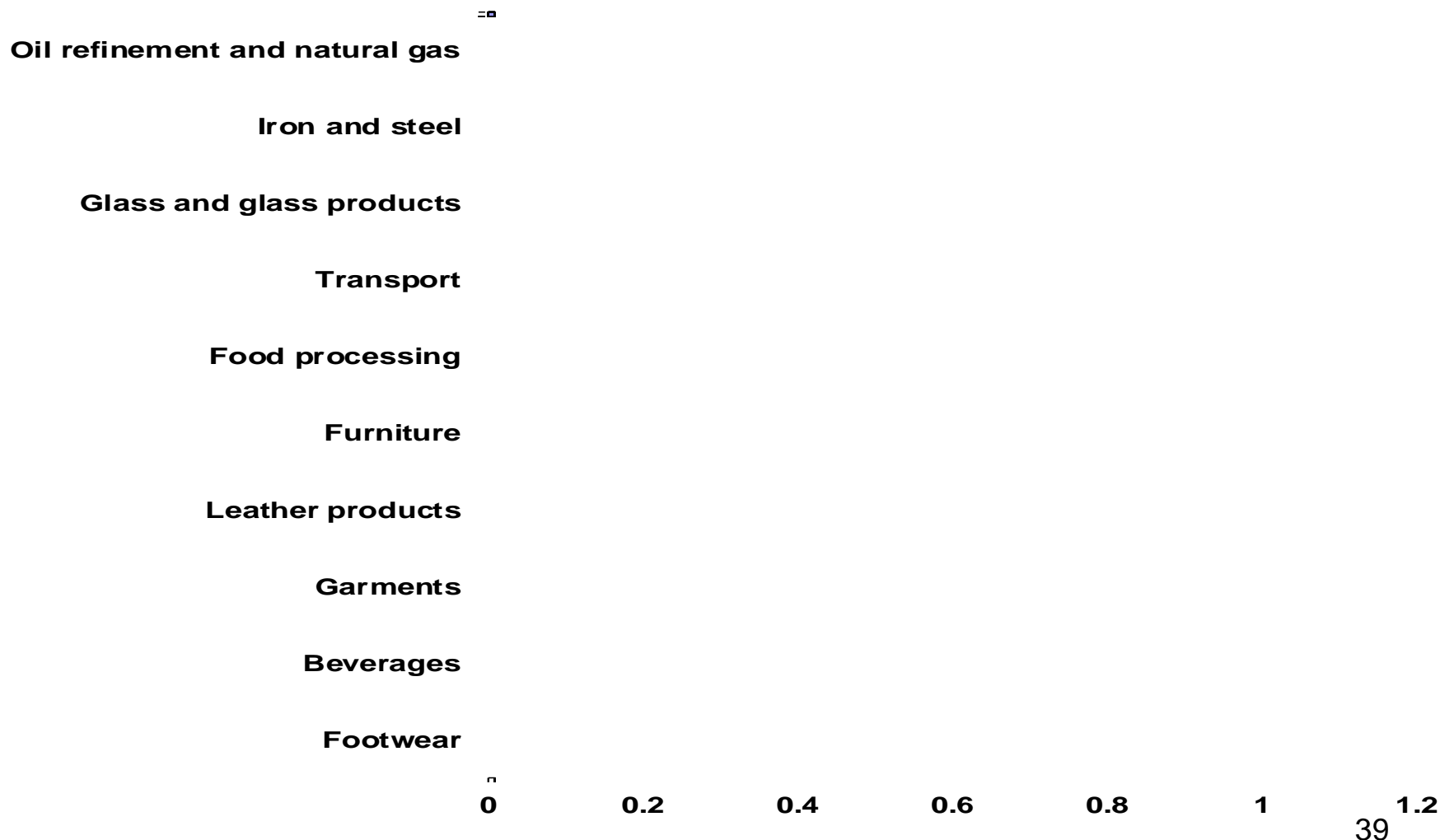
# Sectoral Variation in Employment Elasticity in Sri Lanka (1990s)

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

0    0.2    0.4    0.6    0.8    1

# 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

| | | | | | | |
|---|---|---|---|---|---|---|
| 0 | 0.2 | 0.4 | 0.6 | 0.8 | 1 | 1.2 |

39

# 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