International Trade and Manufacturing Employment in the South

Four Country Case-studies

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BACKGROUND AND MOTIVATION

The period since 1980 has been described as a third wave of globalisation, which is distinguished from the earlier post-World War II period by the increased integration of developing countries into the global economy.

A novel feature has been the rapid expansion of two-way North-South trade in manufactures.

These trends have given rise to concern and debate in both developed and developing countries.

In the former these have centred on the effects of increased imports from the South on wage inequality and unemployment and have generated an extensive academic literature.

In the developing world concerns have been expressed over the loss of “good” manufacturing jobs as a result of import competition and the growth of “bad” jobs in sweatshops producing for exports and over possible de-industrialization.

However, in contrast to the North, surprisingly little systematic empirical work has been carried out on the effects of these trends on manufacturing employment in developing countries.
Objectives

- We undertake a *comparative* study of the trade-employment relationship by examining the experiences of the manufacturing sectors of four developing countries: Bangladesh, Kenya, South Africa and Vietnam.

- We use three different methods of assessing the impact of trade on employment – factor content, growth decomposition and labour demand – and apply each of them to all four of the countries, providing a firmer basis for comparative lessons to be drawn.

- The key question which we set out to answer is whether trade integration has created or destroyed jobs in the manufacturing sector of each of the four countries.
Trade and Manufacturing Employment – Theoretical Linkages

The overall level of manufacturing employment in an economy is by definition equal to the level of manufacturing output times the weighted average employment coefficient for the manufacturing sector.

\[ L = Q \sum w_i (L/Q)_i \]

where

- \( L \) is total manufacturing employment
- \( Q \) is total manufacturing output
- \( w_i = \frac{Q_i}{Q} \)
- \( i \) refers to branches of manufacturing.

Trade can affect manufacturing employment in three ways:

**A Scale Effect:** Trade may have an impact on the total output of the manufacturing sector (\( Q \)). Increased exports have a positive effect on the level of output, tending to increase employment, while greater import penetration depresses output and displaces labour.

**A Composition Effect:** Trade influences the shares of different industries in overall manufacturing output (\( w_i \)), increasing the output of exportables and reducing output of import competing industries.

**A Process Effect:** Trade can have an impact on employment by changing labour coefficients within industries (\( L/Q)_i \).
The Scale Effect: Theoretical Foundations

- The size of the manufacturing sector could be determined by two sets of independent factors.
- One determinant is the country’s comparative advantage, reflecting factor endowments.
- Countries with a high land-labour ratio such as those in Africa will export primary commodities, and countries with a low land-labour ratio such as those in Asia will export labour-intensive manufacturing commodities (Krueger-Leamer variant of the H-O model).
- Another determinant could be differences in technology across sectors (the Ricardian view).
- In this case, the size of the manufacturing sector in a country is determined by its overall competitiveness which in turn is partly a result of technological capabilities in manufacturing.
The Composition Effect: Theoretical Foundations

- The composition effect could also be due to comparative advantage.
- A labour-surplus country may see a shift in the composition of manufacturing output to more labour-intensive commodities.
- This will shift the national demand for labour to the right, and under the assumption of a fairly elastic labour supply, increase total manufacturing employment.
- However, it is possible that increased trade may increase the demand for the scarce factor (capital) in developing countries.
- This is a reflection of economies of scale and product differentiation rather than factor endowments.
The Process Effect: Theoretical Foundations

- Could be due to Stolper-Samuelson effects (shifts in relative prices).
- Could also be due to trade-induced increases in productivity.
- Firms may shed labour in response to external competitive pressures, either due to greater export orientation or increased import penetration.
- A X-inefficiency argument
Openness (Exports plus Imports as a percentage of GDP)
International Trade and Manufacturing Employment: Three Methodological Approaches

- Factor Content
- Growth Accounting
- A Labour Demand Approach
Bangladesh - Factor-intensity of Exports

Human capital intensive
Technology intensive
Unskilled labour intensive
Mineral resource intensive
Agricultural resource intensive

Vietnam - Factor-intensity of Exports

- Human capital intensive
- Technology intensive
- Unskilled labour intensive
- Mineral resource intensive
- Agricultural resource intensive
Employment Coefficients of Exports and Import-Competing Domestic Production, Bangladesh and Vietnam

Per US$ mn of output

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<th>Female</th>
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<td>VIET exports</td>
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<td>VIET import Competing</td>
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Employment Coefficients of Exports and Import Competing Domestic Production, Kenya and South Africa

per US$ mn of output
Decomposition of Employment Growth

- Employment growth between two years can be decomposed into four components.
- Change in employment between year $t$ and $t+1$ can be attributed to a) changes in domestic demand; b) changes in exports; c) changes in imports; and d) changes in labour productivity.
- We use a Chenery-type growth accounting methodology.
Growth Decomposition-Bangladesh

- Net Employment Growth from Trade
- Total Employment Effect
- Productivity Growth
- Import penetration
- Export Growth
- Domestic Demand

<table>
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<th>Import penetration</th>
<th>Export Growth</th>
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In Thousands
Growth Decomposition - South Africa

- Net Employment Growth from Trade
- Total Employment Effect
- Productivity Growth
- Import penetration
- Export Growth
- Domestic Demand
Growth Decomposition - Vietnam

1995-1999

-600 -400 -200 0 200 400 600 800

In Thousands

- Net Employment Growth from Trade
- Total Employment Effect
- Productivity Growth
- Import penetration
- Export Growth
- Domestic Demand
Scale, Composition and Productivity Effects and Manufacturing Employment Growth in the 1990s

A Labour Demand Approach

This approach allows us to study the indirect impact of trade reforms on employment via changes in the efficiency of labour use.

Consider a standard derived demand for labour equation at the industry-level, augmented by a variable that captures the extent of integration of the industry with the world market.

\[ L_{it} = \alpha - \beta_1 W_{it} + \beta_2 Q_{it} + \varphi Z_{it} \quad (I) \]

where \( L_{it} \) is employment in industry \( i \) at time \( t \), \( W_{it} \) is real wage in industry \( i \) at time \( t \), and \( Q_{it} \) is real output in industry \( i \) at time \( t \), and \( Z_{it} \) measures the degree of openness of industry \( i \) in time \( t \). We capture the degree of openness by the import penetration ratio (IM) and the export-output ratio (EO).

\[ L_{it} = \alpha + \beta_1 W_{it-} + \beta_2 Q_{it} \varphi_1 \text{IM}_{it} + \varphi_2 \text{EO}_{it} \quad (II) \]

We expect that \( \beta_1 < 0, \beta_2 > 0, \varphi_1 < 0 \) and \( \varphi_2 < 0 \).
Methodology and Results

- Panel Data for Bangladesh, Kenya and South Africa; Cross-sectional for Vietnam.
- Fixed Industry Effects and Time Dummies.
- Import Competition has a significant negative effect on employment for Bangladesh, South Africa and Vietnam.
- Export orientation has a positive effect on employment for Bangladesh.
- No discernible effect for Kenya.
- Overall, the results support the hypothesis that the increase in labour productivity (leading to a fall in employment) has been trade-induced.
Conclusions

- International trade seems to be associated with the net creation of jobs in Bangladesh and Vietnam, with female workers being the key beneficiaries.
- In contrast, international trade has been associated with adverse employment outcomes in Kenya and South Africa.
- In the Kenyan case, there has been a net decline in employment due to falling exports and increasing import penetration in the 1990s.
- In the South African case, there has been a relatively small net increase in jobs for South Africa via a scale effect of increased net export expansion. However, this has been dominated by job losses due to a significant increase in labour productivity since the mid-1990s.
What explains the continental divide?

- Is it driven by factor endowments?
  - The increase in the share of labour-intensive goods in total manufacturing exports of Bangladesh and Vietnam, and the expansion of the manufacturing sector in these two countries suggest that it is.
  - But the weak performance of the agricultural sector in Kenya and South Africa, and the stagnation in the share of resource-based goods in total manufacturing exports seems to contradict a ‘comparative advantage’ story.
  - The ‘Continental Divide’ in employment outcomes may be more due to the growing competitiveness of the manufacturing sector in the Asian countries in contrast to Africa.
  - The fact that poor performance in manufacturing in the African countries is not offset by a booming primary sector suggests that problems of competitiveness in the region are not confined to industry.
- Possible causes: government policies, institutions and location factors.