

Trade Policy, Inequality and Performance in Indian Manufacturing

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DOES TRADE REFORMS LEAD TO BETTER EFFICIENCY OUTCOMES?

- The relationship between trade policy and economic performance is one of the oldest controversies in economic development.
- Do trade reforms lead to clear benefits in terms of higher economic growth and better economic performance.
- An influential view has concluded that countries with a more open trade orientation have tended to grow faster through time.
- This view has been contested by others who have argued that there is little systematic evidence linking inward orientation and growth, and that the evidence linking outward orientation and growth has overstated the relationship between the two.

DOES TRADE REFORMS LEAD TO BETTER EQUITY OUTCOMES?

- Considerable debate on whether international trade can be a powerful positive force in the reduction of poverty and inequality in developing countries by creating jobs, especially for unskilled workers, and by reducing the inequality between workers of different skills and educational levels, and between different regions in the same country.
- There have been concerns that trade reforms can, on the contrary, lead to job destruction and higher wage inequality in developing countries and that greater open-ness can exacerbate the inequality between regions in a country.

THE INDIAN EXPERIENCE

- In the middle of the 1970s, the trade regime pertaining to the Indian manufacturing sector was one of the most restrictive in the world.
- It is widely recognised that the policy regime was a key contributing factor to the industrial stagnation observed in the Indian economy, especially from 1966 to 1980, though the policies towards self-reliance led to a diversified industrial base.
- A process of gradual reform was initiated in the late 1970s, quickened in pace in the 1980s, culminating in 1991 in a radical set of reforms that dismantled much of the import licensing system.

STRUCTURE OF BOOK

- 1. Trade Policy, Inequality and Performance – The Key Analytical Issues
- 2. Trade Policy in India
- 3. Growth and Structural Change in Indian Manufacturing, 1975-1999
- 4. Trade Policy and Economic Growth
- 5. Trade Policy, Productivity and Prices
- 6. International Trade and Employment
- 7. Trade Policy and Wage Inequality
- 8. Trade Policy and Regional Inequality
- 9. Conclusion

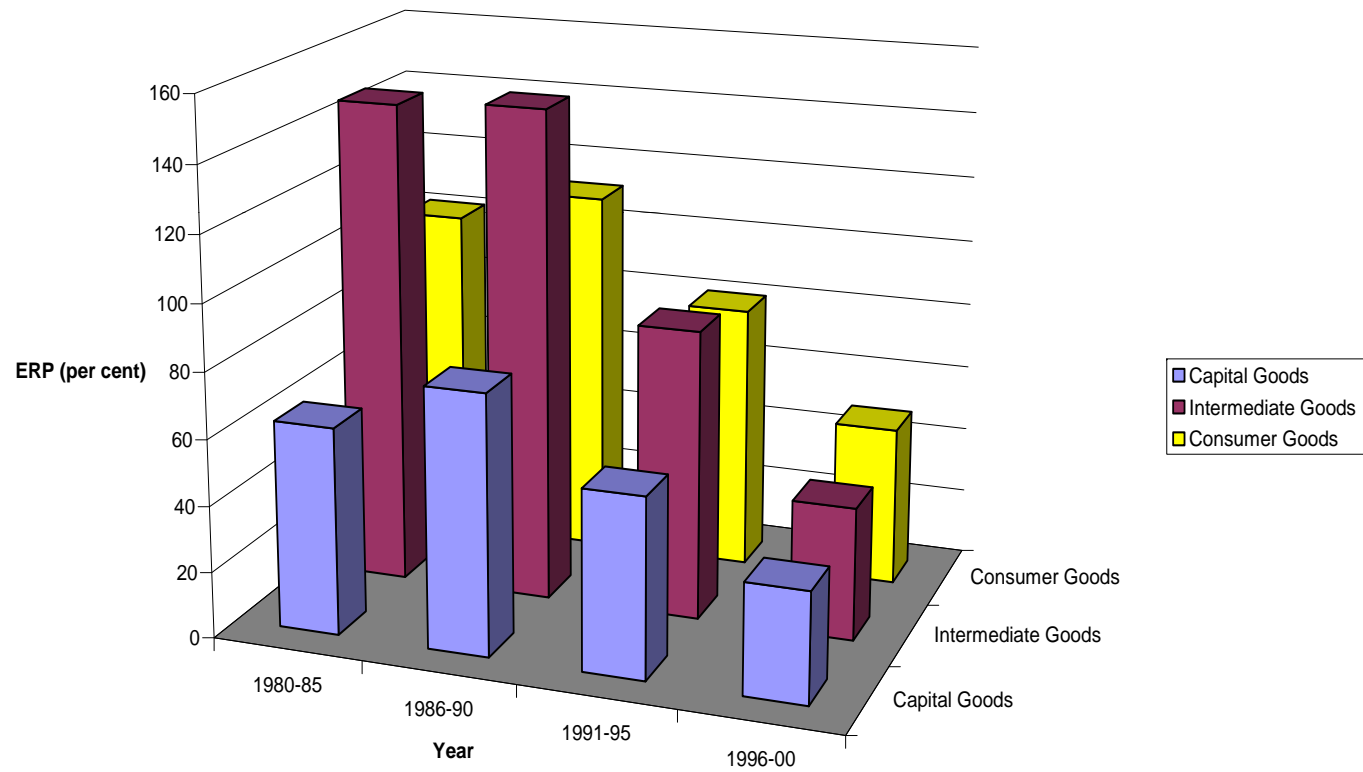
Some features of the analysis

- In the book, I study the effect of trade reforms on the Indian **organised manufacturing sector** from the mid 1970s to the late 1990s using **industries** as units of analysis and using *quantitative* economic methods.
- For the industry-level analysis, we use panel data methods for a large number of industries for 25 years – typically we work with over 3500 observations.
- **Why manufacturing?**
- **Why the organised/formal segment of the manufacturing sector?**
- **The Choice of the Time Period**
- **Why Industries as Units of Analysis?**

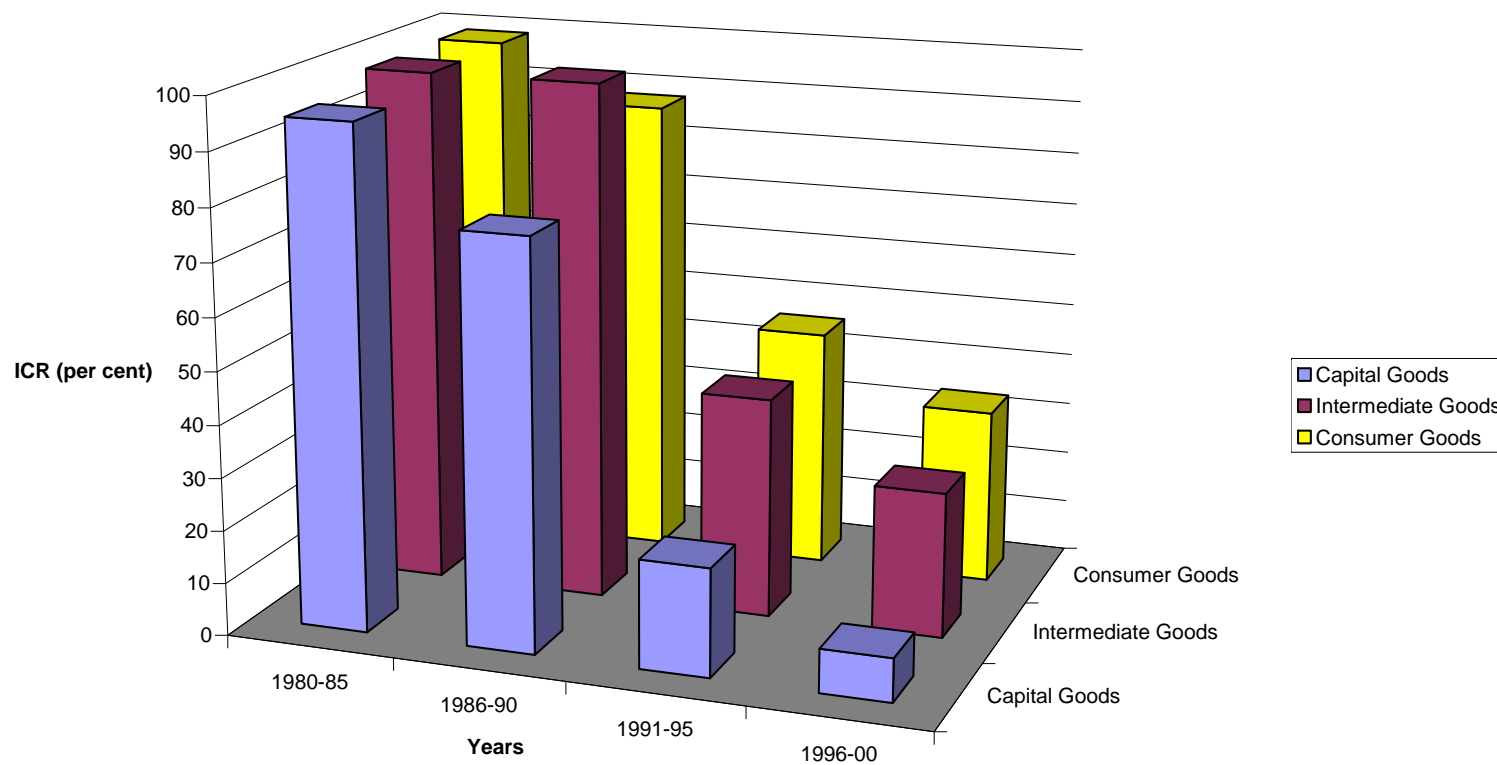
The Trade Policy Regime

- The import and exchange rate regime followed since independence was aimed at the comprehensive, direct control over foreign exchange utilisation, with an overwhelming reliance on quotas rather than tariffs.
- Beginning with the export-import policy of 1977-78, there was a slow but sustained relaxation of import controls. Several capital goods that were not allowed to be imported without an import license were steadily shifted to the Open General License category.
- The shift from quantitative import controls to a protective system based on tariffs considerably quickened by the Rajiv Gandhi government in 1985.
- In 1991, as a part of the comprehensive economic reform programme initiated that year, there was a significant liberalization of the trade regime with respect to capital and intermediate goods. Import licensing was virtually abolished with respect to the imports of most machinery and equipment and manufactured intermediate good. There was also a significant cut in tariff rates.

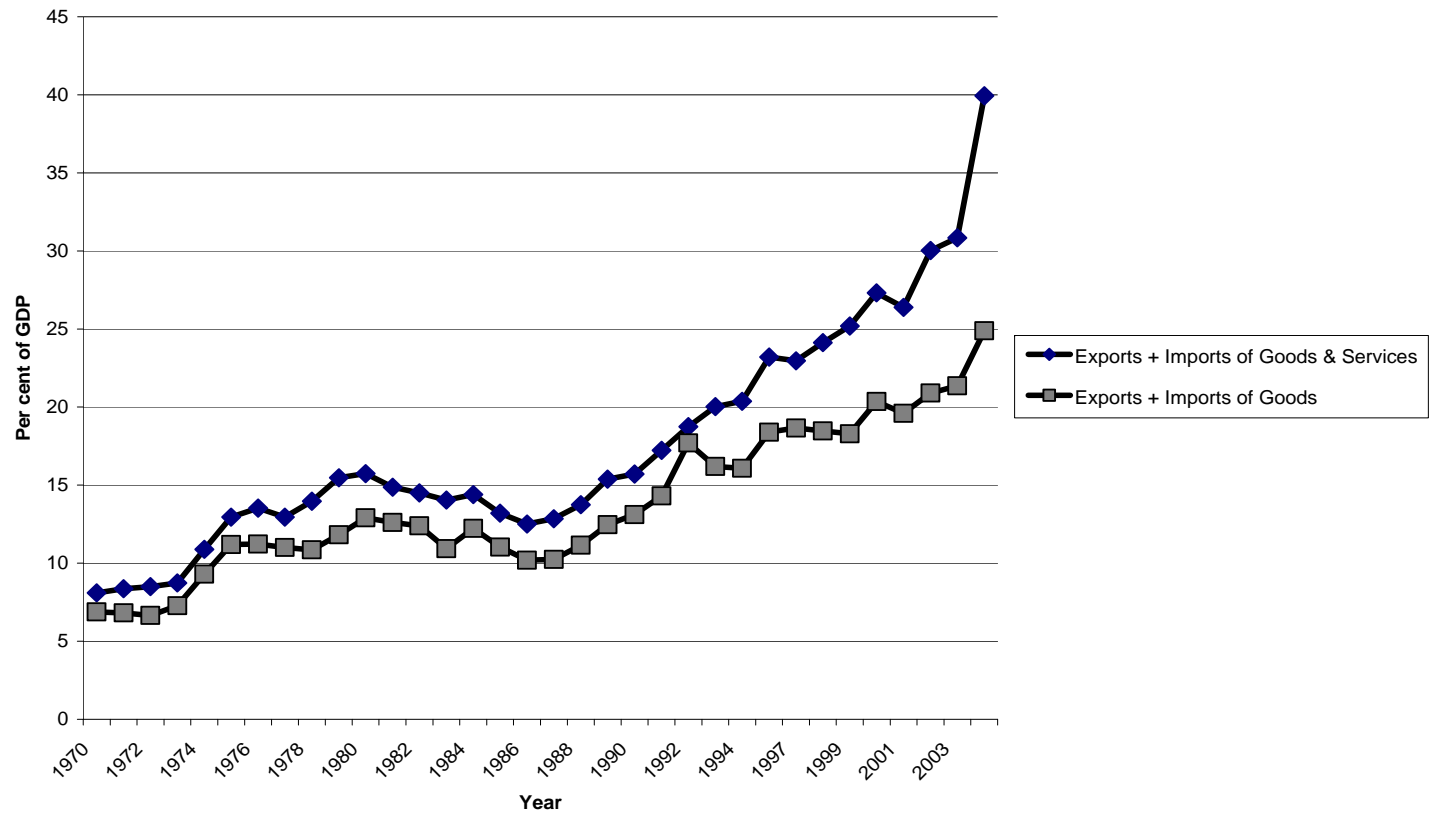
EFFECTIVE RATES OF PROTECTION BY SECTOR



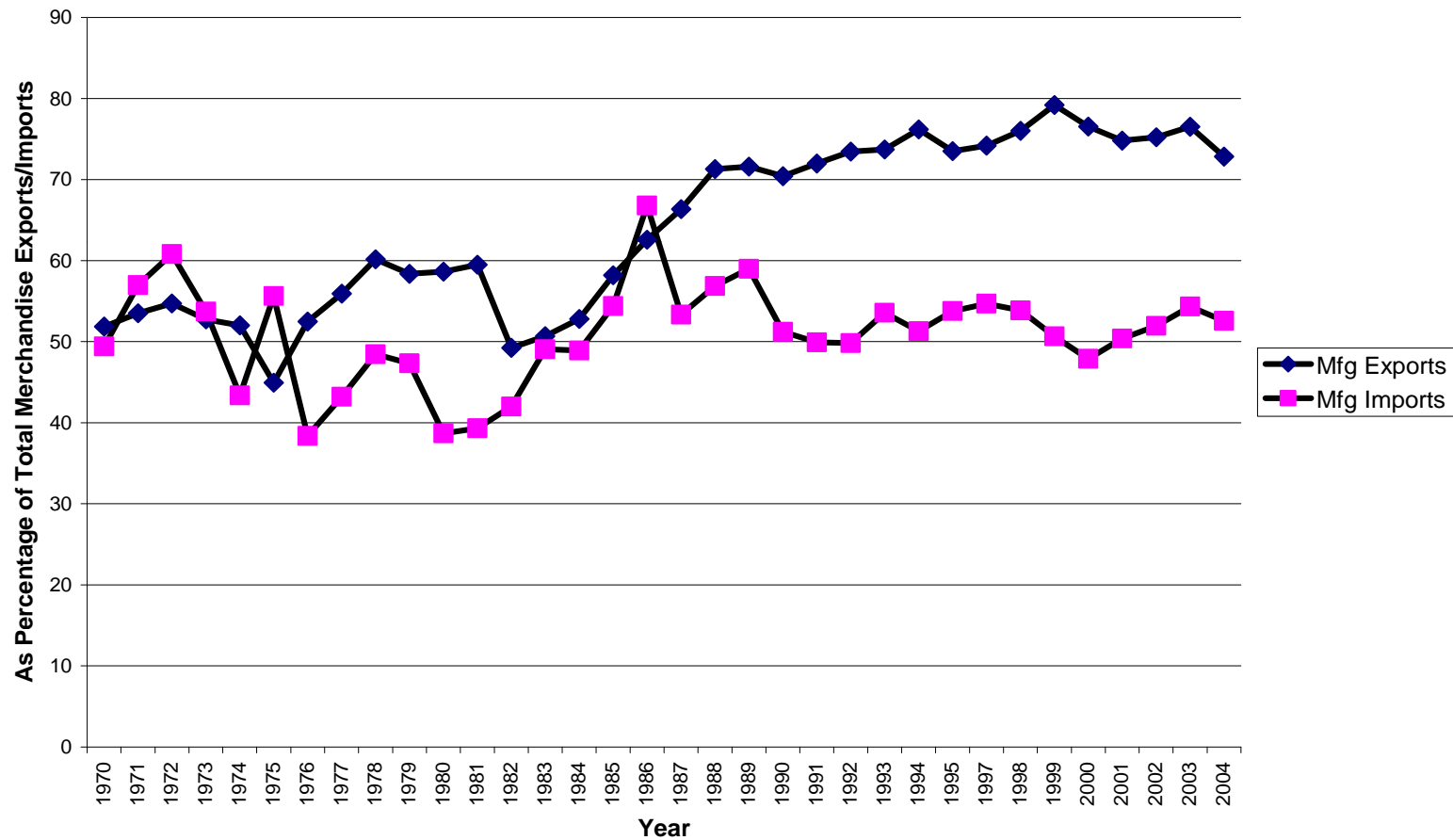
IMPORT COVERAGE RATIO BY SECTOR



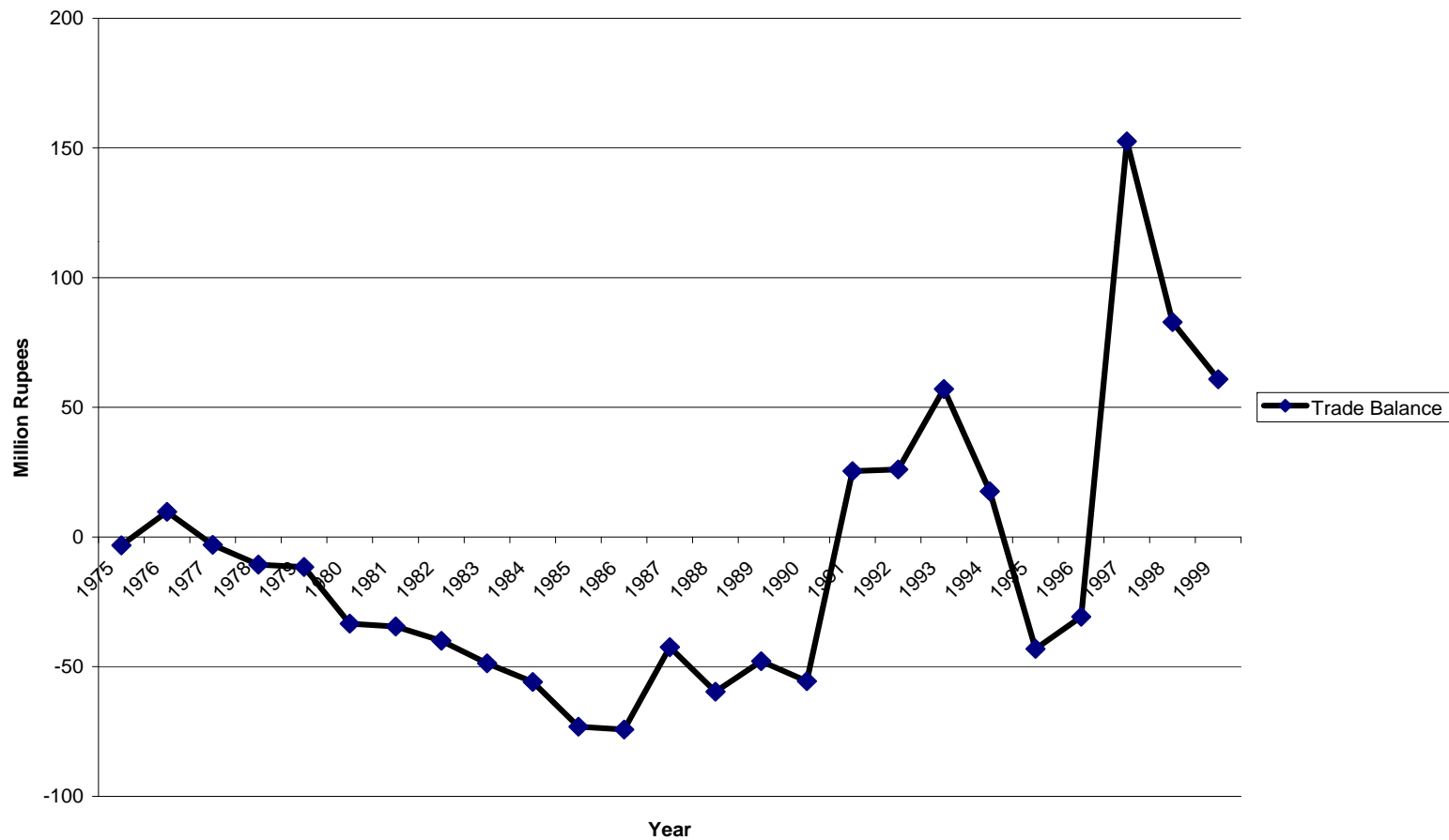
ASSESSING TRADE FLOWS



MANUFACTURING EXPORTS + IMPORTS SHARE



Manufacturing Trade Balance, India

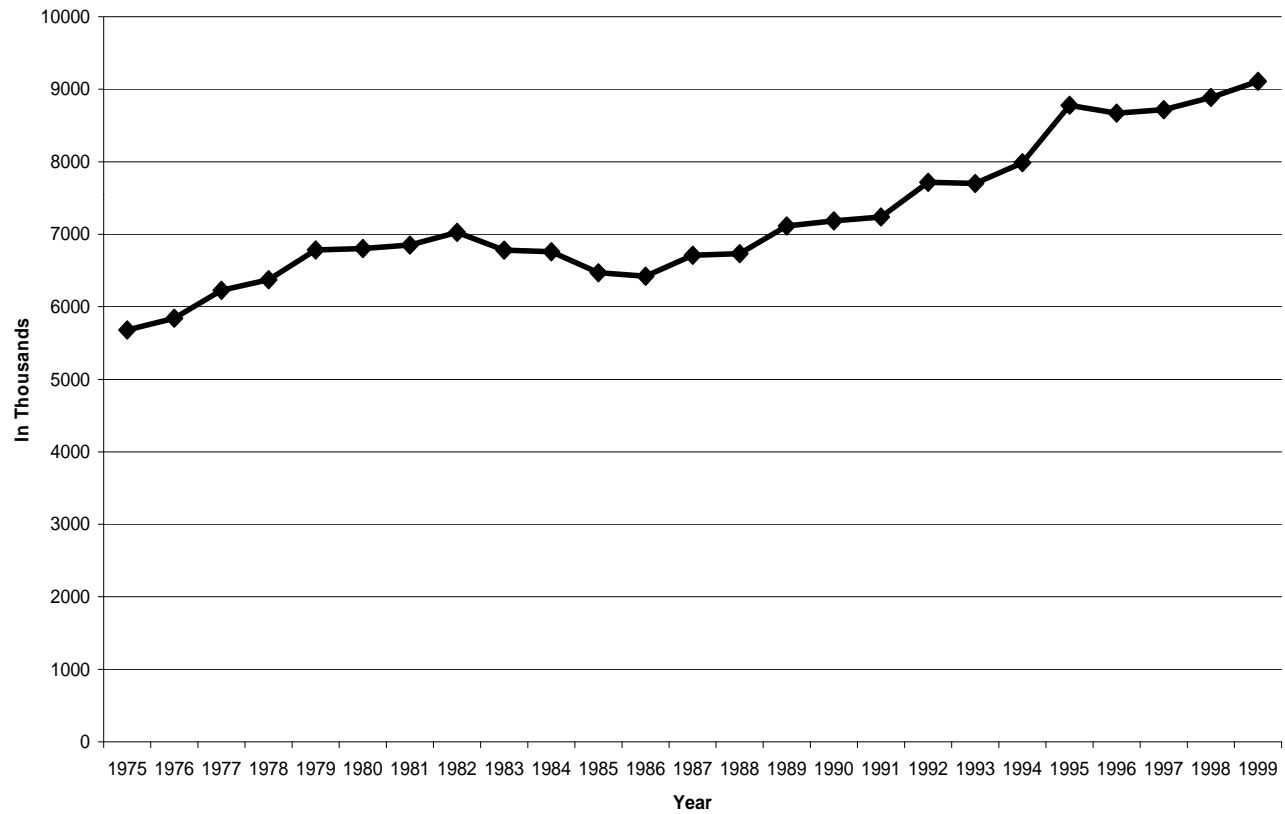


GROWTH AND TRANSFORMATION IN INDIAN INDUSTRY

- High growth rates of real value added at around 9 per cent per annum since the early 1980s.
- Accompanied by a shift in production and employment structure from labour-intensive to capital-intensive industries in the period 1975-1999.

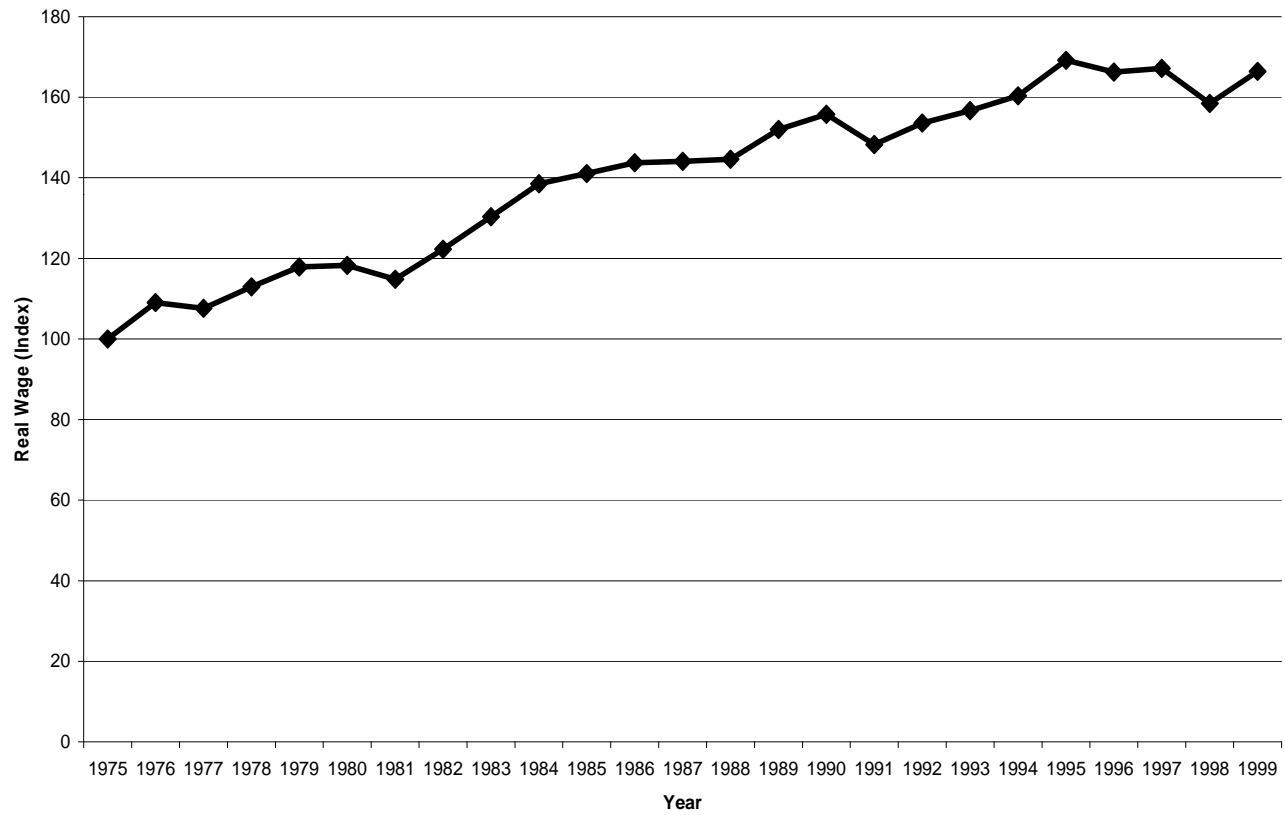


Manufacturing Employment





Real Wages



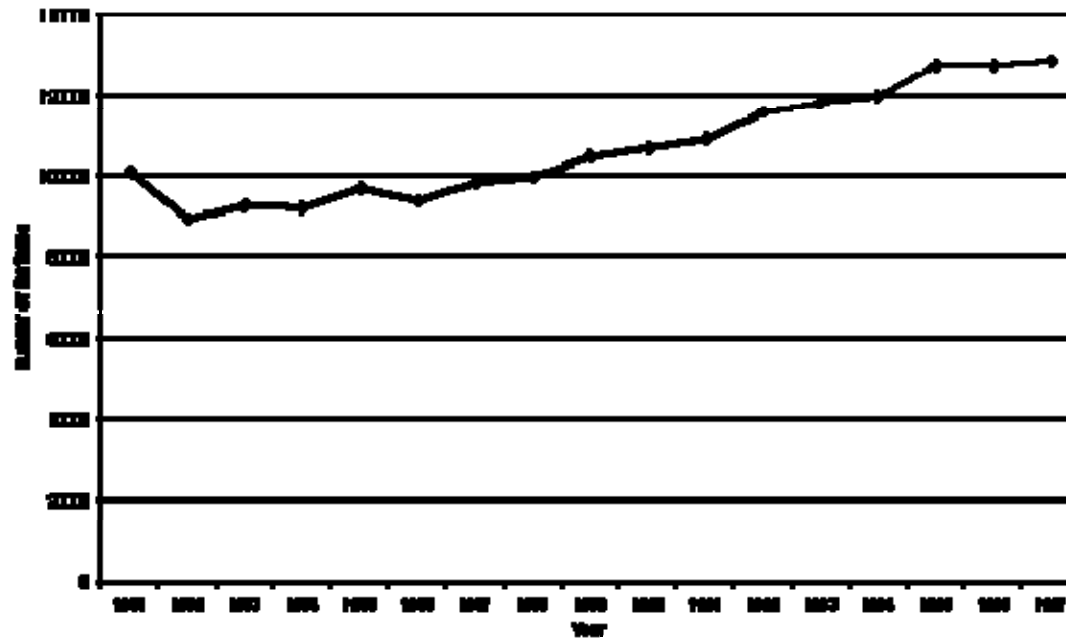


Labour Productivity



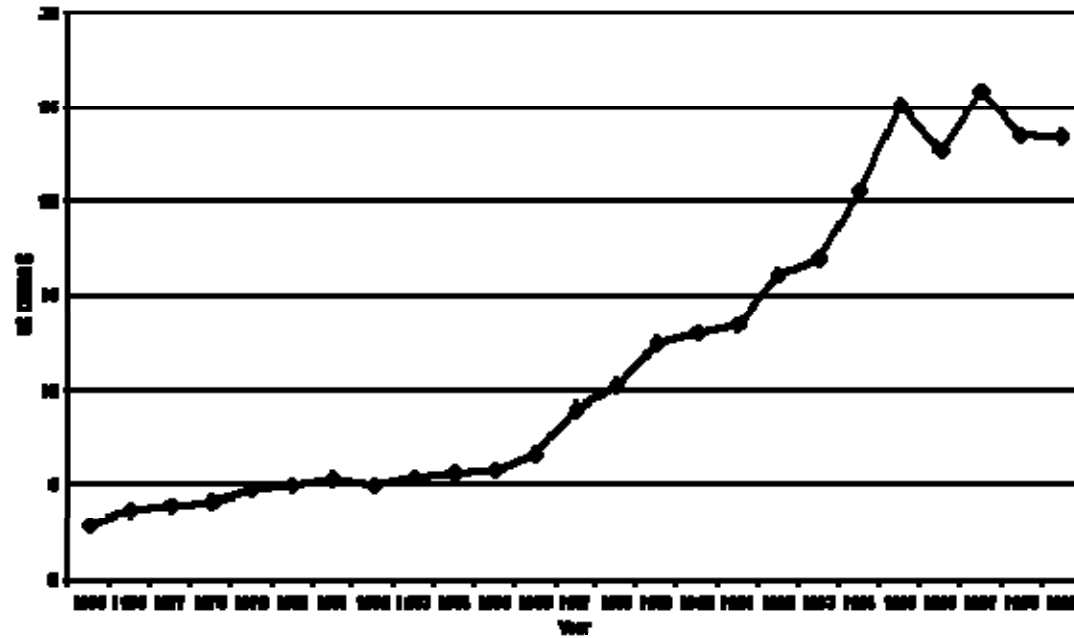


Number of Factories





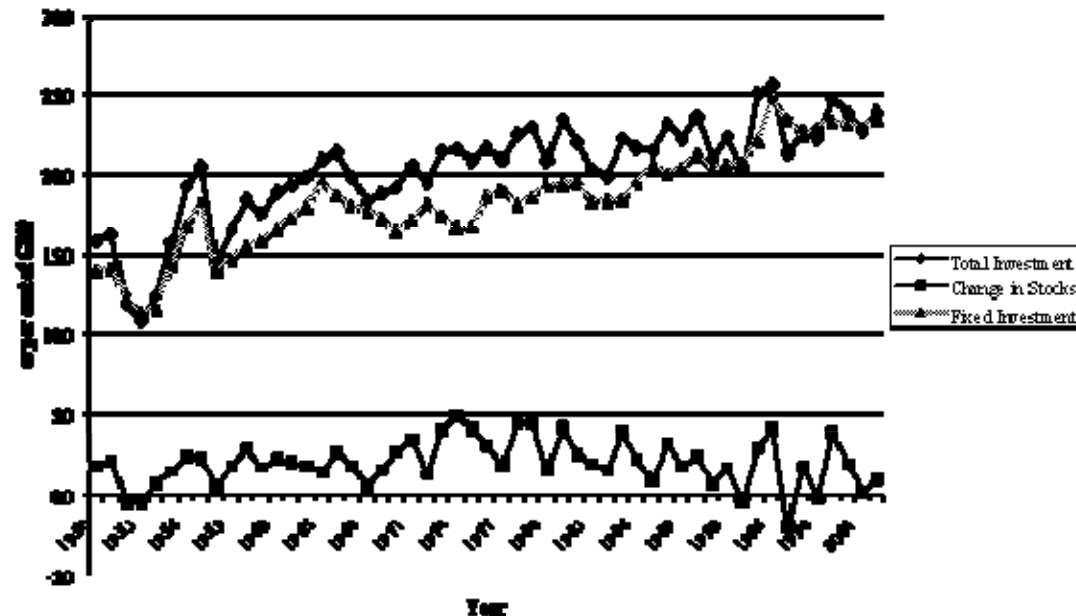
Manufacturing Exports



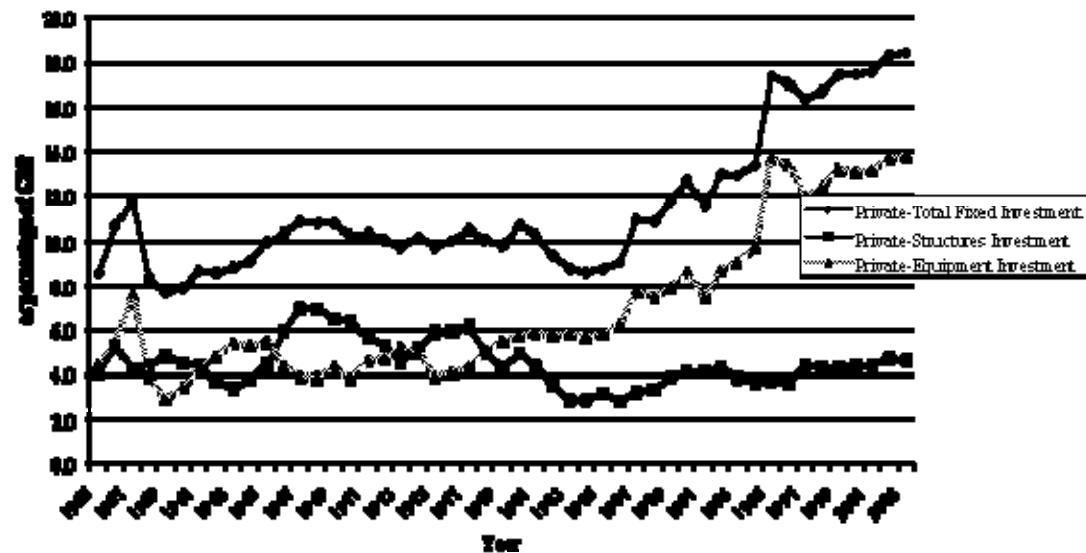
Trade Policy and Economic Growth

- Estimating growth regressions, I find that trade reforms that led to a lowering of the relative price of equipment investment (via the cuts in tariffs and NTBs of capital and intermediate goods) had an unambiguous positive effect on economic growth.
- The growth mechanism was: trade reforms \Rightarrow lower price of equipment \Rightarrow higher private investment in equipment \Rightarrow higher economic growth.
- The reforms of the mid 1980s seem to have a stronger growth effect than the reforms of the 1990s.

The Investment Rate and its Components

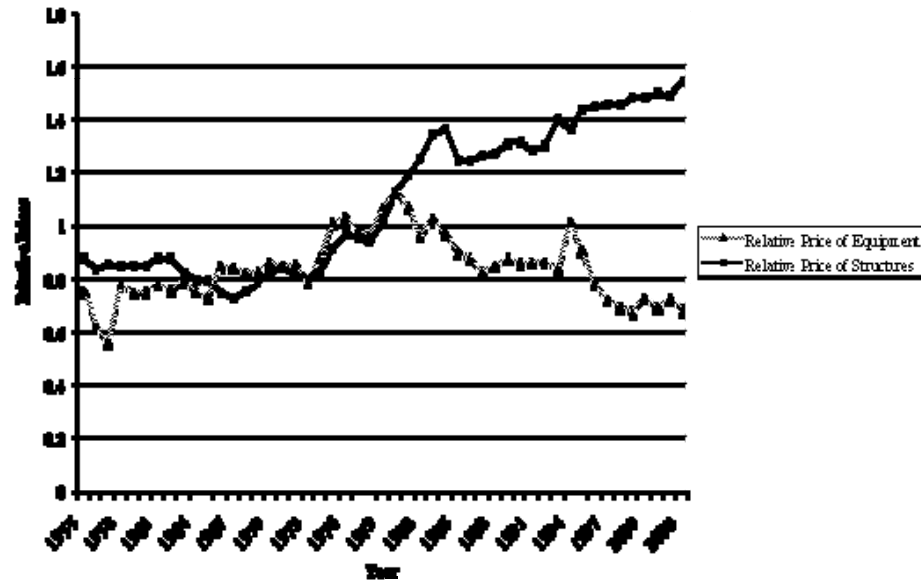


Total Private Fixed Investment and its Components





The Relative Price of Equipment

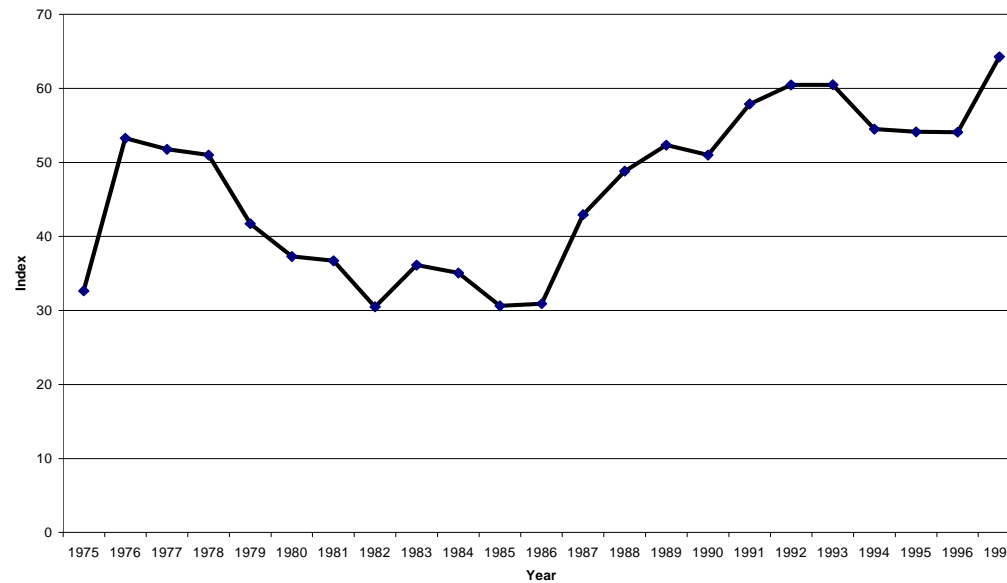


Trade Policy and Productivity Growth

- Trade reforms have had a positive effect on total factor productivity growth by a Paul Romer type ‘endogenous growth’ mechanisms where TFPG is positively impacted by an increasing variety of capital goods (the intuition comes from the Dixit-Stiglitz ‘love for variety’ utility functions).
- Trade reforms of the 1980s and 1990s allowed firms access to capital and intermediate goods from abroad.

Increasing 'varieties of capital goods'

Figure 3.9: Index of Intra-Industry Trade for Capital and Intermediate Goods, India



Trade Policy and Domestic Market Power

- An increase in quantity competition from abroad had a statistically significant and negative impact on domestic market power, and in domestic prices.
- However, the exchange rate depreciation of the mid 1980s to 1990s may have had a countervailing effect on domestic prices by providing more protection for import-competing sectors.

TRADE AND EMPLOYMENT

- FACTOR CONTENT APPROACH
- GROWTH DECOMPOSITION APPROACH
- LABOUR DEMAND MODELLING

TRADE – EMPLOYMENT: THE 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.

$$L = Q \cdot \sum w_i (L/Q)_i \quad (1)$$

where L is total manufacturing employment

Q is total manufacturing output

$w_i = Q_i/Q$

i refers to branches of manufacturing.

The impact of trade on manufacturing employment can therefore be decomposed into three elements represented in Equation (1).

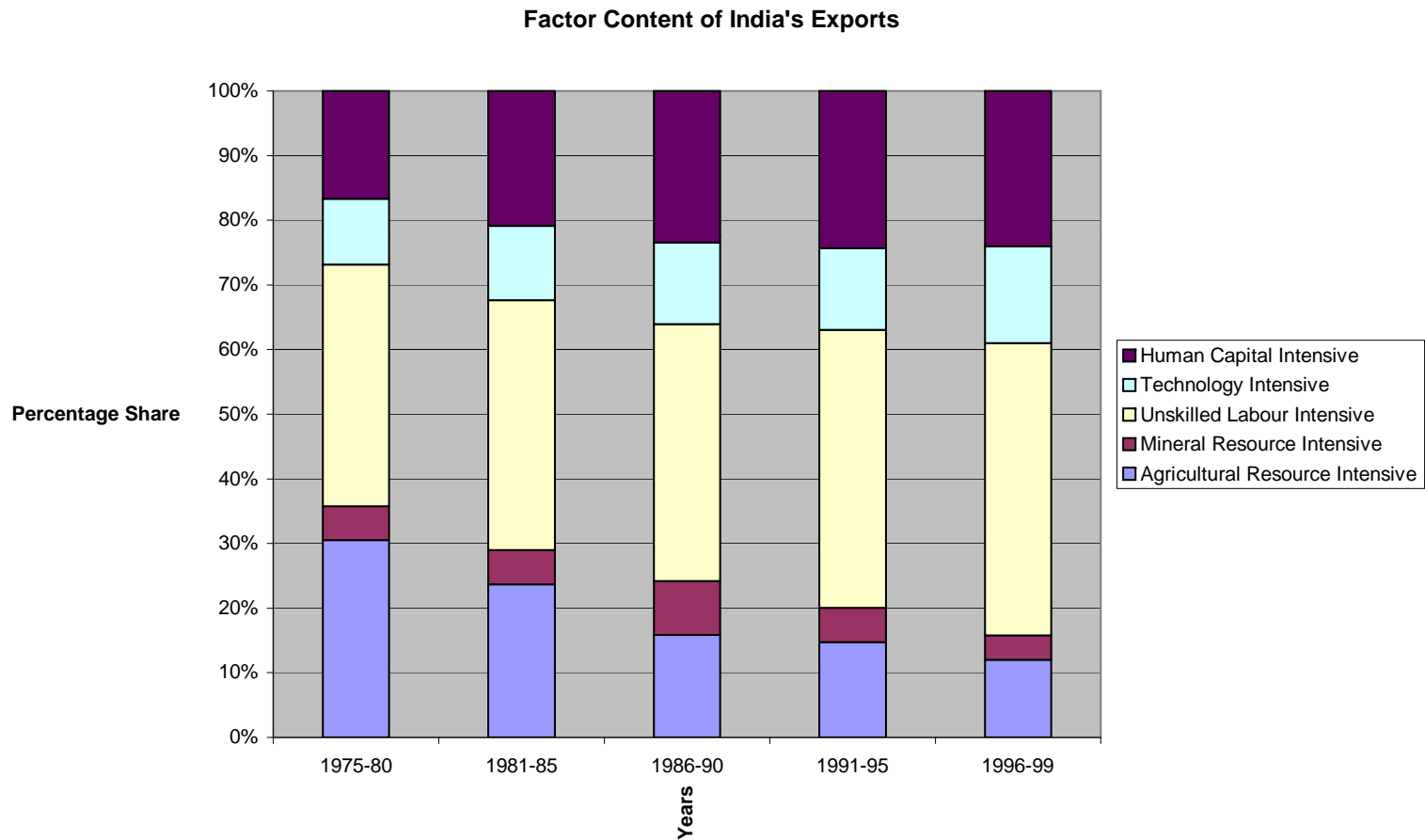
First, it may have an impact on the total output of the manufacturing sector (Q).

Second, 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.

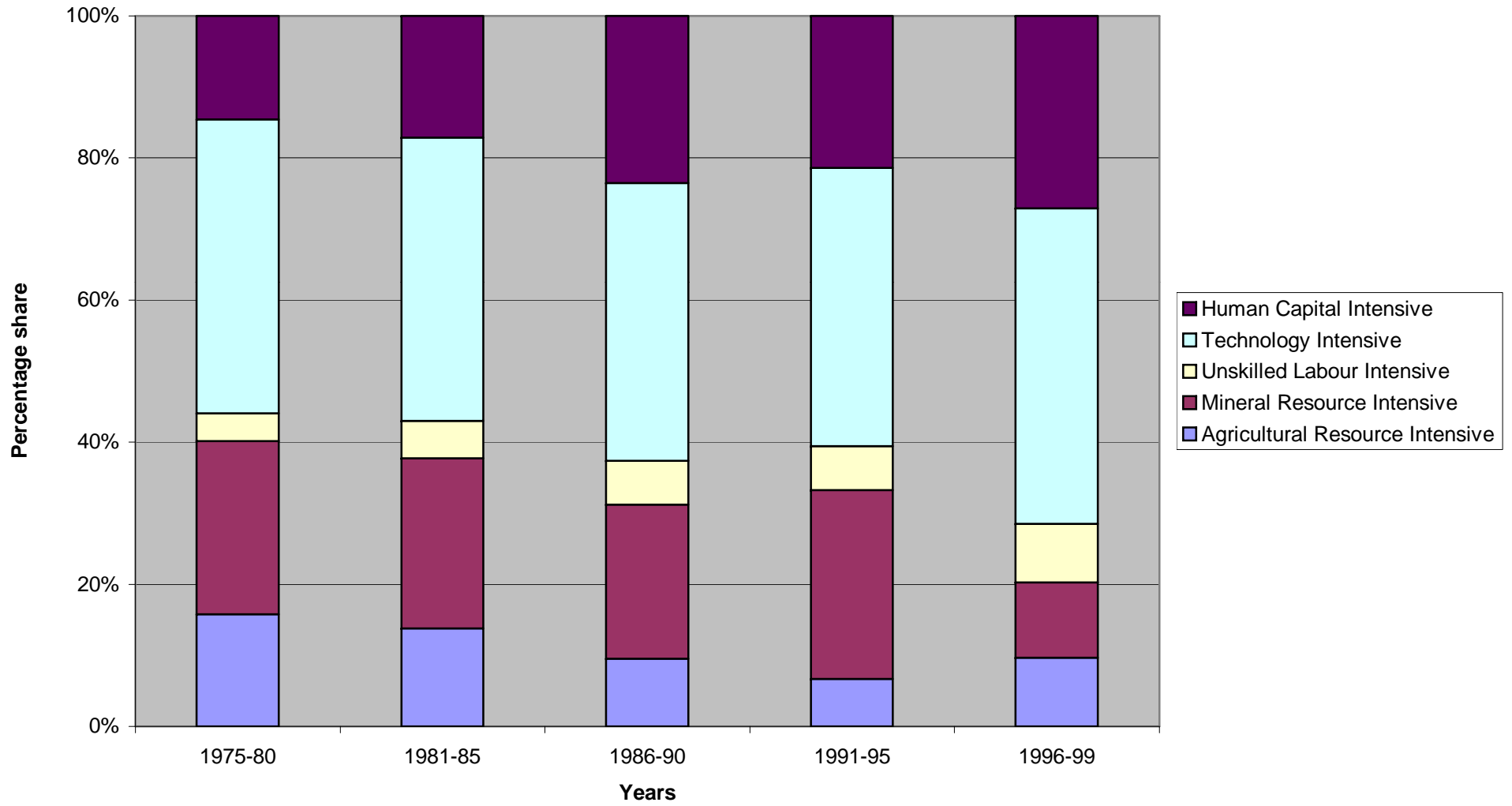
Finally, trade can have an impact on employment by changing labour coefficients within industries $(L/Q)_i$.

These three impacts can be referred to as the *scale* effect, the *composition* effect, and the *process* effect of trade.

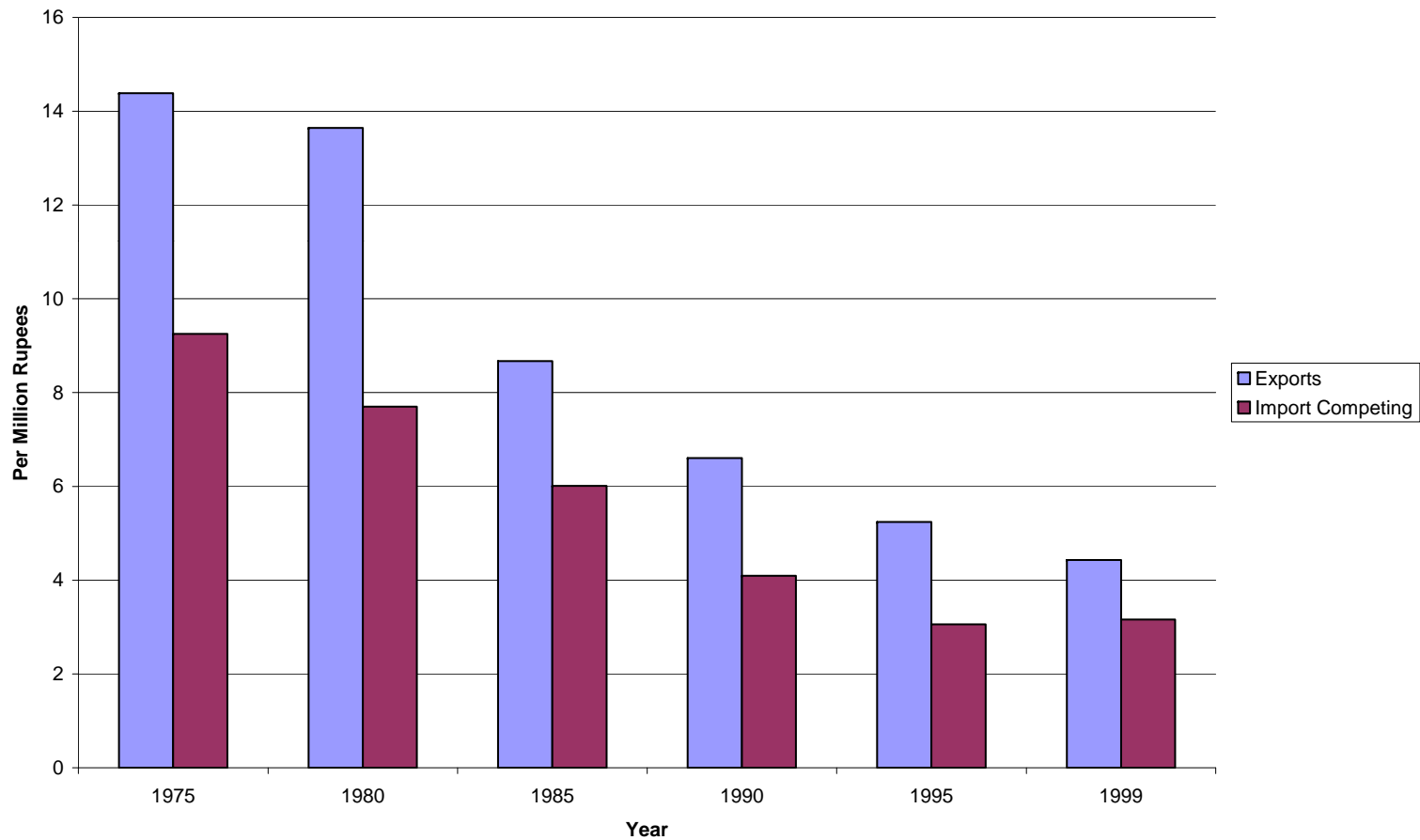
Factor Content of India's Manufacturing Exports



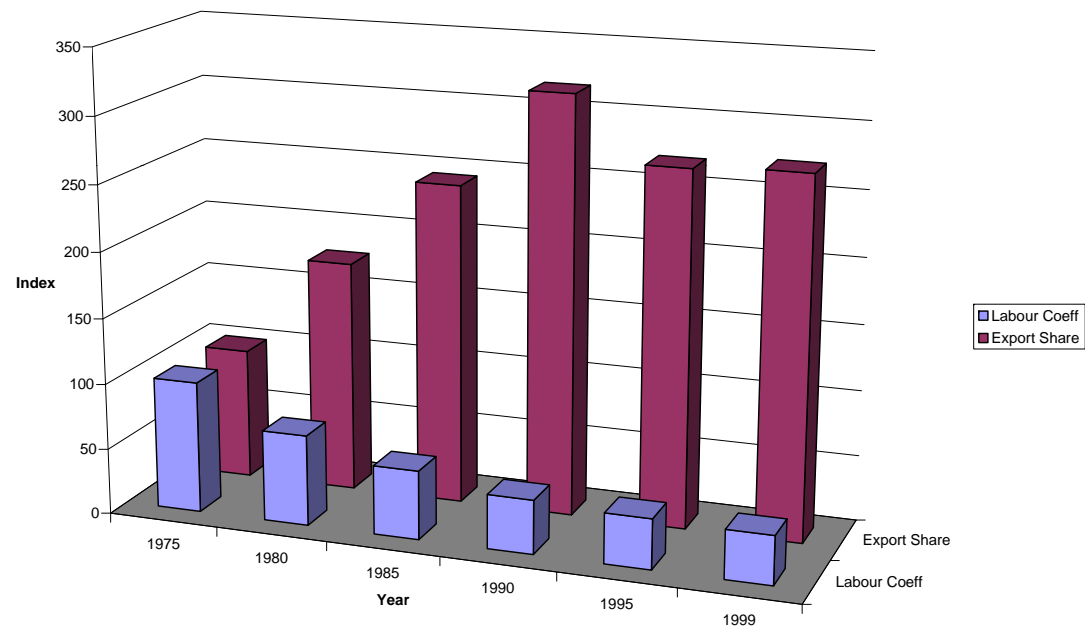
Factor Content of India's Imports



Employment Coefficients, Exports and Import-Competing Production, India



Contribution of Wearing Apparel to change in Employment Coefficient



Decomposition of Employment Changes

	Total Employment Effect	Domestic Demand	Productivity Growth	Export Growth	Import penetration	Net Employment Growth from Trade
Absolute Numbers (in thousands)						
1975-1980	1122	1444	-263	5	-63	-59
1980-1985	-333	1898	-2227	76	-80	-4
1985-1990	639	1981	-1883	388	152	541
1990-1995	848	2034	-1687	655	-154	501
1995-1999	870	1935	-1154	15	75	90
Percentage Contribution						
1975-1980		128.69	-23.47	0.43	-5.64	-5.22
1980-1985		-569.45	668.22	-22.83	24.06	1.23
1985-1990		310.08	-294.73	60.80	23.85	84.65
1990-1995		239.77	-198.87	77.23	-18.14	59.10
1995-1999		222.35	-132.65	1.69	8.60	10.30

Labour Demand Modelling

- We estimate dynamic labour demand functions using GMM methods using panel data of 27 industries for 25 years.
- We augment the labour demand equation with import penetration and export orientation variables.
- We would expect that trade should lead to employment reduction via increases in labour productivity.
- We do not find any support for this hypothesis.

Main findings on employment

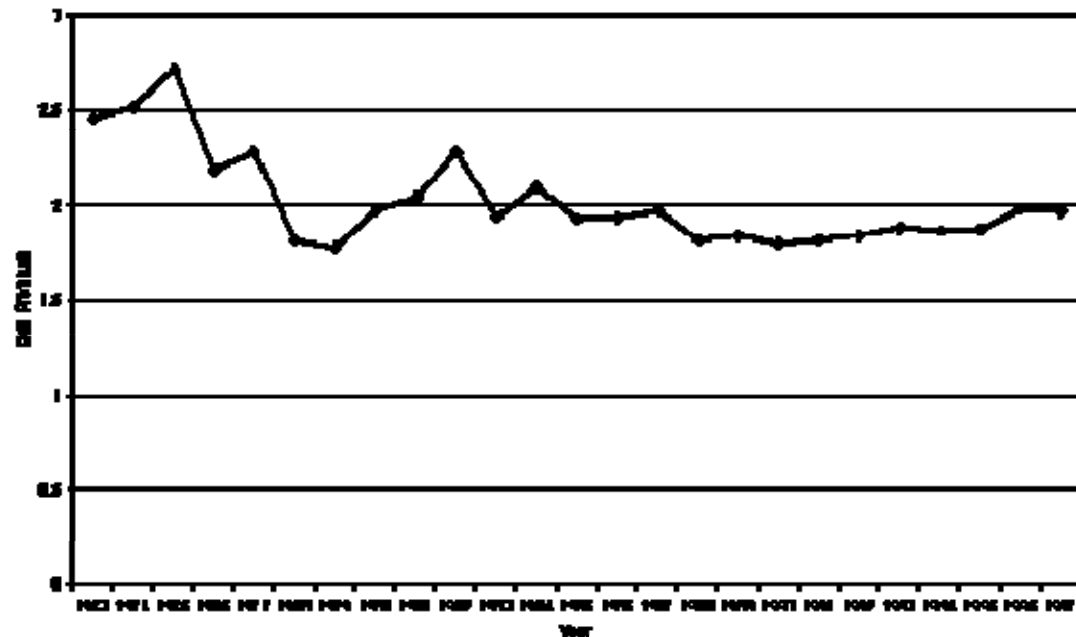
The three approaches show negligible effects of trade on manufacturing employment for India, whether directly or indirectly.

Surprisingly, we find that the impact of international trade on manufacturing employment in India mirrors the two African countries for which we can undertake comparisons rather than the two Asian countries (also see Sen, *Is India following the footsteps of Africa or Asia?*, Review of Development Economics 2009 forthcoming).

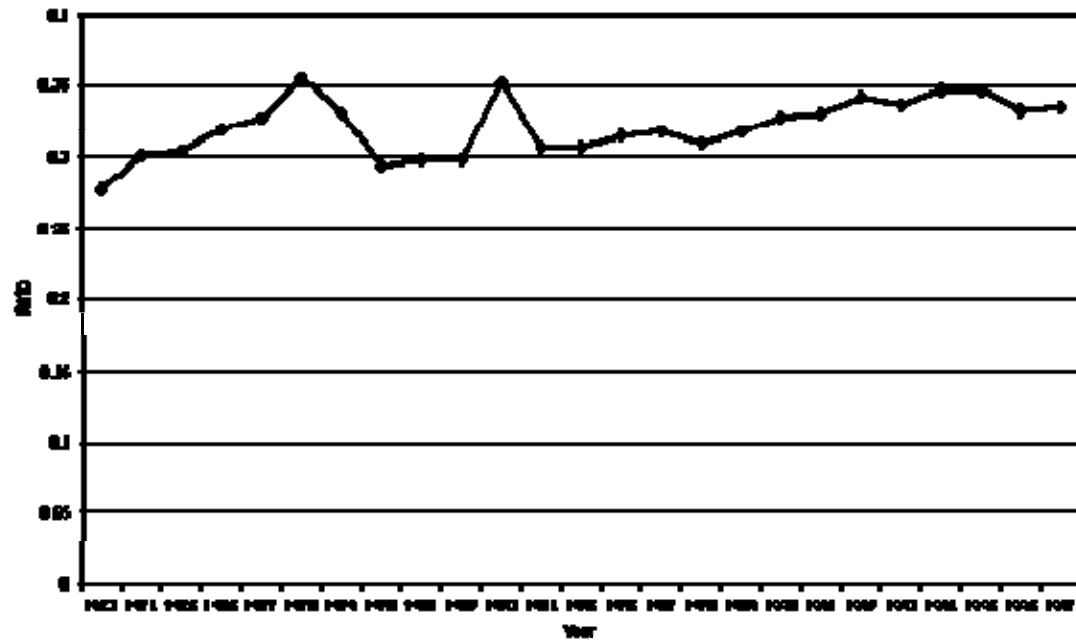
Trade Policy and Wage Inequality

- The main theoretical framework that guides research on the link between international trade and the labour market is the one cone Heckscher-Ohlin (H-O) model.
- This model predicts that increased trade between developed and developing countries will lead to *decreasing* wage inequality between these two groups of workers in developing countries.
- An alternate theoretical perspective has been proposed by Adrian Wood who argues that international trade may have adverse effects on the wages and employment of unskilled workers relative to skilled workers by bringing about skill biased technological change that leads to a displacement of unskilled workers

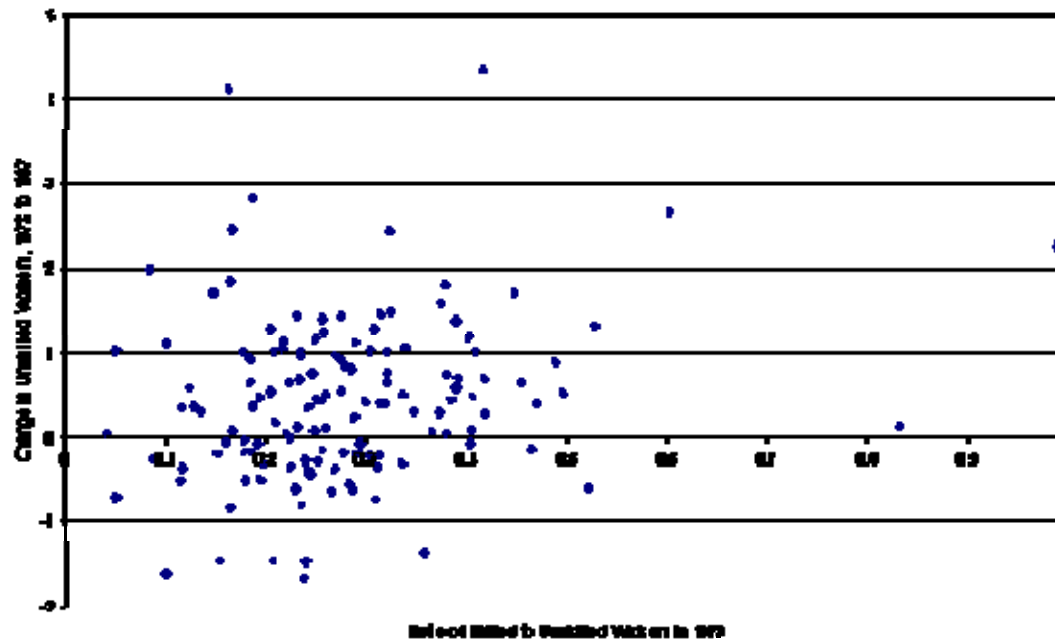
Wage Inequality – Ratio of wage rate of non-production workers to the wage rate of production workers



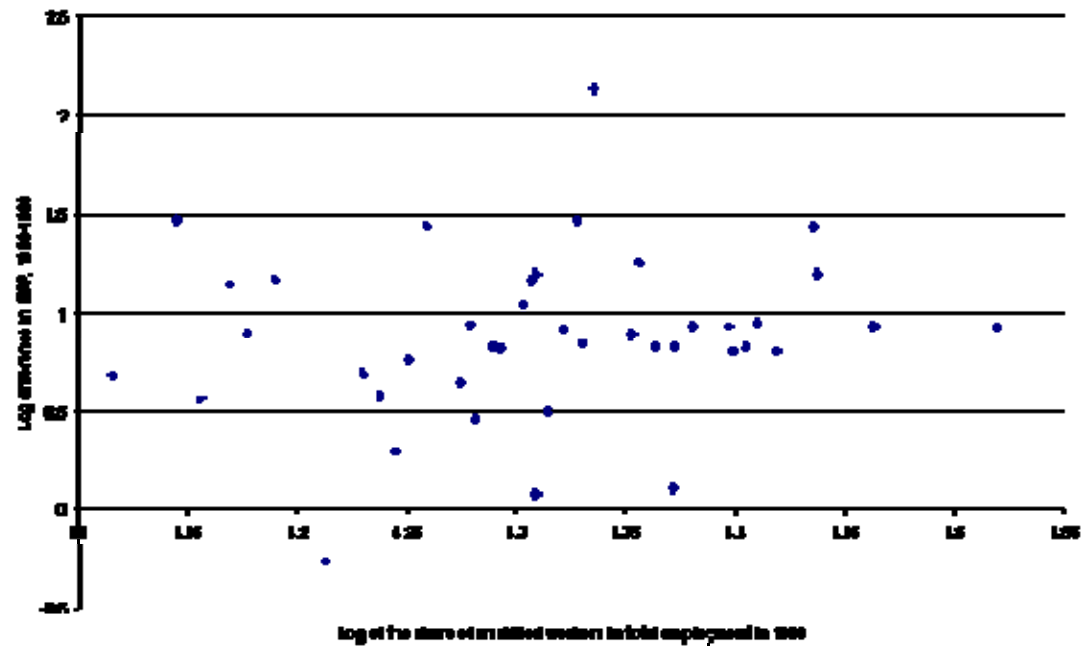
Relative Employment of Non-production Workers in Indian Manufacturing



Relationship between Unskilled Employment Growth and Skill Intensity



Reduction in Effective Rates of Protection (ERP) between 1999 to 1980 and the Share of Unskilled Workers in 1980



Main findings on wage inequality

- We find evidence of the validity of both theoretical perspectives - Heckscher-Ohlin theory and trade induced skilled biased technological progress - to explain the co-movement in wage inequality and relative skill intensity in Indian manufacturing, with both variables increasing in the 1990s.
- Trade-induced technological progress has led to an increase in relative skill intensity and wage inequality *within* industries.
- At the same time, the decline in protection that seems to have occurred more in unskilled labour intensive industries has led to a relative fall in the economy-wide return to unskilled labour relative to skilled labour, as predicted by H-O theory.
- Trade reforms have led to a widening of wage gap between skilled and unskilled workers, and an increase in relative skill intensity in Indian manufacturing.

Regional Inequality

- We find that states in the Southern and Northern regions of the country have seen an expansion in manufacturing employment and production while states in the Eastern and Western regions of the country have seen a decline in manufacturing employment and production over the period 1979-1997.
- There does not appear to be a clear correlation between geographical and agglomeration factors and spatial economic development – coastal states and states with large cities have not observed either a significant increase or decrease in their shares of industrial employment and production over the period under consideration.

Regional Inequality - 2

- When examining the patterns of industrialisation by individual states, we see a marked heterogeneity in industrial performance.
- States like Andhra Pradesh and Tamil Nadu have seen significant increases in manufacturing employment and production.
- In contrast, states like Maharashtra and West Bengal have seen a decline in industrial performance over time.
- We also do not seem to see evidence of the manufacturing sector expanding in states with export-oriented industries and declining in states with import-competing industries.
- We conclude that the institutional and business environment rather than trade policy per se may have played a crucial role in determining which states have done better in manufacturing performance relative to other states.

CONCLUSIONS

- Trade reforms have had a significant positive impact on efficiency in Indian manufacturing, following the reforms of the 1980s and 1990s.
- Economic reforms have had the desired positive effect on Indian manufacturing performance, enabling the manufacturing sector to break out of the stagnation witnessed in the pre-reform period.
- At the same time, trade reforms have not had led to a significant change in the pattern of industrial growth towards labour-intensive commodities in which India had a comparative advantage, given its favourable labour-land ratio.
- There has been weak employment effects, especially of the labour-intensive sector.
- The increase in wage inequality in the 1990s may have been due to trade reforms.
- Thus, from the viewpoint of equity, India's post-reform manufacturing performance has been disappointing.

POLICY IMPLICATIONS – JOBLESS GROWTH

- International trade may have played an important contributing role in explaining the phenomenon of ‘jobless growth’ in Indian manufacturing observed in the 1980s and 1990s.
- Trade reforms have unambiguously increased economic growth since the early 1980s, but have not similar positive effects on employment growth.

Why has this happened?

- In contrast to the other labour-surplus economies in South Asia, India has built up 'dynamic comparative advantage' in technology intensive manufacturing commodities such as drugs and pharmaceuticals.
- The capabilities that India has acquired in the technology-intensive sectors have been due in part to the large public investment in science and technology institutions of higher learning, and due in part to the 'infant industry' protection that was provided to these industries at the early stages of development
- in spite of favourable unskilled labour to land ratios, India has not been able to export labour-intensive commodities to the same extent as China due to strong policy impediments still in place that has constrained the growth of the labour-intensive manufacturing sector.
- Chief among these has been the presence of restrictive labour laws (and small scale sector reservations in the early phase) that create a strong disincentive for firms in the organised sector to expand in the face of a more volatile macroeconomic environment.

Policy Implication – Widening Disparities between regions

- With respect to the increase in regional disparities in manufacturing production and employment, it is clear that simplistic accounts of why such disparities have occurred are not valid in the Indian context.
- Unlike what we have observed in China, coastal regions have not necessarily benefited since the reforms, nor have regions with initial capabilities in manufacturing.
- What is perhaps been more significant in the evolution of regional disparities has been the ability of some state governments to provide a conducive environment for the manufacturing sector to expand.
- Thus, the relationship of the governments of these states with the business sector has been more critical in explaining manufacturing performance in the states in question, rather than innate advantages borne out of geography or history.

Policy Implication – Widening Wage Inequality

- The solution to this problem lies in the increased supply of skilled workers to India's manufacturing industries, so that the skill premium is driven down.
- Given the state's fiscal constraint in expanding places in publicly funded universities and institutions, this can come about with a more liberal attitude towards the involvement of the private sector in the provision of vocational skills and in higher education.

Finally, the role of manufacturing in India's future economic growth

- One surprising feature of India's recent growth experience has been that the manufacturing sector has played less of a role in India's economic growth as compared to the services sector.
- It has been conjectured that India may leapfrog from an agriculture based economy to a service based economy, and that India's future economic growth will be fuelled by service sector growth.
- While this may be true, there are reasons to be cautious about such an optimistic scenario.
- The component of the service sector that is growth oriented is the export-oriented information technology sector, which is significantly skilled labour intensive.

Dualism in services is no different than dualism in manufacturing

- If the technology-enabled service sector is to be the engine of India's future economic growth, the pattern of such growth may not be different than the 'jobless growth' phenomenon that has been observed in Indian manufacturing.
- Therefore, it seems unavoidable that the unskilled labour intensive component of the manufacturing sector may still provide the best route out of poverty for India's rural masses.

- Baumol's Disease - Productivity growth in services much less than that in manufacturing
- **The preferred strategy for Indian policy-makers should be to encourage the growth of India's manufacturing sector, both in its skilled and unskilled intensive components**
- **Leapfrogging into a service sector economy may not be in India's interests, either from the viewpoints of efficiency or equity.**