



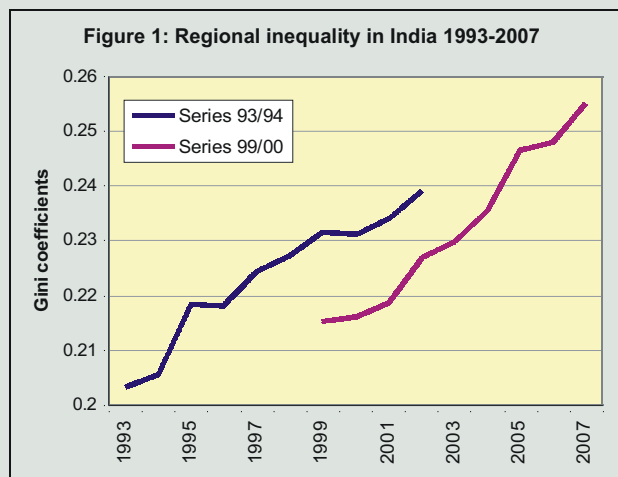
The Role of Trade Integration for Regional Disparities in India

Introduction

Along with China, India has experienced that fast growth and increased trade openness has been accompanied by growing regional disparities. This naturally raises the question whether regional inequality is *caused* by openness. Alternatively, growth may be uneven for other reasons so that trade is not a cause even if state-level trade openness and income levels may be correlated. This Briefing Paper examines the issue based on Melchior (2010a) which contains more detail and a number of references which we mostly omit here.

India's Regional Disparities

Figure 1 (from Melchior 2010a) shows India's increase in regional inequality.¹



The Gini varies between 0 (no inequality) to 1 (one state has all income) and during 1993-94 to 2007-08 there was a steady increase. In 2006, the richest state (Chandigarh) had per capita income ten times higher than the poorest (Bihar). In spite of fast economic growth, some major states have fallen behind, with low income levels and massive poverty.

India's regional disparities were in 2007-08 at approximately the same level as in China. This is relatively high in international comparison; almost twice the level

of inequality between countries in the EU-27. Given that regional inequality and trade openness have increased in parallel for India, some authors² have argued that for India, trade integration is *causing* regional inequality. It has been confirmed that open states are richer³, although the direction of causality may not be clear: Are they rich because they trade or do they trade because they are rich?⁴

Trade Openness & Regional Inequality: An Ambiguous Relationship

Does international trade liberalisation create more domestic regional inequality? The question has been raised in a number of research contributions and the answer is ambiguous, theoretically as well as empirically. In a recent survey⁵ concludes "Whether trade liberalisation raises or lowers regional inequality therefore depends on each country's specific geography". For example, France, Germany and Poland have different geographical locations in Europe so it is not evident that trade integration will affect their domestic regional disparities in the same way.

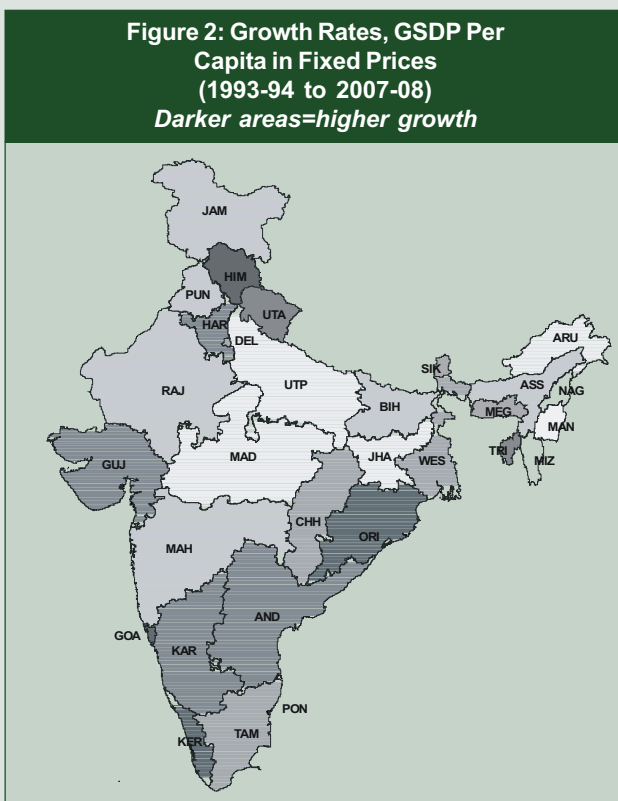
Melchior⁶ also shows that "trade liberalisation" can take many different forms: The impact of e.g. Eastern enlargement of the EU is different from the impact of World Trade Organisation (WTO) tariff cuts or reduced transport costs. Hence, there is not one single answer to the questions about trade and regional inequality: It depends on the type of reform as well as the geography of the country. During the last decades, India has undertaken unilateral trade liberalisation, but trade costs have also been affected by WTO liberalisation, regional integration and changes in transport costs and we cannot take for granted that all these changes have a similar impact on regional inequality.

In order to analyse the impact of trade liberalisation on domestic regions one should therefore be sufficiently specific about geography as well as the type of reform to be considered. Following some other recent contributions^{7,8} one use multi-region model simulation as a tool for the analysis. For the analysis of India, Melchior⁹

uses a world trade model with 166 countries and regions. A parallel analysis of China is undertaken in Melchior¹⁰.

India: Maps of Economic Geography

For China, it is well known that South-East coastal regions have grown faster. According to some authors¹¹ there is a coastal-inland divide also for India but this is not very dominating in the observed growth pattern. The pattern of growth in India's states is less stylised than for China, as shown in Figure 2¹².



In order to find out whether trade integration may contribute to explaining this pattern, we use a world trade model with 166 regions and countries, with a base case calibrated so that observed income levels are reproduced. We then simulate the impact of changes in trade integration, for example a change from autarky to international trade; reductions in international trade costs; changes in domestic trade costs in India; and reductions in transport costs.

Some trade costs (e.g. transport costs) depend on distance, whereas others (e.g. tariffs) do not, and their simultaneous presence creates a distinct geographical impact that varies across scenarios. We also simulate the impact of economic growth; modelled as a proportional increase in the stock of (physical or human) capital in all Indian states. This also has a geographical impact since it makes India's domestic markets larger relative to international markets.¹³

The simulations generally show that trade is good and autarky is bad for all the states of India, but the best

thing is growth: A doubling of the capital stock has much greater impact than a similar reduction in trade costs. India is a poor country and the productivity increase from investments in skills or physical capital is large, and larger than the gains from trade. Beyond these common effects, the geographical impact of trade integration varies across scenarios. From the model simulations, we can distinguish three distinct geographical patterns:

- Trade autarky creates the “Central Cone” pattern (to the left) where the peripheral regions in the North-West and North-East suffer from being isolated within India. International trade liberalisation reverses this pattern and benefits the periphery, so the spatial impact is a mirror image of the “Central Cone” pattern.
- Reduced transport costs create a “Triangular” pattern (in the middle) where the three corners of the Indian triangle benefit more. Better transport infrastructure reduces the role of geography and thereby promotes convergence.
- The third pattern is the “Fragmented” one (to the right): This occurs when high domestic trade costs within India splits the country into different regional clusters.

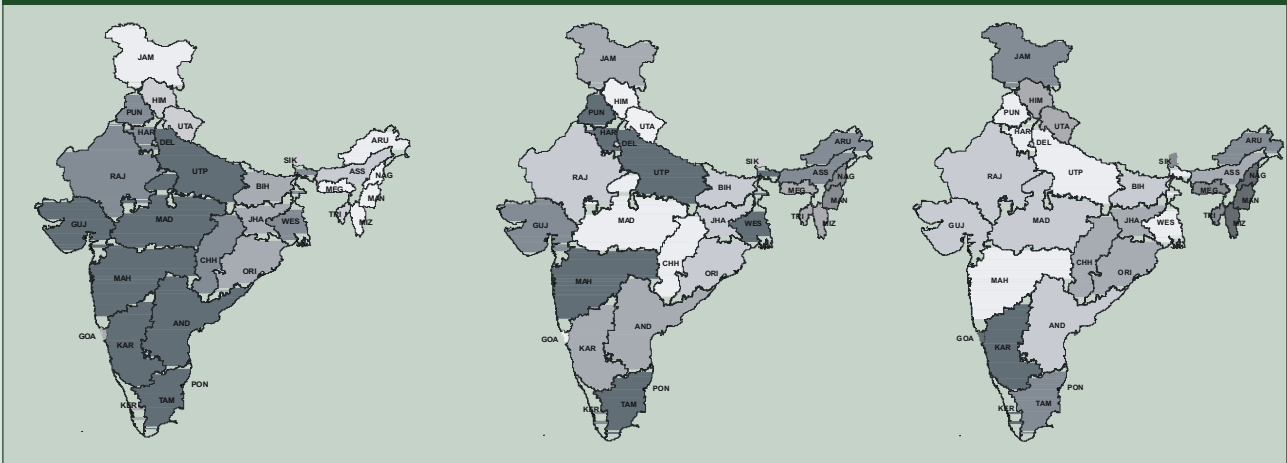
Comparing Figures 2 and 3, some similarity between actually observed growth and the “Triangular” pattern in the middle is observed. This is also statistically confirmed, so the empirical analysis suggests that reduced transport, communication or infrastructure costs have made the world smaller and contributed to regional convergence within India.

A caveat in the empirical analysis is that economic growth (surprisingly) has the same spatial impact as autarky; i.e. the “Central Cone” pattern. The reason is that disproportionately high growth in India (compared to other countries) makes domestic markets more important in the same way as in autarky. Growth and autarky have diametrically opposed effects on the welfare of the regions, but the geographical variation is similar.

In terms of inter-state geography, Indian growth therefore works opposite to international trade liberalisation, and this may be a reason why we cannot find the expected footprint of international liberalisation (the central cone map) in the observed growth pattern of India. This may also be a complication in the analysis of China, where a similar growth effect on geography may be present.

On the whole, the analysis suggests that trade liberalisation mainly does not explain the increasing regional disparities of India; on the contrary it may have contributed to convergence. On the other hand, Indian growth could contribute to divergence, by leaving the peripheries more behind due to their inferior access to the fast-growing domestic market. In the empirical analysis, it is also shown that the Indian services sector is mainly driven by domestic demand growth and this contributes to divergence.

Figure 3: The 'Central Cone', 'Triangular', and 'Fragmented' Patterns



In the theoretical analysis, we find that the common impact across states is generally much stronger than the differences between them, and this suggests that trade shocks may not be the core explanation of changes in regional inequality. Hence it is possible that growing regional disparities in India are caused by other factors that we have not addressed.

In our simulations, the capital stock is exogenously given but we observe that investments in skills (human capital) or physical capital affect gross domestic product (GDP) more than trade liberalisation. A core candidate for explaining regional growth differences is therefore uneven accumulation of skills or capital. Such investments could be domestic or from abroad; foreign direct investment (FDI) has played a significant role for regional disparities in China and could be important also in India.

Furthermore, we have assumed in the analysis that the quality of roads and infrastructure is the same for all states but it is empirically confirmed that this is not true. If trade barriers vary across states (beyond what follows from geographical location) this could explain inequality. Lower trade costs could then promote growth in some regions, but it is not trade per se but the level of infrastructure that is the cause. There could also be "cumulative causation", as emphasised in classical development writings as well as the New Economic Geography (NEG), so that a small initial gap is enlarged in the dynamic process and some regions are trapped with low growth.

The Role of Inter-state Integration: India vs EU

In the analysis, we examine domestic inter-state trade as well as international trade. India's domestic trade is limited by its lower income (which makes the market smaller and reduces productivity in traded goods) and inter-state barriers or weakly developed infrastructure. For a large subcontinent such as India, inter-state trade and economic integration is important for export performance as well as regional inequality. By investing in infrastructure and promoting a competitive logistics

sector, domestic as well as international trade may be promoted.

Within Western Europe, the extent of economic integration has been a core issue during the whole post-war period, and most Europeans believe this integration has contributed to prosperity and growth. Given that Indian states have a population size larger than most European countries, the counterpart in India to intra-European trade is inter-state trade, often called *inland trade*. A paradox is that the extent of inter-state in India is unknown, and we know little about its trend. Statistics for the international trade of the states are supposed to become available but it remains uncertain when this will occur.

There are several reasons why India should worry about its domestic market¹⁴:

- Current evidence suggests that the quality of transport and other infrastructure is uneven and sometimes of low quality, with strong variation across states.
- For many years, the rate of investment in infrastructure in India has been relatively low in a comparative perspective.
- The majority of firms in India are small so trade with neighbour states may be the first stepping stone for internationalisation, not trade with remote rich countries.
- According to modern trade theory, domestic market integration also improves national performance in international markets. Hence domestic trade and trade integration is not a substitute to international trade, but a complement.
- Casuistic evidence tells that goods may be shipped from the port to international markets within hours or days, while shipping through India takes months. For this reason India may have too little domestic trade.
- Domestic inter-state migration is limited and this fits into the story of Williamson; maintaining regional disparities.

Hence, in order to promote regional equity as well as India's international trade performance, India should have a focus on domestic market integration and not only international integration. The empirical analysis¹⁵ indicates that particularly for the manufacturing sector, domestic trade infrastructure is important for growth.

According to Indian as well as World Bank calculations, India has the world's largest pool of poverty

and for its elimination India should promote inclusive growth rather than a dual economy with a fast-growing export enclave surrounded by a low-productivity mass of unorganised firms. In order to achieve this, the domestic inter-state market could play a major role. For India, the counterpart to European integration is India's internal market, where labour, capital, goods and services should move freely.

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Endnotes

- 1 In the figure, we use population-weighted Gini coefficients for inequality in GDP per capita across Indian states. GDP is measured in fixed prices with base years 1993-94 (curve to the left) or 1999-2000 (curve to the right). Comparison with the EU: In 2005, the population-weighted Gini for inequality in GDP per capita across countries in the EU-27 was 0.14.
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- 10 Melchior, A., 2010b, Globalisation and the Provinces of China: The Role of Domestic Versus International Trade Integration, *Journal of Chinese Economic and Business Studies* 8(3): 227-252.
- 11 Chakravorty, S. and S.V. Lall, 2007, *Made in India. The Economic Geography and Political Economy of Industrialisation*, New Delhi: Oxford University Press
- 12 Supra Note 9
- 13 An issue is whether India should be analysed at the state level or with more disaggregated data, e.g. at the district or even municipality level. According to some recent research, more disaggregated data are necessary in order to capture e.g. rural-urban agglomeration but for Europe, country-level data are appropriate for capturing broader economic geography patterns (Brakman et al. 2009). The analysis in Melchior (2010a) is therefore undertaken at the state-level.
- 14 Supra Note 9
- 15 Supra Note 9

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