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Trade reform and industrial performance: a survey

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Abstract
Under structural adjustment programme trade liberalization has been given a prominent role with the expectation that it would promote exports and productivity, along the line of comparative advantages; also it would reduce monopolistic conditions in domestic markets and reduce the price markups. Number of literatures attempt to test the reform induced performance across industries. The purpose of this paper is to explore some general conclusions on this field of trade policy and industrial performance is discussed next. Empirical evidence based on developing countries are reviewed. Finally, the lessons drawn from the literature are focused.

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TRADE REFORM AND INDUSTRIAL PERFORMANCE: A SURVEY

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Introduction

Under structural adjustment programme trade liberalization has been given a prominent role with the expectation that it would promote exports and productivity along the line of comparative advantages; also it would reduce monopolistic conditions in the domestic markets and reduce the price mark-ups. Number of literatures attempt to test the reform induced performance across industries in developing countries. This paper examines the available literature for the purpose of exploring some general conclusions on this field of study. A link between trade policy and industrial performance is discussed next. Secondly, empirical evidence based on developing countries are reviewed. Finally, the lessons drawn from the literature are focused.

Linking Trade Policy and Industrial Performance

Protection creates: first direct costs by allowing misallocation of resources in production and the reduction in consumer welfare mainly because of misalignment of domestic and foreign prices, and Secondly indirect costs by allowing unproductive activities associated with protection such as smuggling, evading tariffs and under-capacity utilization. This again has led to discriminatory impacts and inefficiency on various branches of manufacturing sector. Therefore, it is often argued that alignment of domestic and foreign prices can generate industrial efficiency by increasing importing capacity, reducing forced idleness of resources, eliminating allocative and X-inefficient, abolishing monopoly profits and allowing optimum resource allocation in the economy.

There can be three possible links between trade liberalisation and productivity growth. First, “Opening” encourages foreign competition and “Challenge Response” and hence affects domestic efficiency. Secondly, availability of imported inputs may lead to cost reductions partly due to improved capacity-utilization. Thirdly, expansion of output due to “Opening” reduces production costs and hence leads to better productivity growth which is known as Verdooms law.

One can see three possible links between trade liberalization and price-cost margins. First foreign competition and free entry restrain the exercise of market power by domestic firms in the domestic market. In other words import competition may weaken the collusive agreements of domestic firms and this eventually leads them to cut their prices in order to avoid their loss of market share. Secondly, foreign competition improves the productive efficiency of inefficient producers and allows them to cut their prices. Thirdly, as oligopolistic export firms tend to face great difficulties in achieving tacit collusion with importers, mainly because of differences in market environment and communication, they are forced to cut their prices to compete in the export market.

Also, there can be links between trade liberalization and trade growth. Trade liberalization eliminates restricted markets due to protection: allows domestic producers to access inputs cheaper than under the earlier protected system: allows more exports with the alignment of domestic and foreign prices.

Trade Liberalization and Manufacturing Growth

Empirical Evidence

Three major approaches have been used in empirical analysis to capture trade effects: first, static efficiency measures for individual countries such as effective rate protection (ERP) and domestic resource cost (DRC); secondly, two different types of cross-country studies, of which one compared the performance before and after liberalization (or trade policy reformers and non-reformers) and the other linked policy differences and performance; finally, single country analysis based on Structure-Conduct-Performance (SCP) approach.

Static Efficiency Measures

Considerable literature is available on ERP and DRC of individual countries: where ERP is indicated various levels of protection and resource-use efficiency are due to that, DRC went beyond that and measured the industrial efficiency on estimated shadow prices and revealed the comparative cost advantages. Balassa (1971) for seven import-substituting countries, Bhagwati and Desai (1970) and Bhagwati (1978) for Indian economy and Pack (1993) for Sub-Saharan African industry came to almost similar conclusions that protection creates costs. These static measures generally indicate unanticipated effective protections and profit incentives to selected sectors and a shelter to high-cost producers in the developing countries (weiss, 1990).

Cross-Country Comparison

Before and After (or Reformers and Non-Reformers) Approach

Michaely, Papageorgiou and Choksi (1991) used before and after approach on 17 countries and 36 substantial and long lasted liberalization named “episodes”. They found a fall in manufacturing output in the first year and then
a recovery after the second year, surpassing the pre-liberalization level in most of the episodes, especially named “strong liberalization” economy. Authors, also, found a strong correlation between trade liberalization and rapid export growth: in most cases manufacturing export growth fell for the first year after liberalization then increased more than the rate before liberalization. Although the above study approached the problem extensively, there is a causation problem with this approach and is not very meaningful. The pre-liberalization developments have had some effect on post-liberalization and it is wrong to conclude that liberalization can have caused subsequent manufacturing growth without further analysis.

Thomas and Nash (1991) employed a cross-country analysis and found a general increase in manufacturing exports among the group of trade policy reformer countries compared to non-reformers. However, the simple comparison of this nature also not very meaningful for reasons such as: first, the development pre-liberalization could have some impact on the post-liberalization experience and secondly factors other than trade policy reforms might have influenced the different performance between the groups of countries.

Linking Policy Differences

Three types of studies have been used in linking trade policy and performance: firstly, regressions which pooled a sample of countries with differences in trade policies at different periods; secondly regressions based on individual country experiences, by type of economic policy (i.e. more open or less open); finally regressions of plant level data of certain countries.

Nishimizu and Page (1991) analysed trade policy and productivity growth by incorporating the dummy variables - quantitative import restrictions and non-market allocation of resources-with growth of export demand and growth of total domestic demand, less import demand (import penetration) in a multiple regression framework. Authors found that export growth in industry was positively associated with total factor productivity growth and this was absent in import-substituting regimes that used quantitative restrictions. This study seems to be quite sensitive to slight alterations in the policy variables and to small changes in the chosen sample. The results of this type of studies may mislead in the absence of extreme care, in defining policy regimes examining the interactions among policies and their effect on growth.

Nishimizu and Robinson (1984) obtained some support for their hypotheses that: (a) a positive link between higher exports and TFP growth arising from competitive cost reducing incentives and (b) a positive link between export expansion, import liberalization and TFP growth arising from the importance of foreign exchange constraints and non-substitutable imports of intermediate inputs and capital goods. A growth decomposition measure has been used in this study to explain productivity growth in a multiple regression framework of four semi-industrialized countries: Japan, South Korea, Turkey and

Yugoslavia. The assumption that there are well defined production technologies describing all plants within an industry may not be true.

Tybout (1992) went beyond this and measured productivity growth at plant level in Chile, Colombia and Morocco. Tybout’s model revealed that output expansion not only came from productivity growth, but also that productivity change was accompanied by changes in scale or net entry. According to the influence of plant heterogeneity all three components were further decomposed in his study. They found that output growth was positively correlated with entry but, did not correlate significantly with exit of firms and higher effective protection rates were associated with large plant size, especially at the low end of the size distribution.

Structure-Conduct-Performance: Individual Countries

Theory of industrial organization has increasingly recognized the role of foreign trade in the determination of imperfect competition and industrial efficiency. The argument is that the international trade variables can have an impact on productivity, profitability, and exports through introducing changes in the structural characteristics of the domestic market.

Productivity Growth

Studies of the effect of trade reforms on productivity growth have been recent. They focussed on the link between trade and dynamic productivity growth in a multiple regression framework. This process allows them to show the explanatory portion of productivity growth across manufacturing industries due to the change in trade policy variables.

The hypothesis, that trade opening had a positive impact on manufacturing total factor productivity growth, has been tested and obtained support in the Egyptian industry (Handoussa, Nishimizu and Page 1986), Mexican industry (Weiss, 1992) and Sri Lankan industry (Weiss and Jayanthakumaran 1994). Import-substitution policies had a negative impact on total factor productivity has been tested and obtained support in Turkish industry (Krueger and Tuncer 1982) and Indian industry (Goldar 1986). Due to foreign exchange constraints and non-substitutability between imports and domestic intermediate and capital inputs, the fixed capacity level may become idle in the economy where import-substitution policy was pursued. In the Chilean economy (Condon, Corbo and de Melo 1984) and Egyptian industry (Handoussa, Nishimizu and Page 1986) this was found as an important reason for the TFP growth during their trade opening.

The hypothesis, that expansion of output results in a higher level of productivity, commonly known as Verdoorn’s law, has been widely tested. The argument behind this hypothesis is that expansion of output creates economies of scale, specialization and a favourable environment for innovation, and these factors eventually results in higher level and growth of productivity.
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The expectation is that liberalization will increase efficiency and thereby allow sufficiently greater scale of production. This hypothesis has been supported for Indian industry (Goldar 1986), Egyptian industry (Handoussa, Nishimizu and Page 1986), Mexican industry (Weiss 1991) and Sri Lankan industry (Weiss and Jayanthakumaran 1994).

Table 1
Total Factor Productivity and Trade Reform: A Summary of Empirical Tests

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Country</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krueger &amp; Tuncer</td>
<td>1982</td>
<td>Turkey</td>
<td>despite the fact that the rate of growth of TFP was about the same in public and private sectors absolute level of inputs in the public sector enterprises are much higher than in their private sector counterparts.</td>
</tr>
<tr>
<td>Nishimizu &amp; Robinson</td>
<td>1984</td>
<td>Japan, Turkey, Yugoslavia and South Korea</td>
<td>the results do not support Verdoorn's law, the hypothesis that export expansion leads to higher TFP growth through competitive incentives is supported, the hypothesis that foreign trade increase TFP growth through relaxing the foreign exchange constraints is supported.</td>
</tr>
<tr>
<td>Handoussa, Nishimizu &amp; Page</td>
<td>1986</td>
<td>Egypt</td>
<td>the results support Verdoorn's law, the hypothesis that foreign trade increase TFP growth of public sector through increasing the capacity utilization.</td>
</tr>
<tr>
<td>Goldar</td>
<td>1986</td>
<td>India</td>
<td>the results support Verdoorn's law, import substitution to change in output has a negative and significant effect on TFP growth.</td>
</tr>
<tr>
<td>Weiss</td>
<td>1992</td>
<td>Mexico</td>
<td>the results support Verdoorn's law, change in protection estimates has a negative and significant effect on labour productivity growth and a negative but not significant effect on TFP growth, change in import share has a positive but not significant effect on TFP growth.</td>
</tr>
<tr>
<td>Weiss &amp; Jayanthakumaran</td>
<td>1994</td>
<td>Sri Lanka</td>
<td>the support obtained for Verdoorn's law, change in nominal protection has a negative and significant effect on labour and TFP growth during the shorter period 1985-89.</td>
</tr>
</tbody>
</table>

Source: compiled by author.

Change in Price-Cost Margins

A number of arguments have been discussed in the empirical literature with regard to the impact of imports, exports and protections on the profitability of domestic firms in an open economy. Jacquemin, Ghellinck and Huveneers (1980) for Belgium, Katrak (1980) for India, and Amjad (1977) for Pakistan industry confirmed their hypothesis that in industries faced with significant degrees of actual import competition, the ability of domestic firms to maintain prices above average cost is reduced. Beng and Yen (1977) for Malaysian and Weiss (1991) for Mexican industry confirm their hypothesis that tariffs enable producers to reap high domestic profits.

Table 2
Price-Cost Margins and Trade Reform: a Summary of Empirical Tests

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Country</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beng &amp; Yen</td>
<td>1977</td>
<td>Malaysia</td>
<td>increase in one point in ERP ratio would increase PCM ratio by 0.004 point***, increase in one point in export-output ratio would reduce PCM ratio by 0.0049 point**, increase in one point in capital-output ratio would increase PCM ratio by 0.25 point*.</td>
</tr>
<tr>
<td>Amjad</td>
<td>1977</td>
<td>Pakistan</td>
<td>increase in one point in import competition ratio would reduce PCM ratio by 0.12 point***.</td>
</tr>
<tr>
<td>Jacquemin, Ghellinck &amp; Huveneers</td>
<td>1980</td>
<td>Belgium</td>
<td>increase in one point in rate of imports would reduce PCM ratio by 0.002 point*, increase in one point in multiplicative term variable (concentration and rates of imports) would reduce PCM ratio by 0.005 point**.</td>
</tr>
<tr>
<td>Katrak</td>
<td>1980</td>
<td>India</td>
<td>increase in one point in import intensity would reduce PCM ratio by 0.72 points*, increase in one point in export-orientation would increase PCM ratio by 0.54 point*, increase in one point in capital-intensity would increase PCM ratio by 0.21 point**.</td>
</tr>
<tr>
<td>De Melo &amp; Urata</td>
<td>1984</td>
<td>Chile</td>
<td>increase in one point in import share would increase PCM ratio by 0.05 point in the liberalized regime (1979)<em><strong>, one point increase in export share would reduce PCM ratio by 0.05 point in the liberalized regime</strong>, increase in one point in capital-output ratio would increase PCM ratio by 0.34 point</em>.</td>
</tr>
<tr>
<td>Weiss</td>
<td>1991</td>
<td>Mexico</td>
<td>increase in one point in nominal rate of protection ratio would increase the change in PCM ratio by 0.05 point after reform***.</td>
</tr>
<tr>
<td>Weiss &amp; Jayanthakumaran</td>
<td>1994</td>
<td>Sri Lanka</td>
<td>increase in one point in nominal protection ratio would reduce the change in PCM ratio by 1.16 point between 1985-89 period***.</td>
</tr>
</tbody>
</table>

*1%, **5%, and ***10% significant levels. Source: compiled by author

De Melo and Urata (1984) argue that in countries like Argentina, Sri Lanka and Uruguay there existed a lack of distribution channels at the beginning of liberalization due to the absence of import competition for a long period. A small number of oligopolistic firms are likely to be continuously engaged in both production and importing simultaneously even after reform. Also, the first importers utilize the current inelastic demand due to the shortages of
imported commodities for years by selling small amounts at high prices. According to this, one can argue that the PCM will be positively related with import share. Authors found support for their argument in Chilian manufacturing.

Weiss and Jayanthakumaran (1994) used price ratios instead of import share as a liberalization measure and obtained inverse, but weakly significant association with PCM. Authors argued that continued monopolisation of distribution, with trade liberalization, may have contributed to the slow reduction in the price ratios underlying the nominal and effective protection estimates.

One may expect positive correlation between imports and concentration, as threat of import competition is expected to induce mergers among domestic firms. As long as imports are close substitutes for domestic producers, there would be a high degree of defensive concentration of domestic producers. Contrary to this argument, there may exist a negative relationship, if inefficient producers improve their productive efficiency in response to an increase in imports.

The relationship between rate of exports, concentration and PCM is more complex. Two alternative arguments in empirical studies are:

a) there would be an inverse relationship between exports and PCM since the export market will be difficult terrain for effective collusion. Beng and Yen (1977) for Malaysian manufacturing between 1968-71, De Melo and Urata (1984) for Chilean manufacturing in 1979 and Jacquemin, Ghellinck and Huveneers (1980) for Belgium industry obtained inverse relationship based on the above argument, but the last one appeared not to be significant. Siddharthan and Dasgupta for Indian manufacturing obtained an inverse relationship testing a slightly different hypothesis, that Indian exporters did not export in response to higher profits, but were obliged to do so under governmental regulations and contracts.

b) there would be a positive relationship between exports and PCM since exporting may involve relatively greater risks and firms may attempt exporting only if the return is higher than for domestic sales. Katrak (1980) obtained a positive and significant result between exports and PCM, based on another argument, in the Indian context of an import substitution regime, that selected a number of exporting firms which received import licences and therefore lower costs, and so a higher PCM than comparable firms that did not export.

Export Growth

A few studies recently attempted to explain export growth across manufacturing sectors due to trade liberalization. Weiss (1992) related change in internal demand (domestic factors) and protection measures with branch level exports of Mexico after the major liberalization in 1985 and obtained an expected negative and significant result for both nominal rate of protection and internal demand. Weiss concluded that the relative contributions correspond to an increase in exports of 14.7 percentage points due to competitiveness, and 5.1 percentage points due to changes in internal demand. Jayanthakumaran (1994) related change in nominal protection with branch level exports of Sri Lanka between 1985-89 and obtained expected negative sign but the results are inconclusive.

Lessons for Industrial Performance

Before and after liberalization (or trade policy reformers and non-reformers) studies indicate that the stronger and speedier the liberalization, the greater the manufacturing output and export growth. However, one should be careful in interpreting the results, mainly because there is no direct evidence that liberalization causes this improvement. In the meantime, cross-country regressions relating productivity growth and policy variables seem to be sensitive to slight alterations in the policy variables and to small changes in the sample of countries chosen.

Theoretical framework of trade policy is validated by the empirical studies on trade related productivity growth across-industries. It is in the measurement problem that empirical studies differ from each other. Inconsistency in time, country and methodology put a barrier against the meaningful comparison among studies, although majority of studies indicated a positive impact. Pack (1988), Havylyishyn (1990) and Kirkpatrick (1992) agree that the focus for future research should be country specific, using disaggregated industrial sector data extending over longer time periods.

The expectation of "Challange Response" among domestic industries is to increase efficiency on the one hand, and reduce price-cost margins on the other hand. There are strong reasons to believe that the degree of concentration will reduce, following opening to trade, which implies a negative relationship between imports and price markups. However, some studies argued that opening to trade, increases "Collusive Agreements" between the domestic firms, thus implying a negative association between imports and domestic price markups. Further, some studies argued that due to monopolisation, with trade liberalization, price markups had risen rather than fallen.

The majority of studies established an inverse relationship between exports and domestic profit margins, as oligopolistic firms tend to face greater difficulties in achieving tacit collusion with importers, largely because of differences in market environment and problems of communication. The available empirical evidence indicates, that trade liberalization has some positive impact on manufacturing exports due to increase in competitiveness and internal factors.

In brief, market structure-conduct-performance type of studies approached the problem more systematically than earlier work. Further work in this tradition may lead to stronger conclusions on the effects of liberalization.
1. I wish to thank Dr. John Weiss for numerous helpful comments.

2. Theoretically production possibility frontier can be used for capturing trade effects. See for details Kirkpatrick and Weiss (1992).

3. By computing a liberalization index (a synthetic description of the experience of individual countries) for each episode intensity was derived (strong versus weak, fast versus slow). A period of six years was allowed for the dividing line between sustained, partially sustained and collapsed episodes.

4. Authors found that in South Korea selectively promoted infant industries showed superior performance following an outward-strategy. Authors suggests that a possible impact on Turkey indicates the possibility that they could have followed the Korean example of selective protection.

5. Tybout formed a simple discrete model in which he defined change in output from previous year as a function of productivity growth, changes in the average scale of operation (measured by factor use) and net entry. Then Tybout decomposed each variable by their attributes. For example, the productivity growth index reflects three influences: first the proportion of total factor use accounted for by plants that were in the industry in both the last period and the current period, second average productivity among plants and third the difference between the productivity among plants that have entered the industry in the current period and the productivity among plants that were in the industry in the last period, but exist this period.

6. Condon, Corbo and De Melo (1984) used multi sectoral general equilibrium model to approximate the likely magnitude of the sources of growth of productivity gains of whole economy during 1977-81. Most of the other studies concerned about industry and used multiple regression type analysis except Krueger and Tuncer (1982) which used simple comparison of TFP in different periods of import-substitution and export-promotion.

7. De Melo and Urata (1984) and Weiss (1992) and Weiss and Jayanthakumaran (1994) tested the reform induced PCM but, other studies nearly tested the relationship between trade policy variable and PCM.

8. De Melo and Urata (1984) found import share positively and significantly correlated with the PCM in 1979 (after liberalization), but not significantly in 1967 (before liberalization).

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DYNAMIC LINKAGES BETWEEN EXCHANGE RATE AND FOREIGN DEBT: THE CASES OF INDIA AND NEPAL

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I. Introduction

There is a vast literature in international economics and finance investigating the determination of exchange rates by using the purchasing power parity (PPP) theory, interest rate parity (IRP) theory, portfolio balance theory, and absorption approach in the contexts of both developed and developing countries (Faruque, 1995; Zhou, 1995; Taylor, 1995). But an extremely inadequate attention has been paid to the dynamics between foreign debts and exchange rates in less developed countries (LDCs). The effects of foreign debt on exchange rates vary depending on whether the investigation is carried in a static or a dynamic framework. In a static context, foreign debt implies capital inflows. This, in turn, is likely to lead to an appreciation of domestic currency against foreign currencies due to an accretion of surplus in the country’s capital account and through an asset equilibrium in this account. Again, this is at odds with the view that current account deficits presage the external debt and hence it ought to cause a depreciation on the domestic currency (Ajai and Choi, 1993). In a dynamic setting, a deficit in the current account causes an increase in the country’s external debt or a reduction in net foreign assets held by domestic residents. This is likely to have a negative effect on the external value of the domestic currency (Dornbusch, 1976, 1980; Dornbusch and Fischer, 1980; Frankel, 1983; Kouri, 1976; Khan and Haque, 1985; and Sachs, 1986). Hence, the effects of external debt of a less developed country on its exchange rate is ambiguous. It may also be argued that a depreciation of home currency against U.S. dollar increases the external debt service-