Economic or technical growth: An analysis of Pakistan’s experience in the international scenario

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Abstract: Unit values (prices) of exports generally declined during 1980-81 to 1989-90 (Period-I) but improved in Period-II (1990-1991 to 2004-2005) mainly due to increased export of value-added goods. However, response of change in export-quantum appeared to be proportionately more than that noted for export prices. Import prices also behaved in a way almost similar to that noted for exports, but improved at a rate much faster than the counterparts, which had implications for terms of trade (TOT) disfavouring Pakistan. The TOTs were generally unfavourable, but value-added exports helped to maintain a reasonable balance between prices received for exports and those paid for the imports. Because of declining import prices, a substantial growth in quantum of imported goods was noted in Period-I, such that the respective demand curves seemed to be more than unitary elastic which continued in Period-II as well. On the whole, growth of imports in both time periods had been more than five per cent per annum, while average annual growth of exports was about eight and three per cent for Periods-I and II, respectively.

Key Words: Exports, Imports, Terms of Trade (TOT), Technical Growth

INTRODUCTION

Productivity enhancement is often taken as a measure of economic development and, in Pakistan’s context, major policy focus was made at a technical break-through for the agricultural [Government of Pakistan (1960)] and manufactured goods [Government of Pakistan (1984)], which was achieved. On the other hand, the economic theory requires that the production of a commodity needs to be guided by the principle of equality between the marginal revenue (output price) and marginal cost (cost per unit of output) for the maximization of net revenue and bringing in optimality in the production process. Thus, controversy between economic and technical growth is a widely debated policy issue in the literature [(Government of Pakistan (2009 and 2011))] to gauge the level of economic development. It is generally believed that a massive increase in the production of output and services leads to economic prosperity [(Asian Development Bank (1987) and Government of Punjab (1996) and (1997)]. The Poverty Reduction Strategy Paper (PRSP) [(Government of Pakistan (2003)], which is a continuation of the Interim PRSP (IPRSP) [Government of Pakistan (2001)], focused on revival of economic growth in stead of focusing at a technical one aiming at maximization of output without a reference to the economic optimality.

The international and domestic markets are progressively becoming more competitive due to change in taste, quality consciousness and demand for diversified products [Wilson (2004)]. The textile sector is the largest one in Pakistan; it accounts for 46 per cent of output from domestic manufacturing industries, 65 per cent of export earnings [Farooq (2004)] and is highly diversified [Ellahi (2005b)]. Thus, Pakistan mainly sells textiles to and buys a multitude of manufactured items from the international market, which has implications for its economy, such as a huge trade deficit and borrowing foreign exchange to finance the mounting import bills, and balance of trade with trading partners.

In earlier studies [Ellahi (2004), (2005a) and (2005b)], empirical analysis showed that a break-through in production of major field crops and value added commodities had been achieved. However, the traditional approach to achieve targeted export earnings, through increased output has led to distort the quantity-price relationship underlying the principles of economic optimality, i.e. not to produce beyond the point where the value of marginal product equals the marginal cost. Previous studies conducted by the author were mainly focused on exports, which is one part of Pakistan’s
international trade. Hence, this study is an attempt to ascertain, in totality, quantum-price relationships for both exports from and imports into the country in temporal context. Further, analyzing the terms of trade (TOT) provides an insight into Pakistan’s fitting into the global economy and can facilitate formulation of policies to integrate domestic production with the international economic environment.

**Data and Analytical Framework**

Data on group-wise unit value indices for Pakistan’s imports and exports, worked out by the Federal Bureau of Statistics (FBS) in the temporal context, are available in the Economic Survey [(Government of Pakistan (2005a)]. These indices are based on unit values worked out in Pak Rupees (PRS), which were deflated by the corresponding index for appreciation in US Dollar (US$) vis-a-vis PRS to assess real change in the variables concerned over time. The same for quantities are also compiled by the FBS and partially available on the web and the rest were obtained from its Karachi Regional Office [(Government of Pakistan (2005b)]. As discussed in Ellahi (2005a), 1980-1981 was taken as base and 2004-05 as terminal year. Most of the policies to promote value addition in cotton, sugarcane and rice were introduced in early 1980s by the military regime of General M. Zia-ul-Haq as a major part of the Sixth Five Years Plan [(Government of Pakistan (1984)] to enhance foreign exchange earnings and provide income and employment for the growing labour force [Ellahi (2004) and Ellahi (2005b)]. This was followed by another one, such as altering the measure of certain textiles from a meter/number basis to tonnage impacting on commodity prices, in early 1990s by the political government following the military regime. Thus, in view of the track followed by economic policies, two eras were identified, i.e. the first (Period-I; 1980-1981 to 1989-1990) and the second (Period-II; 1990-1991 to 2004-2005).

Empirical analysis included examining change over time in different commodity groups, such as food, beverages, inedible crude materials, minerals and fuels, chemicals, manufactured goods and machinery, with respect to the criteria, including quantities traded and unit values (prices). In addition, indices for the TOTs, i.e. the ratio between unit value of exports to that of imports, are also available and analysed to assess change over time in export prices vis-a-vis those for imports. It may be noted that edible oil is on the list of imports and not exported from Pakistan, but is a part of the TOT indices warranting that results based thereon need to be interpreted carefully. The response of quantity with respect to change in unit value (price) also needs to be examined, which was accomplished by taking a ratio of export/import quantum of the commodity groups to their respective unit values. Indices of these ratios were then used to estimate the respective growth rates.

The temporal changes were measured by estimating average annual growth rates from indices (1980-1981 = 100 and 1990-91 = 100) for selected commodity groups by using equation:

\[
P_n/P_0 = (1+r)^n,
\]

Where,

\[
P_0 = \text{value of a variable in the base year (0)},
\]

\[
P_n = \text{value of a variable in the terminal year (n), and}
\]

\[
r = \text{average annual growth rate}.
\]

Taking a natural log of equation (1) and replacing 'n' by 't', time trend (years 0 to 9 in Period-I and 0 to 14 in Period-II) gives:

\[
\ln(P_t/P_0) = t\ln(1+r) + \varepsilon_t,
\]

where, \(\varepsilon_t\) is an error term with conventional properties.

**Empirical Analysis**

Data on quantity-price indices for exports and imports of the mentioned commodity groups were used for empirical analyses, based on average annual growth rates, which are presented in sections 3.1 and 3.2, respectively.

**Growth in Exports**

The period-wise estimated growth rates per annum compound in unit values for and quantum of various commodity groups exported are set out in Table 1. Comparative growth in quantum vis-a-vis that for unit value, i.e., change in the former per unit change in the latter, is also worked out. In general, unit values exhibited a declining trend in Period-I and
its converse was true in Period-II. Unit value for all exports experienced a decline of 2.65 per cent per annum, while the lowest decline of about one per cent per annum was noted for manufactured exports in Period-I. However, overall export price improved in Period-II and it registered an average annual growth rate of about one per cent as compared with a substantial decline in the preceding one. Further, overall growth in unit value being close to those for manufactured goods/items and chemicals highlights the significance of a value-addition strategy to survive in the international economy from the view points of providing income and employment to the growing labour force and to earn foreign exchange to finance the mounting import bills [Ellahi (2005b) and Government of Pakistan (1960), (1965) and (1984)]. In Period-I, most of commodity groups showed a growth rate, in quantum vis-a-vis unit value, of about 11 to 18 per cent per annum compound, which may also be noticed from Figure 1. In Period-II, growth rate generally narrowed down to vary from about 2 to 4 per cent per annum. In totality, growth response in quantum exceeded that pertaining to respective export prices exhibiting supply curve being more than unitary elastic and of a “technical nature” instead of an economic one.

**Growth in Imports and Terms of Trade**

Average annual growth rates and related results in respect of imports, as presented in the case of exports, are provided in Table 2. As seen from temporal data depicted in Figure 2, import prices, in Period-I, generally declined and those for manufactured goods/items and machinery exhibited increasing trend, which remained so and stable in Period-II as well. Again these inferences accord with those discussed above for exports. The aggregate unit value for all imports declined, but at a rate almost half of that for overall exports implying that value addition process in Pakistan is moving at a rate slower than that in its trading partners. In Period-II, import prices for most of the commodity groups, especially those of

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**Table 1. Growth in Quantum and Unit Values (US$) of Exports**

<table>
<thead>
<tr>
<th>Commodity groups</th>
<th>Unit Value (Price)</th>
<th>Quantum</th>
<th>Quantum per Value Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Period-I</td>
<td>Period-II</td>
<td>Period-I</td>
</tr>
<tr>
<td>Food and live animals</td>
<td>-3.60</td>
<td>0.26</td>
<td>-0.33</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>0.64</td>
<td>-4.04</td>
<td>6.72</td>
</tr>
<tr>
<td>Crude materials (inedible)</td>
<td>-5.62</td>
<td>-2.18</td>
<td>5.45</td>
</tr>
<tr>
<td>Minerals, fuels &amp; lubricants</td>
<td>-10.30</td>
<td>2.35</td>
<td>-5.18</td>
</tr>
<tr>
<td>Chemicals</td>
<td>-2.37</td>
<td>1.24</td>
<td>9.29</td>
</tr>
<tr>
<td>Manufactured goods</td>
<td>-0.97</td>
<td>1.31</td>
<td>12.00</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>-5.13</td>
<td>4.26</td>
<td>12.35</td>
</tr>
<tr>
<td>Miscell. manufactured items</td>
<td>0.53</td>
<td>1.60</td>
<td>17.08</td>
</tr>
<tr>
<td>All groups</td>
<td>-2.65</td>
<td>0.99</td>
<td>8.34</td>
</tr>
</tbody>
</table>

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**Table 2. Growth in Quantum and Unit Values (US$) of Imports and TOTs**

<table>
<thead>
<tr>
<th>Commodity groups</th>
<th>Unit Value (Price)</th>
<th>Quantum</th>
<th>Quantum/Value Unit</th>
<th>Terms of trade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Period-I</td>
<td>Period-II</td>
<td>Period-I</td>
<td>Period-II</td>
</tr>
<tr>
<td>Food and live animals</td>
<td>-2.82</td>
<td>0.82</td>
<td>10.54</td>
<td>3.46</td>
</tr>
<tr>
<td>Beverages and tobacco</td>
<td>-4.46</td>
<td>8.38</td>
<td>4.98</td>
<td>0.93</td>
</tr>
<tr>
<td>Crude materials (inedible)</td>
<td>-3.79</td>
<td>-0.89</td>
<td>2.27</td>
<td>9.90</td>
</tr>
<tr>
<td>Minerals, fuels &amp; lubricants</td>
<td>-8.34</td>
<td>-0.80</td>
<td>3.61</td>
<td>5.89</td>
</tr>
<tr>
<td>Chemicals</td>
<td>-0.68</td>
<td>0.13</td>
<td>4.43</td>
<td>7.62</td>
</tr>
<tr>
<td>Edible oils and waxes</td>
<td>-3.24</td>
<td>2.05</td>
<td>9.34</td>
<td>1.28</td>
</tr>
<tr>
<td>Manufactured goods</td>
<td>0.87</td>
<td>0.56</td>
<td>-1.56</td>
<td>3.50</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>8.32</td>
<td>5.12</td>
<td>11.64</td>
<td>6.05</td>
</tr>
<tr>
<td>Miscell. manufactured items</td>
<td>1.78</td>
<td>2.27</td>
<td>11.85</td>
<td>4.06</td>
</tr>
<tr>
<td>All groups</td>
<td>-1.40</td>
<td>1.78</td>
<td>5.67</td>
<td>5.94</td>
</tr>
</tbody>
</table>
Figure 1: Item-Wise Indices for Export Quantity and Unit Values in Time Periods I and II
Figure 2. Item-Wise Indices for Import Quantity and Unit Values in Time Periods I and II
beverages and tobacco, went up proportionately more than export prices, which has implications for TOT being unfavourable to Pakistan. It also appears that because of declining import prices, a substantial growth in quantum of imported goods was noted in Period-I, such that the respective demand curves seemed to be more than unitary elastic which continued in Period-II as well. The exceptions from this observation were machinery and equipment in Period I and beverages and manufactured goods in Period-II. On the whole, growth of imports in both time periods had been more than five per cent per annum compound.

Empirical results concerning TOTs are also shown in Table 2. The commodity-wise TOTs being generally negative and the overall close to that for imports in Period-I are logical in view of discussion presented above. However, the worst TOT in respect of machinery and equipment showed that Pakistan lagged far behind its trading partners in the field of mechanics in Period-I, but improved substantially in Period-II. Further, a considerable break-through was made by minerals, chemicals and manufactured goods, but still TOTs were unfavourable mainly due to beverages and tobacco.

**To Sum up for Policy Recommendations**

Pakistan's export business has been predominantly quantum-oriented and heavily focused on manufactured goods, especially in Period-I, and pushing its supplies in a more elastic manner. The same is the case in respect of demand for imported goods. At the same time, a great deal of inter-group variation is evident from Figures 1 and 2. Increase in overall unit value for both exports and imports took place in Period-II, which was instrumented mainly by the manufactured goods, faster for the latter as compared with the former and turning overall TOT unfavourable for Pakistan. This provides an evidence to the effect that growth process in Pakistan have been of a “technical nature” instead of being tailored precisely in accordance with economic principles (see section 1).

In essence, export-import baskets need to be rationalized according to economic principles, such as equality between marginal revenue and marginal cost within domestic economy and those involving comparative cost and advantage in the international context. In case of exports, potential of the textile sector in terms of value addition and product diversification seemed to have gone beyond the economic limits in 1990s. Therefore, the burden for additional earnings needs to be shifted to other sectors for Pakistan's survival in the global economic environment. The potential candidates in this respect are fruits, vegetables [(Government of Pakistan(1984) and livestock products (Ellahi, et al. (2012)) which may be processed and added to the export list keeping in view the principles of economic optimality as explained in section 1 and regulatory framework of the international market.

**REFERENCES**


Government of Pakistan (1965), the Third Five Year Plan 1965-70, Planning Commission, Islamabad.