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Value Addition Through Textiles in Pakistan: A Critical Analysis

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ABSTRACT

Value addition through textile industry plays a vital role to limit poverty going out of proportion by promoting exports in the wake of dynamically changing global scenario and declining prices for primary commodities. The value addition through yarn and thread, cloth and ready made garments accounts for a major share of cotton-based export value, while textile made-ups, furnishing items, tarpaulin and canvas, and bags and sacks have an edge in export prices and require adjustments in production and export quantum. This study was carried out to rationalize a methodology for data compilation and framework for analysis followed by empirical analysis. A summary of salient observations is finally considered for policy recommendations.

Key Words: Value addition; Textiles; Pakistan; Critical analysis

INTRODUCTION

In earlier studies (Ellahi, 2003; 2005), an empirical analysis of value addition covering a limited textile items was carried out in relation to the poverty issues. It was noted that a considerable value addition took place through textile industry and it played a vital role to limit poverty going out of proportion by promoting exports in the wake of dynamically changing global scenario and declining prices for primary commodities. However, empirical analysis showed that export of cotton waste, having a *microscopic* price, went up dis-proportionately as compared with refined products, such as yarn, thread and cloth owing to technical or managerial inefficiencies. It was also noted that a heavy reliance on traditional exports, to meet targets set for export earnings, distorts the quantum-price relationships. Thus, direction of overall production process needs adjustment to incorporate non-traditional items in the list of exports. This requires extending scope of the instant study to cover all commodities using cotton as a sole raw material to study the same issue in a broad perspective.

The list of value added (VA) export commodities kept on expanding since 1979-80 in accordance with their demand in the international market. Commodity-wise export data were not consistently available for the entire study period (1979-80 to 2003-2004). Further, policy changes and shift over from counted to weight-oriented measures were other issues to be dealt with for a consistent compilation of data. Thus, a great deal of aggregations and adjustments in export quantum and value were inevitable.

In view of above, this study was carried out to rationalize a methodology for data compilation and framework for analysis

METHODOLOGY

Data and analytical framework. Data on quantity, price and value in Pak Rupees (PRS) of lint and VA commodities are available in the Economic Survey 2003-04 (Government of Pakistan, 2004a) and the Foreign Trade Statistics of Pakistan 2003-04 (Government of Pakistan, 2004b). Most of these main items include a wide variety of goods, with a tremendous variation in year-wise export quantities, units of measurement and prices. Keeping in view the utility and nature, export items were grouped into 15 broad commodity groups, which were further sub-divided into two sets in accordance with units of measurement, i.e. one each measured in weight and number of dozens, to facilitate empirical analysis. The commodities/groups included in the 1st group were lint, yarn and thread, cloth, bed-ware, towels, tents, tarpaulin and canvas, bags and sacks, miscellaneous (technical and sports items and garment materials) goods and waste. The 2nd group included ready made garments (RMGs), hosiery, textile made-ups, kitchen-bath utilities and furnishing items. Cloth, despite being measured in square meters (Sq.m.), were included in the 1st group for analytical convenience. The export earnings for each year, available in PRS, were converted into US Dollars (US$) by using respective exchange parities. Export prices (US$) were estimated by dividing overall earnings by quantum of the respective item.

In the recent past of Pakistan's economic history, two eras may be identified from the point view of economic and related policies, i.e. the 1st (Period-I; 1979–80 to 1988–89) and the 2nd (Period-II; 1989–90 to 2003–04). Most of the policies to promote value addition and transform Pakistan's economy to accord with changes in the global economic environment were introduced in early 1980s and followed by another package in 1989-90. The latter one mainly involved change in units of measurement from dozens to metric tones (MT) for bed-ware and household utilities or both measuring units to continue simultaneously. Thus, 1979-80 and 1989-90 were proposed to be taken as a reference points for Periods I and II ending in 1988-89 and 2003-04, respectively.

Empirical analysis included examining over-time change in different commodity groups with respect to selected criteria, such as export quantities, prices and values

(export earnings). The temporal changes were measured by estimating average annual growth rates from the indices (1979-80 = 100 and 1989-90 = 100) of selected commodity groups, which are presented in Table II. The contribution of quantity and price in value also merits to be examined. A ratio between growth rates of quantity and export value provides a measure to assess the same. If this ratio is unity (1) or greater than that, price change is zero (0) or less than that (< 0), respectively, and growth in value is solely due to increased quantity. Ignoring negative sign, a ratio of 0.5 indicates that contribution of quantity and price, leading to a given change in value, is equal, while the ratio ranging between 0.5 and 1 indicates a relatively greater increase in quantity than price and that above 0 to below 0.5 shows otherwise. A ratio bearing a negative signs shows that price effect is more than that of quantity. For instance, a negative growth rate (< 0) for value, despite increase in quantity, results from a proportionately greater decline in price, while a higher value and declining quantity shows a price hike offsetting effect of the former.

Actual values and physical quantities of selected variables in terms of said criteria, for Periods-I and II, also merit a comparison to assess the real impacts. Standardized values, i.e. achievement in Period-II as per one unit (1) of the same in Period-I, of each variable with respect to the said criteria were also worked out to examine period-wise performance. Change in units of measurement, export quantum and prices, made it almost impracticable to synchronize and assess period-wise changes and temporal variations for affected commodity groups. Therefore, to bridge an inter-period gap, the base year quantum and price of Period-II were worked back to become terminal values for Period-I using respective growth rates for the former as discount factors. In case of different measuring units being used simultaneously, the ultimate indices were obtained from the original ones by using respective export earnings as weighting factors for each year. This method was also used to convert two sets of prices into a single measure, if relevant and required for analytical purposes.

Average annual growth rates were estimated from the said indices by using equation:

$$P_n/P_0 = (1+r)^n, \quad (1)$$

Where,

P_0 = value of a variable in the base year (0),

P_n = value of a variable in the terminal year (n), and

r = 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:

$$Ln(P_t/P_0) = tln(1+r) + \varepsilon_t, \quad (2)$$

where,

ε_t, is an error term with conventional properties.

Empirical analysis. Data on export quantities, prices and values (US$), of 15 commodity groups (available with the author) were used for empirical analysis.

An overview of VA exports. The estimated average annual growth rates for an overall empirical analysis of each commodity group are set out in Table I separately for Periods I and II. It may be noted that average annual growth in quantity of kitchen-bath utilities in Period-I was an outlier and need to be interpreted carefully. Hosiery exports commenced in Period-II and its performance was not available for Period-I.

Despite declining lint prices (at more than 3% per annum) in both time periods, its export remained alive in Period-I but experienced drastic decline in Period-II and that of VA goods picked up accordingly. Average growth in value of yarn and thread was almost 10 and 3% in Periods-I and II, respectively, due to increased quantum under a stable price regime. However, RMGs and textile made-ups gave impressive scenes. In cases of former, growth in quantity, price and value turned out to be balanced and rational from economic point of view in both time Periods. The latter commodity showed clear signs of movement from quantum-dominated scene, in Period-I, to a rational scenario, in Period-II, as evident from quantity-value ratio. This tendency was noted in respect of cloth and to some extent in case of tents and kitchen-bath utilities as well. The furnishing items made an impressive contribution to value in Periods-I & II, which had been somewhat quantity-oriented, but a reasonable growth in prices showed signs of economic health. The case of hosiery goods is an exception to all cases discussed so far, as a considerable rise in price (Period-II only) was met with a marginal growth in value because quantity exported experienced a drastic reduction.

Bed-ware, towels, and miscellaneous items accounted for a substantial part of export value. However, they were quantum-oriented which showed a considerable increase in Period-II as compared with Period-I. Tarpaulin and canvas and waste showed exceptional performance. For instance, declining value in case of former, in both time frames, was on account of overwhelming decline in quantity. On the other hand, quantum-dominated export of waste led to a substantial growth in value despite declining prices in Periods-I and II. The case of bags and sacks was very interesting as a marginal price decline in Period-I led to a drastic slash in quantum growth, while a substantial price rise in Period-II resulted into a nominal growth in quantity exported. Thus, supply of this commodity in export market seems to be price inelastic.

To examine economic significance of growth rates discussed above, actual values of the three criteria in respect of various commodity groups are given in Table II for a period-wise inter-group comparison. Standardized form (given in parentheses) of the same, in time Periods I and II, are also shown in the Table II to examine period-wise performance of each commodity group with respect to the said criteria.

Mixed trends were noted in different export items with respect to the selected criteria. Lint exports are at the verge of disappearing from the list of export items. A buoyant

Table I. Commodity-Wise Growth Rates in Quantity, Price and Value in % per annum

Commodity	Period-I			Period-II		
	Quantity	Price	Value	Quantity	Price	Value
i) Lint	9.24	-3.87	5.02(1.84)	-16.77	-3.09	-19.34(0.87)
ii) Yarn & thread	9.79	0.05	9.84(0.99)	3.17	-0.15	3.01(1.05)
iii) Cloth	4.73	1.95	6.77(0.70)	4.81	3.24	8.20(0.59)
iv) Bed ware	24.31	10.47	37.32(0.65)	15.90	1.16	14.18(1.12)
v) Towels	17.01	1.43	18.68(0.91)	6.21	0.02	6.23(1.00)
vi) Tents	8.91	-0.85	7.98(1.12)	7.89	1.51	9.52(0.83)
vii) Tarpaulin & canvas	-1.15	-2.09	-3.22(0.36)	-5.57	4.38	-1.43(3.90)
viii) Bags and sacks	-7.64	-0.20	-7.83(0.98)	0.65	3.23	3.91(0.17)
ix) Miscellaneous items	30.25	5.19	37.00(0.82)	15.67	5.15	21.62(0.72)
x) Waste	47.88	-3.55	42.62(1.12)	7.67	-3.43	3.96(1.94)
xi) RMGs	14.38	9.14	24.84(0.58)	4.58	4.84	9.64(0.48)
xii) Hosiery	-	-	-	-3.19	3.99	0.67(-4.73)
xiii) Textile made-ups	16.18	-3.10	12.58(1.29)	11.63	9.53	22.26(0.52)
xiv) Kitchen-bath utilities	111.27	2.36	75.73(1.47)	9.25	0.64	9.72(0.95)
xv) Furnishing items	14.73	4.11	19.45(0.76)	28.07	9.33	34.18(0.82)
Total			11.26			6.19

Note: Figures in parentheses are the ratios of growth in quantity as per unit growth in value.

Table II. Actual and Comparative Volumes of Different Variables in Time Periods I and II

Commodity/ Quantity Unit	Quantity		Price (US$ per MT/Sq.m./Dz.)		Value (US$ Million)	
	Period-I	Period-II	Period-I	Period-II	Period-I	Period-II
i) Lint *'000' MT*	556.2(1)	22.6(0.04)	936.0(1)	972(1.0)	520.6(1)	22.0(0.04)
ii)Yarn & thread "	235.9(1)	585.2(2.5)	2098.7(1)	2170.9(1.0)	495.1(1)	1270.3(2.6)
iii)Cloth *Mill.Sq.m.*	827.3(1)	1964.3(2.4)	0.53(1)	0.86(1.6)	439.7(1)	1686.1(3.8)
iv)Bed ware *'000' MT*	25.0(1)	229.1(9.2)	5085.4(1)	6044.4(1.2)	209.5(1)	958.7(4.6)
v)Towels "	29.9(1)	75.0(2.5)	4131.1(1)	4033.6(1.0)	123.7(1)	302.7(2.5)
vi)Tents "	16.3(1)	22.7(1.4)	1970.1(1)	2475.7(1.3)	32.1(1)	56.1(1.8)
vii)Tarpaulin & canvas "	6.3(1)	2.6(0.4)	1831.5(1)	3234.8(1.8)	11.6(1)	8.3(0.7)
viii) Bags and sacks "	3.9(1)	4.8(1.2)	2575.0(1)	4805.5(1.9)	10.2(1)	22.9(2.3)
ix) Miscellaneous items "	2.5(1)	11.1(4.5)	3045.0(1)	4132.3(1.4)	7.5(1)	45.8(6.2)
x) Waste "	34.5(1)	95.8(2.8)	559.0(1)	411.9(0.7)	19.3(1)	48.0(2.5)
xi) RMGs *Mill. Dzs.*	15.0(1)	47.5(3.2)	27.0(1)	45.5(1.7)	621.3(1)	2626.9(4.2)
xii) Hosiery "	NA	0.9(NA)	NA	14.8(NA)	NA	14(NA)
xiii) Textile made-ups "	1.0(1)	4.0(4.2)	5.85(1)	24.71(4.2)	5.6(1)	99.3(17.8)
xiv) Kitchen-bath utilities "	23.3(1)	87.7(3.8)	2.2(1)	2.3(1.1)	102.7(1)	196.5(1.9)
xv) Furnishing items "	2.3(1)	16.0(7.0)	4.0(1)	31.2(7.8)	9.2(1)	275.3(29.9)
Total Value (US$ Million)	-	-	-	-	2321(1)	6470(2.8)

Note: a) Values for the two time periods were worked out using estimated growth rates and actual starting values for their respective base years; b) Figures in parentheses are standardized to make intra-variable comparison of Period-II by considering respective value for Period-I as unity; NA stands for not applicable.

Table III. Growth Rates and Quantum of Aggregate Value Added Commodities and Waste

Quantity and Units	Growth rate (% per annum)		Quantity[b]		Export values[b]		Prices (US$ per unit)	
	Period-I	Period-II	Period-I	Period-II	Period-I	Period-II	Period-I	Period-II
i) VA (Mill. Dzns.)	10.66(17.53)[a]	5.84(9.35)[a]	117.35(1)[c]	291.32(2.48)	1112(1)[c]	4025(3.62)	9.5(1)[c]	13.8(1.46)
ii) VA (000 MTs)	9.44(9.93)	4.65(6.21)	297.42(1)	869.05(2.92)	687(1)	2714(3.95)	2309(1)	3123(1.35)
iii) Waste(000 MTs)	47.81(42.63)	7.67(3.96)	34.36(1)	123.19(3.59)	19(1)	48(2.49)	562(1)	389(0.69)
iv) Waste (MTs)								
a) per 000 Dzn of VA	33.57	1.73	0.29(1)	0.42(1.44)	-	-	-	-
b) per MT of VA	35.07	2.89	0.12(1)	0.14(1.23)	-	-	-	-

Note: a) Figures in parentheses are average annual growth rates in export values; b) Values for the two time periods were worked out using estimated growth rates; Figures in parentheses are standardized export quantities and values for Period-II by considering their counterparts in Period-I as base (unity).

picture emerged for furnishing goods, textile made-ups and miscellaneous commodities in Period-II as compared with Period-I with respect to all the selected criteria. In case of tarpaulin and canvas, export price was favourable but diminishing export quantum (in Period-II viz-a-viz Period-I) led to a substantial decline in its value. Yarn and thread, towels and waste showed almost similar trend, i.e. increased export earnings solely due to increased quantum in Period-II as compared with Period-I. Most of the commodities, such as cloth, bed-ware, RMGs, tents and bags and sacks, showed moderate increases in quantum, prices and export earnings. On the whole, RMGs, cloth and yarn and thread accounted for about 85% of total value of exports. In totality, export value went up almost three-fold in Period-II as compared with that in Period-I. This buoyant achievement is not exclusively limited to Period-II, but an outcome of the Policy Packages incorporated in the 2nd and 3rd Five Year Plans (1960 to 1970) and the 6th Five Year Plan (1983 to 1988).

Overtime analysis. Year-wise indices showing quantity-price relationships are reflected in Fig. 1. In Period-I, growth in quantity generally over-shadowed that in price for all commodity groups, except bags and sacks and tarpaulin and canvas. This inference was prominently noted for kitchen-bath utilities and waste. In Period-II, bed-ware, towels, kitchen-bath utilities, furnishing items, tents and waste remained with the generality of Period-I, while lint and hosiery joined the exceptions. In case of waste,

Fig. 1. Item-Wise Indices for Export Quantity and Prices in Time Periods I and II

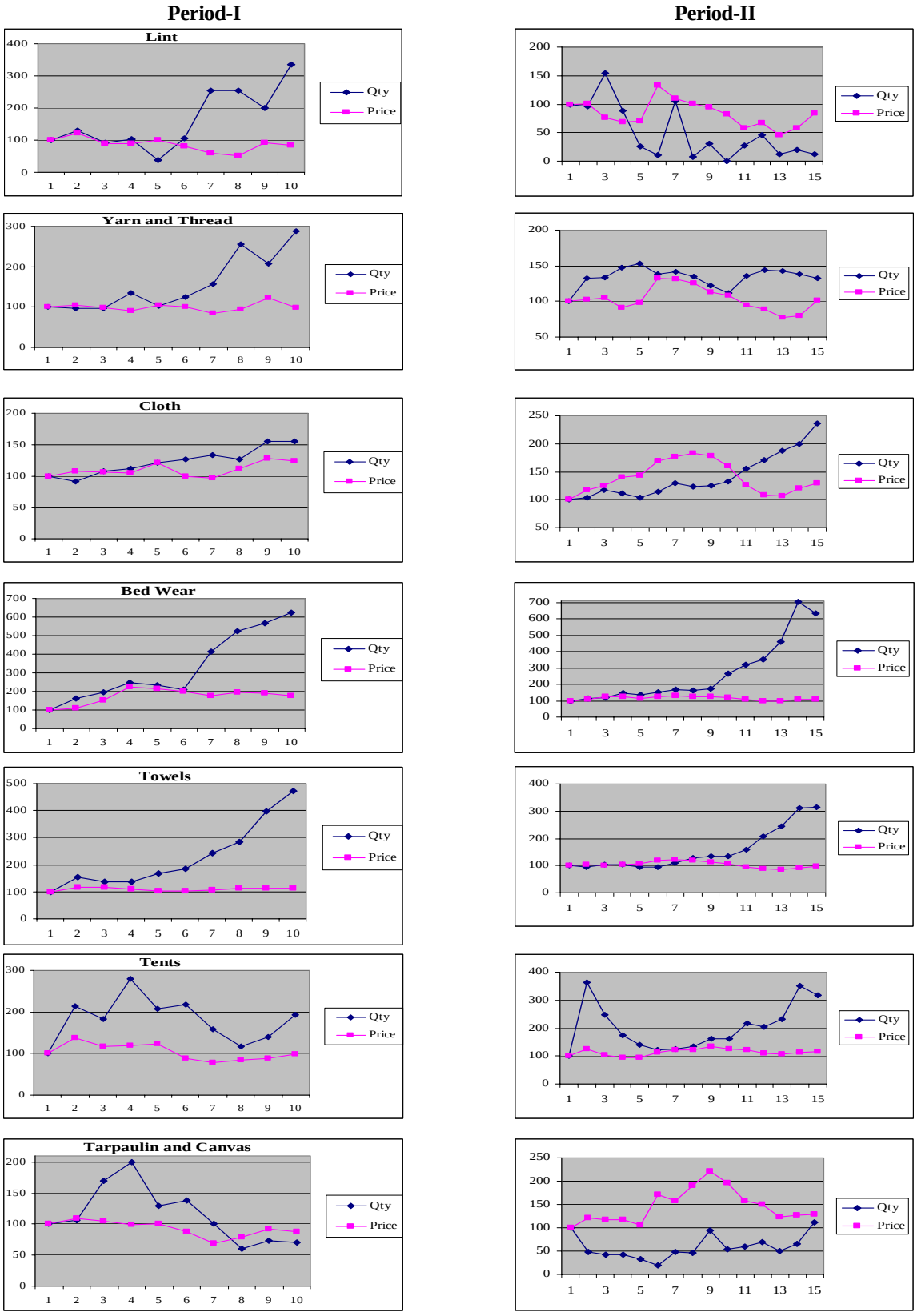


Fig. 1. (Continued….)

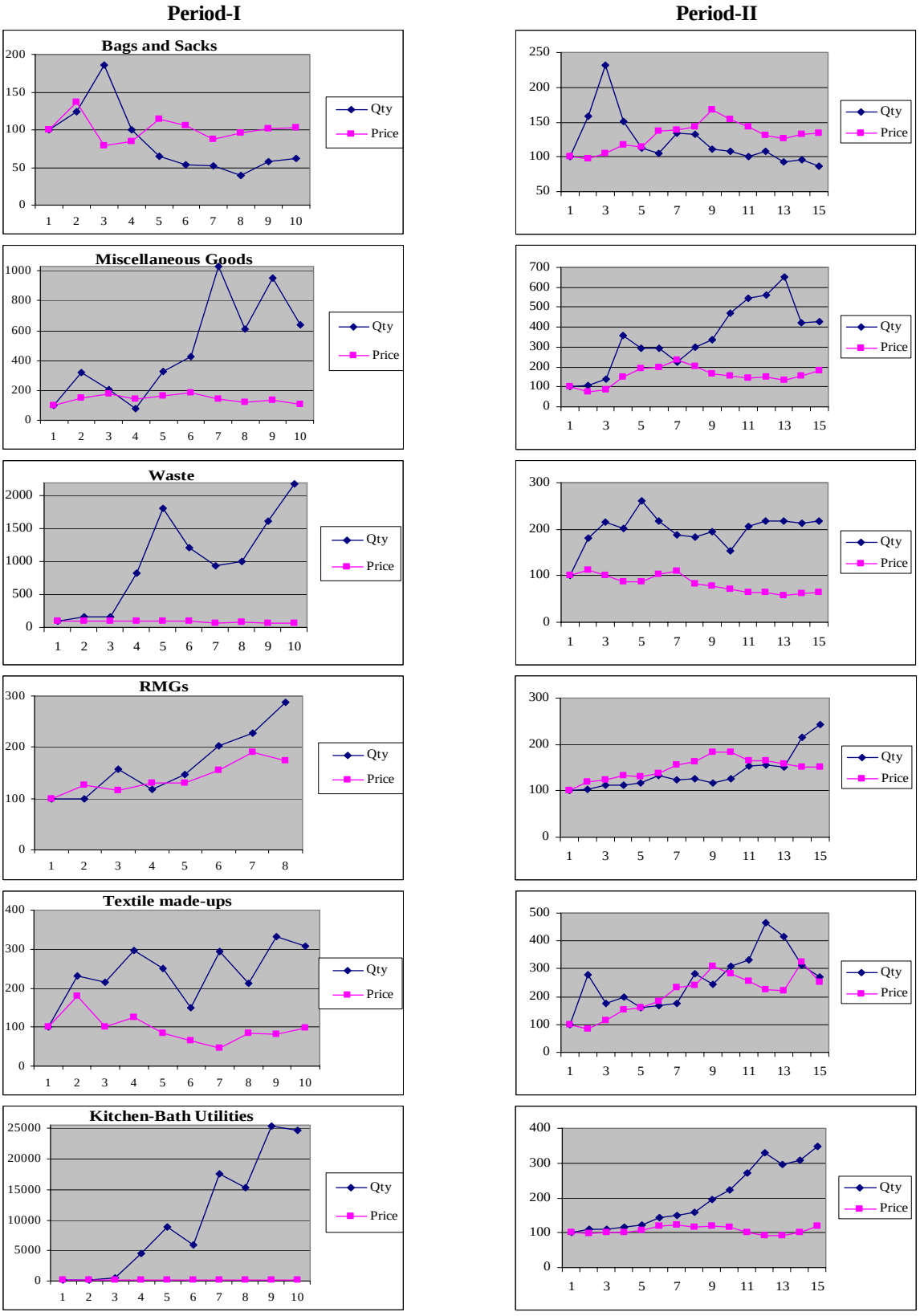
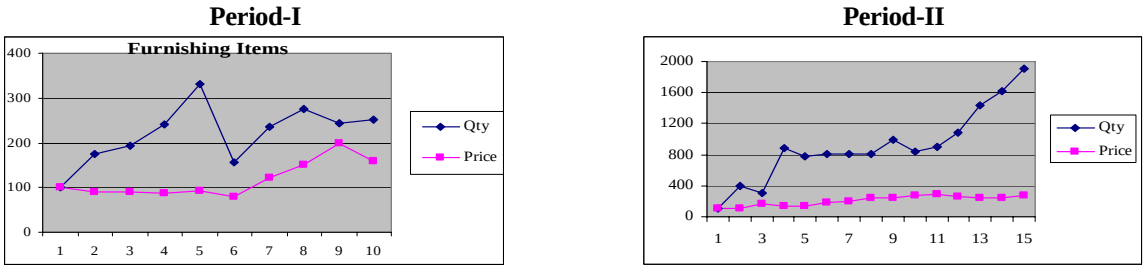


Fig. 1. (Continued……)



however, export quantum remained parallel to the horizontal axis despite consistent decline in its price, which was *microscopic* as well. Quantity-price indices for yarn and thread were noted to be parallel showing that quantity responded precisely in line with change in price. This trend was also noted for textile made-ups, but difference arose due to wider variation for this commodity than yarn and thread. In case of cloth, rise in price remained above quantitative growth, but a continuous increase in the latter received a kick-back for terminal five years of Period-II. An almost similar trend was noted for RMGs. On the whole, prices remained stable for bed-ware, towels, tents, kitchen-bath utilities and furnishing items in Period-II viz-a-viz Period-I.

Analysis of overall export quantum and value. It is noted above that export of waste grew at about 48 and 8% per annum in time Periods I and II, respectively. Unavailability of data on commodity-wise waste requires an aggregated measure of VA commodities for an empirical analysis, which is hampered by varying units of measurement, i.e. dozens or MTs. Therefore, two broad groups as per said measuring units were defined. The segments of commodity groups, such as bed-ware, kitchen-bath utilities and furnishing items, measured in both units were shifted across to respective group. Further, cloth measured in million Sq.m. was divided by 12 to express it in a uniform dozen-measure. As lint is raw material for all VAs, it was excluded and waste (measured in MTs) was treated as a separate entity for analysis. Parameters estimated for analysis included average annual growth rates, physical quantum and value in actual and standardized form (considering Period-I as base or unity) are presented in Table III.

Growth rates of both VA groups are quite close to each other for both time periods. However, those for Period-I are twice of the same for Period-II, i.e. about 10 and 5% per annum, respectively. Growth of waste exported was out of proportion, i.e. about 48 and 8% per annum in Periods-I and II, respectively. Likewise, average annual growth in waste (MTs) per '000' dozens and per MT of VAs was about 1.7 and 2.9% in Period-II viz-a-viz about 34 and 35%, respectively, in Period-I. In physical terms, however, waste increased from 0.29 MT to 0.42 MT (about 45%) per '000' dozens and from 0.12 MT to 0.14 MT (about 17%) per MT of VA in Period-II as compared with Period-I. This is logical as specialized VAs, such as RMGs, textile made-ups, bed-ware and other tailored goods, went up by 3 to 8 times in Period-II as compared with Period-I, which generated more waste than the situation before. Further, extent of tailoring in base material used for items included in dozen measure is more than that in case of weight-oriented exports. On an average, export of dozen and weight-oriented VAs went up by about 2.5 and 3 times, respectively, in Period-II as compared with Period-I. A 3.6 times increase noted for waste seems to be out of proportion.

Average annual growth rates for values from dozen-based exports (Table III) were considerably higher than those for respective export quantum, while this edge in case of weight-oriented VAs was comparatively low as growth in the former's price exceeded that for the latter. For waste, growth in value lagged behind that for quantum because of price decline.

RECOMMENDATIONS

The most peculiar observation is generation of waste in an out of proportion way, which point to technical (ginning & spinning) and managerial inefficiencies. Further, a great deal of variation existed across the VA commodity groups in respect of quantum-price-value relationships. For instance, yarn and thread, cloth and RMGs accounted for about 85% of export value. In case of yarn and thread, a little change in price took place, while an increase of 60 to 70%, in Period-II viz-a-viz Period-I, was noted in prices of the latter two commodity groups. Other items where prices ruled well above export quantum were textile made-ups, furnishing items, tarpaulin and canvas and bags and sacks. This requires rationalizing the mix of export basket in line with economic principles, parameters established in this study and regulatory framework of the international market.

REFERENCES

Ellahi, M., 2003. Poverty Issue and Policies for its Alleviation: A Need to Redirect Focus of Planning Strategies. *In:* W.A. Jehangir and I. Hussain (eds.), *Proc. Workshop on Pro–Poor Intervention Strategies in Irrigated Agriculture in Asia.* Held on April 23–24,at The International Irrigation Management Institute, Islamabad

Ellahi, M., 2005. Some Poverty Issues in Pakistan: An Empirical Analysis. *Forman J. Eco. Studies*, 1: 55–72

Government of Pakistan 2004a. *Economic Survey (1987-88 to 2003-04)*, Economic Advisor's Wing, Economic Affairs and Finance Division, Islamabad.

Government of Pakistan 2004b. Exports and Re-Exports*(1980-81 to 2003-04)*, Federal Bureau of Statistics, Statistics Division, Islamabad.

Government of Pakistan 1960. The Second Five Year Plan 1960-65, Planning Commission, Karachi.

Government of Pakistan 1984. The Sixth Five Year Plan 1983-88, Planning Commission, Islamabad.

Government of Pakistan 1965. The Third Five Year Plan 1965-70, Planning Commission, Islamabad.

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