

MAJOR EXPORTS OF PAKISTAN: THEIR GROWTH AND INSTABILITY

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Pakistan's economy is typically characterised by large resource (saving investment) gaps, government budget deficits, and current account imbalances. The reliance on international trade and foreign capital inflows has become crucial to sustain and enhance the pace of economic growth in the scarcity and misuse of domestic resources. This study is an attempt to determine the growth and instability in Pakistan exports value/quantity and unit value using time-series data for the period 1970 to 1994.

Broadly speaking the study has the following main objectives: a) to measure the openness of Pakistan's economy; (b) to estimate the commodity-wise growth and instability in terms of value, quantity and unit-value of major exports of Pakistan; (c) to study the ranking of major export commodities according to their instability indices; (d) to study Pakistan's share of major commodities in world exports.

The major findings of the study are: (a) the growth in the value of major exports is higher than that in the value of the minor exports; (b) the export quantity of some of the commodities is constrained by the increasing domestic demand; (c) the value of some of the most major exports is more unstable than that of the minor exports.

1. INTRODUCTION

Pakistan's economy is typically characterised by large resource (saving - investment) gaps, government budget deficits, and current account imbalances. The reliance on international trade and foreign capital inflows has become crucial to sustain and enhance the pace of economic growth in the scarcity and misuse of domestic resources. International trade has proven to be an engine of economic growth at the international level. One of the major reasons for the rapid growth of the East Asian countries is their excellent export performance. These countries liberalised international trade and offered many incentives for the establishment and development of the export sector. Pakistan's export grew at an average annual growth rate of about 17.9 per cent per annum and accounted for about 13.04 per cent of GDP in 1994-95. Since independence, Pakistan like many other less developing countries (LDCs) is facing serious

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balance of payments problems. These problems arise mainly from the failure of exports to grow fast enough to meet their growing import requirements. In order to promote the growth of exports, the government provided a number of export incentives (such as, establishment of export processing zones, compensatory rebates on various export items, excise and sales tax rebates, export credit guarantee scheme, etc.) in the mid-1980s. In 1982, Pakistan moved from a fixed exchange rate system to a managed floating exchange rate system with an objective to make her exports more competitive in the foreign markets. In 1988, the government launched its macroeconomic adjustment program with measures and changes in the areas of fiscal policy, trade policy and deregulation. Agriculture plays a most crucial role in generating foreign exchange earnings through increased agricultural exports. Primary products and agricultural commodities are the major sources of foreign exchange for developing countries. The fluctuations in export value are known to have serious consequences. Specifically, unstable export value affects investment decisions by hindering the continuous import of industrial raw materials. This in turn impedes the growth of the industrial sector. Moreover, it causes fluctuations in GNP and promotes uncertainty in the economy. The export earnings of Pakistan are subject to wide fluctuations depending on the performances of the industrialised nations, where much of those primary commodities are exported. During the recent world recession the prices of Pakistan's export of primary commodities fell down and, accordingly, her export earnings dropped substantially. The export of less developing countries fluctuates more than that of the developed countries. This is because of the fact that the export of less developing countries, mainly, comprises agricultural products having erratic supply. Cotton group items (raw cotton, cotton yarn, ready-made garments and hosiery and cotton cloth) have been, traditionally the principal exports which accounted for 53.2 per cent (1994) of total exports. Since the secession of East Pakistan, rice has become the second major export item.

Against this background, this study was undertaken with the following objectives:

(a) to measure the openness of Pakistan's economy; (b) to estimate the commodity-wise growth and instability in terms of value, quantity and unit value of major exports of Pakistan; (c) to study the ranking of major export commodities according to their instability indices; (d) to study Pakistan's share of major commodities in world exports.

2. DATA AND METHODOLOGY

Growth Rates

The growth rates and instability indices were measured by fitting an exponential time trend of the form:

$$\log y = a + t \log b$$

where,

y = value/quantity/unit value of exports

a = constant

b = regression coefficient

t = time variable in years 1, 2, 3,, n .

Measurement of Instability

The measurement of instability in time-series data requires an explicit assumption of what constitutes the acceptable and unacceptable components. A systematic component which can be predicted does not constitute instability, hence, it should be eliminated from the data. The remaining unpredictable component represents the instability.

The instability index (I) was constructed, based on the residuals:

$$I = \sqrt{\frac{\sum_{i=1}^n e_i^2}{n - k}}$$

where,

e_i = value of residual of i th observation

n = number of observations

k = number of variables

The exponential time trend was fitted to the data on value (in terms of US \$)¹, quantity and unit value of exports, for the period 1970 to 1994. The data used in this analysis is primarily taken from the *Economic Survey of Pakistan*

¹ The values were taken in US dollars (\$) as changing the exchange rate of the rupee can influence the instability to a great extent.

(1995-96). By using the above equation the instability indices are measured for value, quantity and unit value of exports of each major commodity.

3. OPENNESS OF PAKISTAN'S ECONOMY

Pakistan has an open economy therefore it can be easily affected by international trade and finance. There are two measures of openness: (a) Ratio of the value of exports to GNP; (b) Ratio of the value of imports to GNP.

In the case of Pakistan, the ratio of the value of exports to GNP is less than the ratio of the value of imports to GNP. The ratio of the value of exports to GNP is at least 4 per cent while the ratio of the value of imports to GNP is at least 8 per cent. This suggests that at least 4 per cent (in the case of exports) and at least 8 per cent (in the case of imports) of Pakistan's economic activities depend on trade (Table 1). Thus, the economy of Pakistan is vulnerable to the changing conditions of the external forces governing the supply of and demand for exports and imports. These external forces include prices, interest rates and expectations. Changes in these factors would be transmitted to Pakistan's economy through exports, imports and their payments.

4. COMPOSITION OF EXPORTS

Broadly speaking Pakistan's exports can be classified into three categories, namely, raw items, semi-manufactured and manufactured items (Table 2). Agriculture commodities contribute a major portion of total export earnings (Table 3).

Table 1
Openness of Pakistan's Economy

	1970	1975	1980	1985	1990	1994
GNP (Mil. Rs.)	45465	124415	270523	507678	932282	1686681
Exports (Mil. Rs.)	1998	11253	29280	49592	138280	251173
Imports (Mil. Rs.)	3602	20465	53544	90946	171114	320892
Trade Balance	-1604	-9212	-24264	-41354	-32832	69719
Exports/GNP	4.39	9.04	10.82	9.77	14.83	14.89
Imports/GNP	7.92	16.45	19.79	17.91	18.35	19.02

Table 2
Value of Exports of Major Commodities/Groups and Their Share in Total Value of Exports, 1970-94
(Million US Dollars)

	Value of the Item						Percentage of the Item					
	1970	1975	1980	1985	1990	1994	1970	1975	1980	1985	1990	1994
Raw Item	113.3	385.4	1154.7	961.1	955.7	745.3	27.0	33.9	38.9	31.3	15.5	9.1
Fish/fish preparations	12.8	28.2	56.5	82.7	114.9	154.3	3.0	2.5	1.9	2.7	1.9	1.9
Rice	36.3	250.4	565.8	342.4	350.0	454.6	8.6	22.0	19.1	11.1	5.7	5.6
Raw wool	4.4	6.7	5.0	17.0	8.7	10.7	1.0	0.6	0.2	0.5	0.1	0.1
Raw cotton	56.7	99.1	525.5	513.7	426.1	62.4	13.5	8.7	17.8	16.7	6.9	0.8
Cotton waste	3.1	1.0	1.9	5.3	56.0	63.3	0.7	0.1	0.1	0.2	0.9	0.8
Semi-manufactured	96.5	207.3	303.3	465.3	1479.4	1749.2	23.0	18.2	10.2	15.1	24.0	26.3
Cotton yarn	72.3	143.6	207.1	279.5	1189.8	1464.9	17.2	18.2	7.0	9.1	19.3	22.8
Leather	22.5	60.2	90.1	179.7	275.8	272.3	5.3	5.3	3.0	5.8	4.5	3.3
Animal casing	1.7	3.5	6.1	6.1	13.8	12.0	0.4	0.3	0.2	0.2	0.2	0.1
Manufactured Items	129.6	339.0	959.6	994.7	2491.6	3748.3	30.9	29.8	32.4	32.4	40.4	46.0
Cotton thread	2.7	4.0	10.2	3.8	3.4	1.9	0.6	0.3	0.3	0.1	0.1	Ng
Footwear	6.1	6.7	10.2	15.4	32.3	49.1	1.4	0.6	0.3	0.5	0.5	0.6
Guar and Products	8.4	19.9	29.0	27.5	29.1	29.2	2.0	1.7	1.0	0.9	0.5	0.3
Ready-made garments & hosiery	5.2	33.1	75.2	261.1	832.6	1330.7	1.2	2.9	2.5	8.5	13.5	16.3
Carpets and Rugs	13.6	72.6	226.6	166.8	223.1	198.2	3.2	6.4	7.7	5.4	3.6	2.4
Sports goods	6.9	19.1	31.5	48.8	138.2	264.7	1.6	1.7	1.1	1.6	2.2	3.2
Surgical instruments	3.8	13.2	26.7	52.2	84.8	113.9	0.9	1.2	0.9	1.7	1.4	1.4
Synthetic textile	7.6	10.1	133.5	66.7	356.9	586.0	1.8	0.9	4.5	2.2	5.8	7.2
Cotton cloth	65.3	137.3	241.4	314.9	677.9	1081.8	15.6	12.1	8.2	10.2	11.0	13.3
Petroleum and Products	8.2	19.4	169.2	31.4	99.4	80.8	1.9	1.7	5.7	1.0	1.6	1.0
Total Exports of Pakistan	419.7	1136.7	2957.6	3072.6	6167.7	8141.7	80.9	81.9	81.5	78.8	79.9	81.4

Note: The sum of individual items/groups will not equal the total exports as some of the items of minor importance have not been included in the table.

Ng = Less than 0.1 per cent.

Table 3
Value of Exports of Major Agricultural Commodities and Their Share in Total Value of Exports, 1970-94
(Million US Dollars)

	Value of the Item						Percentage of the Item					
	1970	1975	1980	1985	1990	1994	1970	1975	1980	1985	1990	1994
Agricultural Products	325.8	895.5	2215.7	2331.3	4728.8	6425.1	77.6	78.8	74.9	75.9	76.7	78.9
Fish/fish preparations	12.8	28.2	56.5	82.7	114.9	154.3	3.0	2.5	1.9	2.7	1.9	1.9
Rice	36.3	250.4	565.8	342.4	350.0	454.6	8.6	22.0	19.1	11.1	5.7	5.6
Raw cotton	56.7	99.1	525.5	513.7	426.1	62.4	13.5	8.7	17.8	16.7	6.9	0.8
Raw wool	4.4	6.7	5.0		8.7	10.7	1.0	0.6	0.2	0.5	0.1	0.1
Cotton waste	3.1	1.0	1.9	5.3	56.0	63.3	0.7	0.1	0.1	0.2	0.9	0.8
Cotton yarn	72.3	143.6	207.1	279.5	1189.8	1464.9	17.2	18.2	7.0	9.1	19.3	22.8
Cotton thread	2.7	4.0	10.2	3.8	3.4	1.9	0.6	0.3	0.3	0.1	0.1	Ng
Cotton cloth	65.3	137.3	241.4	314.9	677.9	1081.8	15.6	12.1	8.2	10.2	11.0	13.3
Synthetic textile	7.6	10.1	133.5	66.7		586.0	1.8	0.9	4.5	2.2	5.8	7.2
Ready-made garments & hosiery	5.2	33.1	75.2	261.1	832.6	1330.7	1.2	2.9	2.5	8.5	13.5	16.3
Leather	22.5	60.2	90.1	179.7	275.8	272.3	5.3	5.3	3.0	5.8	4.5	3.3
Animal casing	1.7	3.5	6.1	6.1	13.8	12.0	0.4	0.3	0.2	0.2	0.2	0.1
Guar and Products	8.4	19.9	29.0	27.5	29.1	29.2	2.0	1.7	1.0	0.9	0.5	0.3
Footwear	6.1	6.7	10.2	15.4	32.3	49.1	1.4	0.6	0.3	0.5	0.5	0.6
Carpets and Rugs	13.6	72.6	266.6	166.8	223.1	198.2	3.2	6.4	7.7	5.4	3.6	2.4
Sports goods	6.9	19.1	31.5	48.8	138.2	264.7	1.6	1.7	1.1	1.6	2.2	3.2
Total Exports of Pakistan	419.7	1136.7	2957.6	3072.6	6167.7	8141.7						

Ng = Less than 0.1 per cent.

It is shown in Table 2 that in terms of the value of exports, manufactured items is the most important sector, followed by semi-manufactured and raw items. The annual exports of Pakistan² increased from \$419.7 million in 1970 to \$8141.7 million in 1994. There was a large increase in total exports in 1975, 1990 and 1994. The export of manufactured items showed a remarkable increase. The export of semi-manufactured items also showed a steady increase. The export of raw items showed a steady increase till 1980, after which it showed a decline. At commodity level, the export of fish and fish preparations, rice, cotton yarn, leather, footwear, guar and products, ready-made garments and hosiery, sport goods, surgical instrument and cotton cloth showed a remarkable increase and maintained their predominance among the exports. Among the above commodities ready-made garments and hosiery, cotton cloth and rice are the major exports of Pakistan. The export of raw wool, raw cotton, cotton waste, animal casings, cotton thread, carpets and rugs, synthetic textile and petroleum products also showed an increasing trend except in one or two years when its export declined.

In percentage terms, the share of major commodities export in Pakistan's total export remain between 79 to 82 per cent. The highest percentage was recorded in 1975 whereas the lowest percentage was in 1985. The share of raw items initially increased from 27 per cent in 1970 to 38.9 per cent in 1980 but subsequently dropped up to 9.1 per cent in 1994. The share of semi-manufactured items initially dropped from 23 per cent in 1970 to 10.2 per cent in 1980 but subsequently rose up to 26.3 per cent in 1994. Manufactured items share initially declined from 30.9 per cent in 1970 to 29.8 per cent in 1975 but subsequently rose up to 46 per cent in 1994. The share of fish and fish preparations, raw wool, raw cotton, leather, cotton cloth and petroleum products kept fluctuating during the past two decades. The share of cotton yarn, ready-made garments and hosiery, sports goods, surgical instruments and synthetic textile showed an increasing trend, while animal casings, cotton thread, footwear and guar and products showed a decline. The share of rice initially increased from 8.6 per cent in 1970 to 22 per cent in 1975 but later declined up to 5.6 per cent in 1994. The share of cotton waste initially declined from 0.7 per cent in 1970 to 0.1 in 1980 but after that it showed an increasing trend. The share of carpets and rugs increased from 3.2 per cent in 1970 to 7.7 per cent in 1980 but subsequently declined down to 2.4 per cent in 1994.

Pakistan is basically an agricultural country. Its major export consists of agricultural goods and commodities. Using share as a measure of importance, it is found that the agricultural products sector is increasing in importance as a

² See Table 2.

major source of foreign exchange earnings. For example its share increased from 77.6 per cent in 1970 to 78.9 per cent in 1994 (Table 3).

Table 4
Commodity-wise Growth Rate and Instability Indices of Pakistan's Major Exports

Commodities	Annual Compound Growth Rate (per cent)			Instability Index		
	Value	Quantity	Unit Value	Value	Quantity	Unit Value
Fish/fish preparations	0.82 (12.52)*	0.50 (4.44)*	0.32 (4.04)	0.27	0.46	0.32
Rice	0.59 (6.78)*	0.54 (7.34)*	0.05 (0.89)	0.36	0.30	0.23
Raw wool	0.97 (3.54)*	0.21 (2.06)***	0.13 (2.40)**	1.12	0.42	0.22
Raw cotton	0.56 (2.69)**	0.36 (1.54)	0.20 (3.12)*	0.85	0.96	0.26
Cotton waste	0.97 (3.54)*	0.60 (2.01)***	0.37 (7.67)*	1.12	1.22	0.20
Leather	0.84 (11.99)*	0.09 (1.04)	0.75 (11.89)*	0.29	0.37	0.26
Cotton yarn	0.87 (6.24)*	0.53 (3.68)*	0.34 (6.24)*	0.57	0.59	0.14
Cotton thread	0.02 (0.17)	-0.32 (3.03)*	0.34 (11.34)*	0.46	0.43	0.12
Cotton cloth	0.83 (11.66)*	0.42 (8.49)*	0.41 (11.58)*	0.29	0.20	0.14
Petroleum products	0.62 (3.22)*	-0.21 (1.18)	0.83 (8.98)*	0.79	0.72	0.38
Synthetic textiles	2.00 (7.51)*	1.60 (5.81)*	0.40 (3.49)*	1.09	1.12	0.47
Footwear	0.56 (5.93)*	-0.01 (0.18)	0.57 (9.12)*	0.39	0.21	0.26
Animal casings	0.68 (8.46)*	0.24 (2.61)**	0.44 (7.81)*	0.33	0.37	0.23
Guar and products	0.46 (8.38)*	0.01 (0.18)	0.45 (5.67)*	0.23	0.29	0.32
Carpets and rugs	0.89 (12.43)*	NA	NA	0.29	NA	NA
Ready-made garments & hosiery	1.94 (12.64)*	NA	NA	0.62	NA	NA
Sports goods	1.00 (9.50)*	NA	NA	0.43	NA	NA
Surgical instruments	1.16 (17.41)*	NA	NA	0.27	NA	NA
Other exports	1.17 (18.21)*	NA	NA	0.25	NA	NA

Source: Source of data: same as in Table 2. Figures in parentheses are 't' values.

Note: * Significant at 1 per cent level.

** Significant at 5 per cent level.

*** Significant at 10 per cent level.

NA: Not available.

5. GROWTH AND INSTABILITY OF MAJOR EXPORTS

The results of the estimated exponential time trend equations, i.e., t-statistics, annual compound growth rate and instability indices are presented in Table 4. The instability of the export market makes any steady development policy difficult. It discourages investment in the production of the commodity, limits the economic horizon and destroys the sense of continuity which is necessary for planning production. On the basis of the indication given by the instability index a product by product policy on export promotion and investment planning can be formulated.

5.1. Growth and Instability in Value

All the commodities indicated a positive growth rate in export value. The export of synthetic textiles witnessed a high growth rate (2.00 per cent per annum) followed by ready-made garments and hosiery, surgical instruments, sports goods, cotton waste, raw wool, carpets and rugs, cotton yarn, leather, cotton cloth, fish and fish preparations, animal casings, petroleum products, rice, raw cotton, footwear, guar and products and cotton thread. As far as instability is concerned, guar and products ranked as the most stable (0.23) followed by fish and fish preparations, surgical instruments, leather, cotton cloth, carpets and rugs, animal casings, rice, footwear, sports goods, cotton thread, cotton yarn, ready-made garments and hosiery, petroleum products, raw cotton, synthetic textiles, raw wool and cotton waste.

5.2. Growth and Instability in Quantity

Except for cotton thread, petroleum products and footwear all the commodities indicated positive growth rates in quantity export. The export of synthetic textile showed a high growth rate (1.60 per cent per annum) followed by cotton waste, rice, cotton yarn, fish and fish preparations, cotton cloth, raw cotton, animal casings, raw wool, leather and guar and products. The annual rate of decrease in quantity exports of cotton thread, petroleum products and footwear was 0.32, 0.21 and 0.01 per cent respectively. The model ranked the quantity of cotton cloth as the most stable (0.20) followed by footwear, guar and products, rice, leather, animal casings, raw wool, cotton thread, fish and fish preparations, cotton yarn, petroleum products, raw cotton, synthetic textiles and cotton waste.

5.3. Growth and Instability in Unit Value

All the commodities showed a positive growth rate in unit value of exports. The export unit value of petroleum products showed a high growth rate (0.83 per cent per annum) followed by leather, footwear, guar and products, animal casings, cotton cloth, synthetic textiles, cotton waste, cotton yarn, cotton thread, fish and fish preparations, raw cotton, raw wool and rice. As far as the instability in unit value of export is concerned the model showed cotton thread as most stable (0.12) followed by cotton yarn, cotton cloth, cotton waste, raw wool, rice, animal casings, raw cotton, leather, footwear, guar and products, fish and fish preparations, petroleum products and synthetic textiles.

6. PAKISTAN' SHARE OF MAJOR COMMODITIES IN WORLD EXPORTS

Pakistan's share of major commodities in world exports is presented in Table 5. The share of Pakistan's exports in world trade increased from 0.12 per cent in 1977 to 0.20 per cent in 1994. Pakistan's share in the world export of textile and clothing declined from 2.20 per cent in 1977 to 1.41 per cent in 1989 but it increased later to 2.35 per cent in 1994. The share of leather and leather goods in the world export of leather and leather goods initially dropped from 2.74 per cent in 1977 to 2.53 per cent in 1982, rose to 3.40 per cent in 1987 but again it dropped to 1.84 per cent in 1994. The share of fish and fish products in the world export of fish and fish products increased from 0.15 per cent in 1977 to 0.65 per cent in 1982 but subsequently declined to 0.39 per cent in 1994. Pakistan's share in the world export of carpets, carpeting and rugs kept fluctuating during the past two decades.

7. POLICY RECOMMENDATIONS

The results obtained in this study lead to important implications that seem to be relevant from the point of view of policy formulation. Firstly, the share of traditional exports should be decreased and that of non-traditional exports should be increased in the total exports as the demand for the former is either stagnant or declining in the world market³. Moreover, there is a further need to explore new areas of comparative advantage and increase the variety of exports. Secondly, although Pakistan has sharply adjusted the market distribution of her exports, there is still room to explore new rapidly growing markets such as Indonesia, Malaysia and states of the former Soviet Union. Thirdly, policy makers should maintain and improve the economic environment of the country by further moving towards a liberalised policy of open economy and establish macro-economic and political stability to make

³ Due to a drastic shift in the structure of international trade, manufactures now account for about 80 per cent of world merchandise exports (Haque, 1995).

Pakistan's exports more and more competitive in the world market. And finally, in order to reduce export instability, it is suggested that Pakistan should take steps to process her primary commodity exports into semi-processed and finished goods. This will reduce the supply of primary commodities, thus raising their prices and adding more economic value to Pakistan's exportables.

Table 5
Pakistan's Share of Major Commodities in World Exports

(Value in \$ million and share in %)

	1977	1982	1987	1989	1991	1992	1993	1994
Total Export								
World Total	1041000	1882355	2527885	3080000	3506000	3642000	3257589	3617591
Pakistan	1283	2348	4105	4698	6464	7264	6842	7328
Share	0.12	0.12	0.16	0.15	0.18	0.20	0.21	0.20
Textile and Clothing								
World Total	69071	75217	166200	193900	196834	222708	217926	238433
Pakistan	1521	1071	2447	2734	4423	5041	5091	5593
Share	2.20	1.42	1.47	1.41	2.25	2.26	2.34	2.35
Leather and Leather Goods								
World Total	2339	4115	7949	8706	10660	11751	12697	14645
Pakistan	64	104	270	265	271	254	240	269
Share	2.74	2.53	3.40	3.04	2.54	2.16	1.89	1.84
Fish and Fish Products								
World Total	23862	12225	22126	24588	31982	33038	33384	36531
Pakistan	36	79	121	92	110	137	202	143
Share	0.15	0.65	0.55	0.37	0.34	0.41	0.61	0.39
Carpets, Carpeting and Rugs								
World Total	531	857	1089	1199	1123	1346	1440	1213
Pakistan	103	136	225	224	217	204	158	187
Share	19.40	15.90	20.66	18.70	19.32	15.16	10.97	15.42

8. CONCLUSIONS

This study is an attempt to estimate the growth and instability in Pakistan's exports by commodity in terms of value, quantity and unit value. The results of the study indicate that growth in value is higher than the growth in quantity and unit value. The results tend to suggest that the growth in the value of major exports (ready-made garments and hosiery, synthetic textiles, fish and fish preparations, rice, raw cotton, cotton waste, leather, cotton yarn, cotton cloth, carpets and rugs, sports goods and surgical instruments) is higher than the minor exports (raw wool, cotton thread, petroleum products, footwear and guar and products). Secondly, the export quantity of some of the commodities (such as cotton thread, petroleum products, footwear and leather) was constrained by the increasing domestic demand. Thirdly, the growth in the unit value of export is higher than the growth in quantity export. Fourthly, in case of instability, the results tend to suggest that the value of some of the major exports is more unstable than that of the minor exports. The reason is that the volatile world prices and policy changes have induced a very high degree of instability in some of the major exports. Fifthly, the unit value of exports tend to be more stable than their exported quantities (except for footwear and guar and products). And finally the quantity of cotton waste and synthetic textiles are the two most volatile when compared with the others.

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