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PROTECTIONISM IN SPAIN, 1869-1930

by Leandro PRADOS DE LA ESCOSURA and Antonio TENA (Universidad Carlos III de Madrid)

Tariffs, as the most frequent instrument of Government intervention in the late 19th and early 20th century Europe, has been at the core of historical controversy over the effects of governmental action on Spain's economic development. Nonetheless, historical assessments of Spanish protectionism are mostly impressionistic and both determinants of protection and long-run consequences for growth of a departure from comparative advantage remain largely unexplored. This paper aims at providing a quantitative assessment of Spain's protectionist experience from which a new, more rigorous, debate could start.

1. A Historical Assessment of Spanish Protectionism.

Despite sustained economic growth since the early 19th century Spain's real product per head lagged behind those of northwestern European countries with relative differentials widening. In most attempts to allow for this growing gap, exogenous explanations have deserved a considerable attention and it has been usually argued that specialisation along lines of comparative advantage contributed to Spanish economic backwardness. In a view widely shared by historians, the liberalisation of foreign trade (particularly by the tariff of 1869) was a decisive element in economic backwardness and colonisation of Spain. In brief, behind this interpretation there is an implicit, and untested, counterfactual hypothesis which suggests that, in the absence of trade, there would have existed an alternative, inward-looking, more efficient path of development with higher levels of employment and productivity.

Recent research has counterbalanced the pessimistic picture. Trade data reconstruction shows that Bairochi's well-known hypothesis is inconsistent with evidence for the Spanish case. Exports experienced their fastest growth during the so-called "free trade period", 1869-1891, while imports and exports contracted during the protectionist years, 1891-1913. There is no case to be made, therefore, on the basis of simple correlations between phases of commercial policy and economic performance in support of the idea that liberal trade policy harmed and protectionism helped the growth of Spanish economy. Trade grew faster under a less protective setting but periods of intense growth in real product per

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head not always coincided with those of fastest expansion of exports and imports, i.e., the 1920's.

II. Average Nominal Protection, Openness and Exchange Rate.

The most common attempt to summarize nominal protection is by calculating the rate of tariff revenue, i.e., tariff revenue expressed as a percentage of imports. An alternative measure of the actual protection is the share of imports in gross domestic product. A highly coincidental picture derives from the alternative methods as the rate of tariff revenue and the imports/GDP ratio fluctuate in opposite directions (Graph 1). An early decline in average nominal protection appears to derive from the 1849 tariff, which deepening the 1841 reform, eliminated most prohibitive tariffs and aimed at becoming an instrument of industrial policy and simultaneously increasing tax revenues. Liberalising measures in the mid-1850's allowing duty-free imports for the construction of the railways, coupled with economic expansion, help explain the sharp contraction in the rate of tariff revenue and the doubling of imports/GDP ratio. The decline in economic activity caused by the 1866 financial crisis and the 1868 Revolution kept the rate of tariff revenue stagnant up to the mid-1870's. Economic expansion in the 1870's and 1880's under the moderate, non-prohibitive, tariffs of 1869 and 1882 is behind the sustained increase in the imports/GDP ratio and the recovery of the rate of tariff revenue. The return to strict protection with the 1891 tariff coincided with the lagged depreciation of the peseta after Spain's abandonment of its gold convertibility (1883). It has been frequently argued that the peseta's depreciation implied additional protection. Our estimates of the real effective exchange rate (Graph 2) confirms it, since the nominal effective (trade-weighted) depreciation was not only offset but even reinforced by the price differential between Spain and her trading partners, while a correlation appears to exist between the peseta's real effective depreciation and an improvement of the trade balance. From the early 1890's up to 1906, when a new protective law was introduced, the rate of tariff revenue declined, while the imports/GDP ratio kept unaltered. The years following the new tariff witnessed a contraction of relative imports and a rise in tariff revenues that reversed in the eve of World War I. The post-war recovery brought a rise in tax revenues while the import/GDP ratio stabilized over the pre-war level to decline only with the 1930's crisis. Such a development was possible under a new, non-prohibitive, tariff and, to a large extent, due to a sustained appreciation of the peseta, as shown by the trend in the real effective

exchange rate (which would also help explain both the increase in imports and the trade deficit in the 1920's).

How does Spain compare to similar protection indicators for other countries? A look at the largest western European countries shows that the rate of tariff revenue was in Spain higher than in France, Germany and Britain since mid-19th century with a widening gap up to the 1890's, and comparable to that of Italy up to World War I. When the comparison is carried out in terms of imports/GDP ratios the perception of Spain's higher isolation, deepening since the 1890's, as a result of both depreciation and tariff protection, is confirmed.

III. Levels of Nominal and Effective Protection

Short-cut methods to produce internationally comparable levels of protection has not been accepted without criticism. It has pointed out that measuring average nominal protection (NT) through aggregate rates of tariff revenue fails to account for prohibitive tariffs and, therefore, biases the result towards less protected commodities or those with lower price elasticity of demand. On the other hand, imports/GDP ratios although provide an outcome of protection (i.e., the extent to which imports have decline within the economy) incorporate not only the effects of tariff and non-tariff protection but any other effect on imports resulting from changes in economic activity or more permanent differences such as the size of the economy.

Given the difficulties to derive a single comprehensive measure for nominal protection we have constructed three additional indices that provide a plausible range within which the actual nominal protection lays. The first one corresponds to an unweighted average of ad valorem tariffs (NTSP) and represents an attempt to allow for the fact that it appears to be a negative correlation between tariff levels and quantities imported. The ^{second} ~~third~~ represent an attempt to weighting individual tariffs by their share in ex ante imports (that is, in the period before the new tariff was applied), $RNT_t = \sum A Q_{it} / \sum P_i Q_{it}$, (1) where A is the ad valorem tariff, P and Q are price and quantity of commodity i in period t. It assumes that the quantity of imports demanded only changes as a response to the introduction of a tariff. However, this is a hard assumption since prices may vary between periods t-1 and t, and our

last estimate aims at allowing for it, $RNP_t = \sum A Q_{it} / \sum P_i Q_{it}$, (2). This new formulation is not free from criticism given the fact that a non-tariff induced variation in prices between periods t-1 and t would alter the quantity imported unless the price elasticity of demand were zero. The exercise has been carried out for five benchmarks which correspond to years before and after tariff changes (and for which Spanish statistics are more reliable).

A rather uniform picture of nominal protection in Spain emerges from the observation of the four different measures despite actual protection levels diverge across them. Tariffs remained moderate over the years 1869-1891 since the reduction of duties on raw materials in 1883 and the extension of commercial treaties with the most favoured nation clause offset any duty increases in the already mild 1882 tariff. The main increase in nominal protection was due to the 1891 tariff, while the 1906 and 1922 reform laws raised it only slightly. When changes in non-tariff protection such as the fluctuations in the real effective exchange rate are taken into account it appears that, on the whole, the mild increase in ad valorem duties derived from the 1906 tariff fell short of compensating for the recovery of the peseta after 1905. Besides, the substantial appreciation in the Spanish currency in the 1920's might have partially offset the duty increases resulting from the 1922 tariff.

A second feature is that tariff changes affected groups of commodities differently. In fact, while the 1891 tariff discriminated in favour of manufacturing, with higher levels of protection for consumer industries but higher increases for capital goods industries, the 1906 tariff reform represents a clear shift towards protecting foodstuffs. In turn, the 1922 tariff shifted protection back to manufactures and semi-manufactures, in particular, towards the new industrial sectors such as chemicals and machinery.

Conclusions derived from estimates of nominal protection are weakened since they fail to take into account the effects of duties on inputs over net protection to output. It is necessary, therefore, to calculate the effective rate of protection, that is, the extent to which value added under protection overcomes value added under free trade. The effective rate of protection has been derived as

$Z_t = ((1-a_t)/(1+t)-a_t/(1+u))-1$ (3), where a_t are the input-output coefficients under protection, and t and u are tariff duties on output and inputs. Given the lack of technical coefficients for the period under investigation we had to rely on those obtained from the 1958 Input-Output Table, and the results from the exercise should be cautiously

accepted. Table 2 compares unweighted nominal and effective protection for a sample of commodities covering up to 90% of total trade (which explains discrepancies with Table 1). The results for effective protection confirm our findings for nominal protection although showing higher protective rates.

IV. Causes and Effects of Protection: Some Comments

Among the causes for protection, the infant industry argument is most popular among Spanish historians. One way to discern the extent to which such an argument actually explains the search for protection is to compare those sectors protected and those which experienced, either at the time of introducing the tariff or later, comparative advantage. Table 3 presents two measures of Balassa's revealed comparative advantage (RCA). As it has been claimed comparative advantage is very persistent, and Spain exhibited it for beverages and foodstuffs, minerals and non ferrous metals over the period under consideration. Also, consumer industries, i.e., leather, shoe making, corks, furniture, cotton yarn and goods, experienced RCA for some time around the turn of the century but most of them had lost it by the 1920's. When levels of nominal protection and revealed comparative advantage are opposed it turns out that they are not correlated for foodstuffs and semi-manufactured goods, there is a significant negative correlation in the case of raw materials and a positive one for manufacturing, consumer industries, in particular. Therefore, protection was only granted to sectors exhibiting RCA in the case of light industrial sectors. Did eventually protection pay by creating or enlarging comparative advantage? Preliminary regression analysis suggests that it was only in the case of consumer industries (but not of textiles) that protection apparently contributed to develop comparative advantage.

What were the main effects of protection on resource allocation and income distribution is a major question that still deserves painstaking research before is definitively answer. Only some bold suggestions can now be made about the effects of agricultural protection. Recent research by Williamson shows how relative factor prices, labour/land, declined in Spain instead of rising as part of a Heckscher-Ohlin convergence with the New World, while O'Brien and Prados de la Escosura have shown that Spain allocated a large share of agricultural output to cereals despite the fact that wheat was inefficiently produced. In fact, cereals represented 31.4% of agricultural final output at Spanish prices while only represented 22.6% in sterling (the free-trade prices). The implication seems to be that Spain

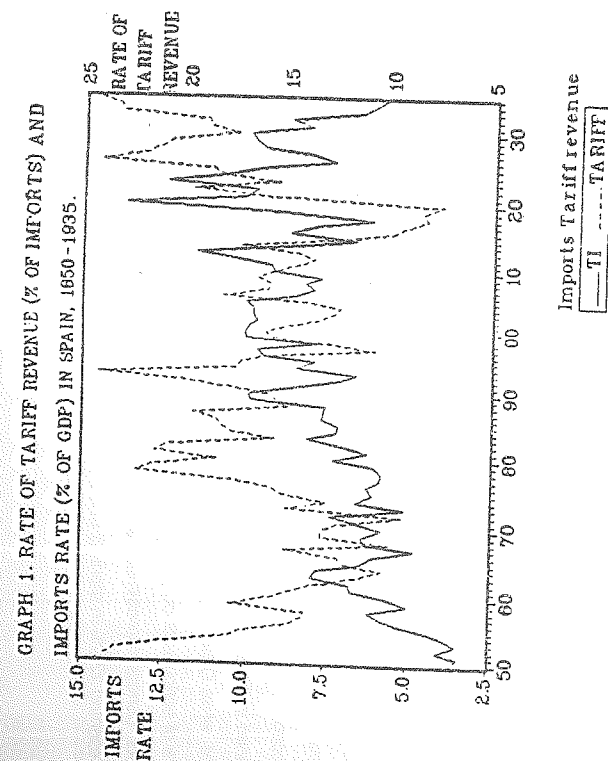
at the turn of the century was a good Stolper-Samuelson illustration: under agricultural protection, land, Spain's scarce factor, benefited from an increase in its demand as it was the factor used intensively in the import-competing sector, while real income of the abundant factor, labour, fell. Moreover, protection, as Sánchez Alonso has shown, prevented people from emigrating from the countryside. Protection, therefore, slowed down economic growth by preventing factors of production from moving away from agriculture (in spite of a large productivity gap) while redistributing income towards landowners.

Table 1

MEASURES OF NOMINAL RATES OF PROTECTION IN SPAIN, 1877-1926 (GATT Classification)

	1877				1889				1897				1913				1926			
	NT	NTSP	$\bar{X}$		NT	RNT	RNP	NTSP	$\bar{X}$	NT	RNT	RNP	NTSP	$\bar{X}$	NT	RNT	RNP	NTSP	$\bar{X}$	
1. PRIMARY GOODS	10.9	13.6	12.2		10	14.2	13.6	16.3	13.7	15.1	15.7	17.4	21.4	17.4	15.5	24.8	23.5	35.9	24.9	
1.1 Foodstuffs	16.8	14.9	15.9		12.8	19.6	16.5	14.9	16	18.6	19.1	21.7	19.1	19.6	20.6	40.7	40.3	40.6	35.5	
1.2 Raw materials	1.88	5.3	3.59		1.02	1.05	1.17	3.3	1.63	3.32	2.72	3.18	5.6	3.7	2.22	2.02	1.69	7.3	3.31	
1.3 Minerals	2.8	18.2	10.5		1.34	3.23	2.12	17.4	6.02	4.7	3.62	4.11	4.9	4.33	3.04	2.65	15	9	7.43	
1.4 Fuels	11.7	4.8	8.26		20.3	44.6	83.4	69.3	54.5	30.2	32.7	31.3	38.9	45.8	26.3	25.9	26.4	47.1	31.4	
1.5 Non Ferrous Metals	14.2	16.9	15.5		12.3	9.7	9.33	10.7	10.5	17.8	22.4	18.1	15.6	18.5	12.8	21.1	17.5	27.6	19.7	
2. SEMI-MANUFACTURES	11.1	14.4	12.8		10.6	6.15	10.8	15.4	10.8	10.6	13.9	13.7	21.5	14.9	12	8.5	17.5	22.9	15.2	
2.1 Iron and steel	17.5	24	20.8		29	6.49	29.5	29.2	23.5	32.1	31.4	36.3	38.7	34.6	30.4	20.8	29.5	30	27.7	
2.2 Chemicals	7.05	10.5	8.77		5.79	5.54	5.59	11.3	7.06	8.21	8.39	9.31	12.3	9.55	6.74	8.17	13.1	20.1	12	
2.3 Other	7.53	15.7	11.6		7.15	6.29	10.6	14.7	9.68	7.97	11.1	9.77	19.3	12	9.67	5.93	19.9	21.6	14.3	
3. INDUSTRIAL MANUFACTURES	17.6	22.5	20.1		13.8	13	14.2	17.6	14.6	18.4	31	29.7	32.5	27.9	15.5	6.53	17.1	24	16.3	
3.1 Equipment goods	9.8	18.1	13.9		7.54	5.77	8.67	14.5	9.12	13.5	29	26.5	23.5	23.1	13.7	6.35	19.1	22.4	15.4	
3.1.1 Machinery	5.7	12.3	9		5.16	2.53	4.41	8.7	5.2	16.8	14.8	15.8	33.7	20.3	14	1.8	19.8	18.7	13.6	
3.1.2 Office equipment and telecom.	26.3	26	26.2		22.1	21.9	21.3	21.6	21.7	10.5	25.2	17	20	18.2	22.9	23.5	23.5	28.6	24.6	
3.1.3 Road vehicles	17.3	18.5	17.9		10.9	10.5	14	14.5	12.5	11.7	58.6	42.4	21.6	33.6	13.1	9.3	21.4	24.3	17	
3.1.4 Other equipment goods	11	14.9	13		12.6	9.52	10.4	15.7	12.1	11	13.1	13.3	19.9	14.3	9.4	7.6	12.8	22.8	13.2	
3.1.5 Other durables consumer goods															13.7	8.23	24.1	21.5	16.9	
3.2 Consumer goods	19.7	24.2	21.9		16.6	14.9	15.1	18.4	16.3	23	31.8	31.3	35.5	30.4	20.3	10.6	16.1	25.7	18.2	
3.2.1 Textiles	19.9	26	22.9		17.1	14.9	15.3	19.9	16.8	24.7	33.5	33	40.6	33	20.3	7.45	21.8	31.1	20.2	
3.2.2 Clothing	20.9	24.4	22.8		18.8	28.7	18.7	19.8	21.5	31.5	24.9	31.5	32.4	30.1	28	16.6	26.3	25.5	23.4	
3.2.3 Other	17.5	19.6	18.5		13.2	13.1	12.5	13	13	16.6	23	21.9	19.3	20.2	19.5	22.7	12.3	20.7	18.8	
TOTAL	12.7	17.3	15		11	12	13.4	16.7	13.3	14.6	18.8	19.7	26.2	19.8	14.8	18.4	22.1	27.5	20.7	
															16	26.5	18.4	27.2	22	

$$NTSP = \frac{\sum_{i=1}^n \frac{Q_{i,t} \cdot P_{i,t}}{Q_{i,t} \cdot P_{i,t}}}{\sum_{i=1}^n \frac{Q_{i,t} \cdot P_{i,t}}{Q_{i,t} \cdot P_{i,t}}} \quad \text{NTSP} = \frac{\sum_{i=1}^n \frac{Q_{i,t} \cdot P_{i,t}}{Q_{i,t} \cdot P_{i,t}}}{\sum_{i=1}^n \frac{Q_{i,t} \cdot P_{i,t}}{Q_{i,t} \cdot P_{i,t}}} \quad \text{NTSP} = \frac{\sum_{i=1}^n \frac{Q_{i,t} \cdot P_{i,t}}{Q_{i,t} \cdot P_{i,t}}}{\sum_{i=1}^n \frac{Q_{i,t} \cdot P_{i,t}}{Q_{i,t} \cdot P_{i,t}}}$$



GRAPH 2. ALTERNATIVE ESTIMATES OF SPAIN'S REAL EFFECTIVE EXCHANGE RATE (av. of Spain's & World Trade Weights) 1870-1930

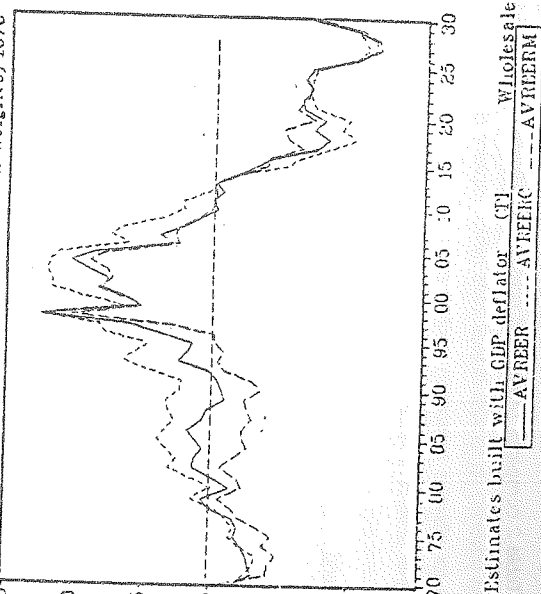


Table 3

REVEALED COMPARATIVE ADVANTAGE IN SPAIN, 1877-1926 (GATT Classification)

	1877		1889		1897		1913		1926	
	V.C.R.(1)	V.C.R.(2)	V.C.R.(1)	V.C.R.(2)	V.C.R.(1)	V.C.R.(2)	V.C.R.(1)	V.C.R.(2)	V.C.R.(1)	V.C.R.(2)
1. PRIMARY GOODS	37.0	79.8	49.8	113.0	37.1	82.3	46.5	96.6	47.7	97.9
1.1 Foodstuffs	48.9	110.9	87.6	313.7	77.9	255.5	90.3	242.8	108.6	356.3
1.2 Raw materials	-65.8	-150.6	-65.6	-150.6	-72.2	-165.5	-51.7	-123.4	-52.1	-134.3
1.3 Minerals	90.8	386.9	87.9	318.5	81.5	293.7	94.1	267.0	68.1	147.8
1.4 Fuels	-102.8	-440.8	-100.6	-392.8	-106.9	-429.9	-74.9	-228.4	-64.8	-192.7
1.5 Non Ferrous Metals	82.7	255.5	72.4	195.5	58.8	149.2	69.2	156.6	65.7	141.3
2. SEMI-MANUFACTURES	-58.7	-129.6	-41.5	-86.5	-32.2	-65.2	-38.6	-85.8	-33.4	-76.0
2.1 Iron and steel	-100.6	-379.3	-79.0	-200.6	-81.9	-200.6	-87.6	-407.1	-77.4	-307.8
2.2 Chemicals	-31.7	-64.7	-48.8	-104.0	-45.0	-93.1	-45.6	-105.1	-11.3	-23.7
2.3 Other	-46.7	-98.6	-23.5	-47.5	-11.7	-23.4	-17.5	-36.2	-35.4	-81.4
3. INDUSTRIAL MANUFACTURES	-68.6	-159.7	-42.2	-88.2	-4.2	-8.5	-24.3	-51.4	-35.7	-82.4
3.1 Equipment goods	-104.3	-522.4	-96.7	-325.8	-108.2	-478.4	-88.8	-462.8	-81.2	-397.1
3.1.1 Machinery	-105.2	-657.6	-104.8		-110.2		-90.4		-80.8	-384.6
3.1.2 Office equipment and telecommunications							-90.4		-83.9	
3.1.3 Road vehicles	-105.5		-104.4	-610.5	-109.3	-562.8	-80.4	-275.6	-82.5	-463.2
3.1.4 Other equipment goods	-105.5		-104.8	-1021.3	-110.2	-1010.6	-89.4	-517.8	-79.2	-340.7
3.1.5 Other durables consumer goods	-97.3	-325.9	4.4	8.8	-91.2	-245.8	-79.4	-265.3	-82.4	-456.0
3.2 Consumer goods	-65.3	-149.1	-34.9	-71.7	20.5	43.0	15.5	31.1	-10.0	-21.0
3.2.1 Textiles	-84.7	-226.5	-50.2	-107.6	8.2	16.8	4.2	8.5	-4.0	-8.2
3.2.2 Clothing	-84.0	-222.5	-76.1	-188.2	2.2	4.5	-76.9	-243.8	-83.8	-752.4
3.2.3 Other	19.4	39.9	14.5	29.5	45.2	104.5	43.3	89.3	-21.7	-47.0

$$VCR(2) = \ln \left\{ \frac{\sum_{i=1}^n \frac{X_i}{m_i}}{\sum_{i=1}^n \frac{X_i}{m_i}} \right\} \times 100$$

$$VCR(1) = \left\{ \frac{(X_i - m_i)}{(X_i + m_i)} \right\} \times \frac{\sum_{i=1}^n (X_i - m_i)}{\sum_{i=1}^n (X_i + m_i)}$$

Table 2

UNWEIGHTED MEAN OF NOMINAL AND EFFECTIVE RATES OF PROTECTION, 1877-1926 (GATT Classification)

	1877 Nominal NT 77	1889 Effective ZB*89	1889 Nominal NT 89	1897 Effective ZB*97	1897 Nominal NT 97	1913 Effective ZB*1913	1913 Nominal NT 1913	1926 Effective ZB*1926	1926 Nominal NT 1926
1. PRIMARY GOODS	8.47	15.58	9.03	36.58	15.60	69.43	21.87	25.89	20.91
1.1 Foodstuffs	11.34	14.39	9.55	14.83	15.16	77.83	27.38	-11.46	29.07
1.2 Raw Materials	2.40	7.35	3.27	13.07	5.06	10.07	2.86	8.21	2.22
1.3 Minerals	1.99	-0.18	0.65	1.65	1.99	2.21	2.73	1.14	1.62
1.4 Fuels	2.74	47.81	20.77	249.60	45.92	169.87	27.80	326.88	11.84
1.5 Non Ferrous Metals	14.23	25.14	12.35	37.45	17.76	24.98	12.80	31.11	15.29
2. SEMI-MANUFACTURES	9.37	24.12	9.08	15.17	23.24	40.94	13.77	67.54	17.37
2.1 Iron and steel	27.90	66.26	29.42	93.48	38.09	69.55	30.88	115.07	44.14
2.2 Chemicals	9.54	27.76	6.45	58.51	11.79	46.39	13.42	66.76	16.66
2.3 Other	7.14	14.81	7.92	-50.54	37.79	30.44	12.55	38.89	15.67
3. INDUSTRIAL MANUFACTURES	19.73	51.41	14.39	112.56	23.47	40.74	21.89	24.09	27.76
3.1 Equipment goods	13.48	4.21	8.79	20.20	18.02	19.20	17.49	-64.44	36.44
3.1.1/1.4 Machinery and other equipment goods	13.60	1.96	7.95	23.78	19.58	22.38	19.23	-92.51	41.50
3.1.3 Road vehicles	13.09	10.96	11.22	9.44	13.32	9.67	12.20	19.79	20.87
3.2 Consumer goods	23.06	76.58	17.38	161.82	26.38	52.23	24.23	71.30	23.19
3.2.1 Textiles	26.71	81.66	18.84	116.76	29.94	64.78	28.18	78.63	20.87
3.2.2 Clothing	21.22	14.16	18.68	22.08	31.28	20.76	24.68	108.37	35.69
3.2.3 Other	18.50	80.21	15.22	245.19	20.81	40.75	21.58	55.34	24.19
TOTAL	11.36	26.02	10.51	47.82	19.17	55.22	19.95	33.78	21.94