Opening Armenia's Border: Sectoral and Distributional Consequences

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Abstract: *When Turkey opens its borders with Armenia, the expectation is that certain Armenian manufacturing sectors would be able to compete with the Turkish imports, while other sectors wouldn't. This paper will try to predict the performance of Armenian manufacturing sectors after the borders are open. It will rely mainly on the concept of comparative advantage and will use four methods to determine the manufacturing sectors in Armenia that would benefit and the sectors that would lose when Turkey opens the borders. The four methods are: the Heckscher-Ohlin theorem, Revealed Comparative Advantage, productivity and wage ratios, and ranking of the top exports and imports of each country. The paper also investigates the effect of appreciation of Dram relative to the Turkish lira on the competitiveness of manufacturing sectors and finds that some of the competitive Armenian manufacturing sectors lose their competitiveness after appreciation of Dram. The paper briefly discusses the distributional effect of trade liberalization and the role of government in transferring some of the benefits of free trade from those who gain to those who lose.*

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Introduction

During early 1990s Turkey unilaterally closed the borders between Turkey and Armenia. It is expected that when Turkey opens the borders consumers in general and certain economic sectors in Armenia would benefit, while others would not be able to compete with the Turkish imports and would suffer. This paper will investigate which manufacturing sectors would gain and which sectors would lose when a free flow of goods begins between Turkey and Armenia. In order to find out the sectors that would benefit when the borders are opened, a major part of the paper will focus on the concept of comparative advantage. The expectation is that Armenian manufacturing sectors that have comparative advantage would benefit from the access to Turkish markets and expand, while sectors that do not have comparative advantage could lose.

This paper will use four methods to determine the manufacturing sectors in Armenia that would benefit and the sectors that would lose when Turkey opens the borders. The paper focuses on the manufacturing sector because empirically it is relatively easier to implement some of the four methods that are discussed in the paper.

After Turkey lifts the blockade of Armenia, it could function as a transit country for Armenia's exports and imports with European Union, the United States and the rest of the world. This could happen if the cost of transportation of Armenian exports from Armenia to Western Europe is cheaper through Turkey than through Georgia. If the cost of transportation of export from Armenia to the rest if the world is cheaper through Turkey, then the lifting of the blockade would generate new opportunities for Armenia's exports to European countries and the rest of the world. This paper will not address the effect of open borders between Armenia and Turkey on Armenia's trade with the rest of the world. Instead it will focus on the trade between Armenia and Turkey.

Comparative advantage based on Heckscher-Ohlin theorem

The first method is based on the Heckscher-Ohlin model, which states that a country would have comparative advantage and would export labor intensive goods if that country has a relatively large endowment of labor and would have comparative advantage in capital intensive goods and would export capital intensive goods if it has a relatively large endowment of capital. This section will try to find out whether Armenia has comparative advantage relative to Turkey in the production of labor intensive industries, high-tech industries, capital intensive industries or agricultural products. To apply the Heckscher-Ohlin model we will use Table 1, which provides economic, demographic and social indicators that could give information about the relative endowment of land, labor, highly skilled labor and capital of both Turkey and Armenia.

Table 1 indicates that in the case of agriculture from 2000 to 2003 Turkey had relatively more arable land per person than Armenia. During 2003 Turkey had 0.33 hectares per person, while Armenia had just 0.17 hectares per person. Also during 2003 in Turkey arable land represented 30.4 percent of the total land area, while in Armenia arable land represented just 17.7 percent of the total land area. This reflects the fact that Armenia is in general a mountainous country. These indicators imply that Turkey has comparative advantage in the production of agricultural goods relative to Armenia. This result is consistent with the observation that during 2003 Turkey had more agricultural machinery per 100 hectare, 4.27 machines, than Armenia, 2.8 machines and that Turkey used more fertilizer per hectare than Armenia. During 2002 Turkey consumed 72.7 kilograms per hectare, while Armenia just 22.8 kilograms per hectare.

With respect to high tech industries, Table 1 indicates that Armenia has more researchers in research and development, R&D, 1615 per million people during 2002 than in Turkey, which had just 341 per million people. Also in 2002, Armenia had a higher number of technicians in research and development, 148 per million people, than Turkey, which had just 37 per million people. This

could imply that Armenia has a relatively higher endowment of highly skilled labor force relative to Turkey; therefore it has comparative advantage in the production of high tech products relative to Turkey.

Table 1. Economic, Demographic and Social indicators of Turkey and Armenia

Country	Description	2000	2001	2002	2003	2004
TURKEY	Arable land (% of land area)	30.95773	30.92525	31.17602	30.34965	..
ARMENIA	Arable land (% of land area)	17.55319	17.55319	17.55319	17.7305	..
TUR	Arable land (hectares per person)	0.353397	0.347313	0.344613	0.330326	..
ARM	Arable land (hectares per person)	0.16061	0.161515	0.162298	0.164626	..
TUR	Arable land (hectares)	2.38E+07	2.38E+07	2.40E+07	2.34E+07	..
ARM	Arable land (hectares)	495000	495000	495000	500000	..
TUR	Agricultural machinery, tractors per 100 hectare	3.952971	3.984774	4.043023	4.270999	..
ARM	Agricultural machinery, tractors per 100 hectare	2.650909	2.871515	2.93697	2.8438	..
TUR	Fertilizer consumption (100 grams per hectare)	876.6944	701.9184	726.5037	..	..
ARM	Fertilizer consumption (100 grams per hectare)	141.4141	101.0101	227.9394	..	..
TUR	Energy use (kt of oil equivalent)	77506	71592	75582	78954	..
ARM	Energy use (kt of oil equivalent)	2072	2064	1927	2004	..
TUR	Labor force, total	2.36E+07	2.40E+07	2.44E+07	2.42E+07	2.65E+07
ARM	Labor force, total	1299589	1305044	1310038	1320575	1278837
TUR	Population, total	6.74E+07	6.85E+07	6.96E+07	7.07E+07	7.17E+07
ARM	Population, total	3082000	3064725	3049943	3037193	3026089
TUR	Labor force/total population	3.50E-01	3.50E-01	3.51E-01	3.42E-01	3.70E-01
ARM	Labor force/total population	0.421671	0.425827	0.429529	0.434801	0.422604
TUR	Research and development expenditure (% GDP)	0.640886	0.724104	0.664071	..	..
ARM	Research and development expenditure (% GDP)	0.184634	0.279868	0.252548	..	..
TUR	Researchers in R&D (per million people)	338.2898	327.7061	341.4328	..	..
ARM	Researchers in R&D (per million people)	1491.888	1659.856	1615.441	1536.617	..
TUR	School enrollment, secondary (% gross)	..	77.84357	81.51694	85.30035	..
ARM	School enrollment, secondary (% gross)	86.33597	84.99809	84.26252	82.82672	91.42068
TUR	School enrollment, tertiary (% gross)	23.14979	23.3417	24.3866	28.01402	..
ARM	School enrollment, tertiary (% gross)	23.60801	24.92038	26.45917	24.99083	26.1993
TUR	Technicians in R&D (per million people)	..	36.95391	36.5267	..	..
ARM	Technicians in R&D (per million people)	121.0253	135.4119	147.8717	103.0557	..

Sources: Food and Agriculture Organization, International Energy Agency, International Labour Organization, United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics.

At the same time, Table 1 indicates that Turkey is spending a greater percentage of the GDP on research and development, 0.66 percent during 2002, while Armenia was spending just 0.25 percent of the GDP. This implies that Turkey might be able to reduce the advantage that Armenia has with respect to its relatively higher endowment of researchers and technicians. According to Stolper-Samuelson theorem, when Turkey opens the borders and trade increases between Armenia and Turkey, the abundant factor in Armenia would benefit, while scarce factor would lose. This implies that in the case of Armenia skilled labor, which is relatively more abundant, would benefit while unskilled labor would suffer. Besides focusing on the relative numbers of researchers and technicians, it is important to consider also the quality of education in both countries. It could be argued that in certain subjects the quality of education in Turkey is superior to the quality of education in Armenia, while in other topics Armenia might have a higher quality of education.

There is an interesting study by Spilimbergo, Londono and Szekely (1999), which suggests that with trade liberalization and increasing openness, the capital abundant country would experience a reduction in income inequality, while the skill-abundant country would experience an increase in income inequality. Based on this study and if we accept that Armenia relative to Turkey is a skill-abundant country, then when Turkey opens the borders, income inequality in Armenia would increase.

In the case of labor force, table one indicates that Turkey has relatively more number of people in the labor force than Armenia; however Armenia has a higher fraction of its population in the labor force. When a country exports a factor, this could indicate that the factor that is being exported is abundant in that country. During 1990s a high percentage of the population left Armenia to find jobs in former Soviet republics and other countries, which could imply that labor is abundant in Armenia. Turkey also exports labor, especially to Europe. Based on these ambiguous data and information, it is difficult to determine which country has a comparative advantage in the production of labor intensive goods.

Energy use, kilogram of oil equivalent per capita, is higher in Turkey than in Armenia. During 2003 Turkey used 1117 kilogram of oil equivalent energy per capita, while Armenia used just 660. Also as we already stated Turkey has more tractors per hector. These data could indicate that capital is relatively more abundant in Turkey than in Armenia.

In the economic literature there are controversies about the predictive power of the Hecksher-Ohlin theory, which predicts the economic sectors that should have comparative advantage and should be able to export. There are also difficulties with measuring labor abundance and capital abundance, Leontief (1956), Baldwin (1971), Stern and Maskus (1981).

Revealed Comparative Advantage

The second method that we will use to determine the manufacturing sectors that would benefit or suffer when Turkey opens the borders has to do with the widely used method of Revealed Comparative Advantage (RCA) developed by Bela Balassa (1986). Basically the idea of RCA is that if a country is able to export significant amount of a product, then it implies that it could produce that product efficiently and has comparative advantage in its production.

In the case of Armenia, this concept could be useful for products that Armenia is able to export, and this method could reveal that Armenia has comparative advantage in the production of these products. However if this method indicates that currently Armenia doesn't have RCA in the production of certain products, this result might not be accurate because of the blockade and the fact that Armenia's economy is small, while Turkey's economy is relatively large. It is possible that currently Armenia is producing a product and is not able to export it. But when Turkey opens the borders, Armenia might be able to export that product to Turkey, and the availability of Turkish markets could generate new opportunities for some Armenian products that Armenia could produce efficiently and cheaply.

In the case of Turkey, the opening of the border shouldn't have an effect on the list of economic sectors where currently Turkey has comparative advantage nor on the list of sectors that it doesn't have comparative advantage because Armenian markets are relatively small. This implies that in the case of Turkish economic sectors, the current results of the method of RCA wouldn't change significantly when Turkey opens the borders; therefore, the concept of RCA currently could generate more accurate results for Turkey than for Armenia.

To measure RCA of economic sectors in Armenia and Turkey, we need to calculate for each country:

--Value of export of each sector i, Xi
--Value of import of each sector i, Mi
--then calculate revealed comparative advantage of each sector, RCAi

$$RCAi = (Xi - Mi) / (Xi + Mi) \quad (1)$$

Table 2 provides the values of exports and imports of 97 manufacturing sectors in Turkey and Armenia. The values are in US dollar and for the year 2005. When the RCA of a sector is one 1.0, it implies that imports are zero, meaning that that country is producing the product, satisfying the domestic need and exporting some of it. This implies that this country is able to produce efficiently and has comparative advantage in its production. On the other hand when RCA is –1, it implies that the country is not able to export this product and is importing to satisfy its all or part of domestic needs of this product.

Table 2. Armenian and Turkish Exports, Imports and RCA of each sector, 2005, (thous. US$)

Sector	Sector Name	Turkey Export	Turkey Import	Armenia Export	Armenia Import	RCA Turkey	RCA Armenia
01	LIVE ANIMALS	5,162	14,074	50.4	1,280.5	-0.46	-0.92
02	MEAT AND EDIBLE MEAT OFFAL	36,204	277	412.8	28,397.0	0.98	-0.97
03	FISH AND CRUSTACEANS, MOL	204,904	67,913	2,929.6	1,758.0	0.50	0.25
04	DAIRY PRODUCE; BIRDS'EGGS;	79,602	75,787	3,836.1	13,867.1	0.02	-0.57
05	PRODUCTS OF ANIMAL ORIGIN,	40,638	31,223	8.3	94.1	0.13	-0.84
06	LIVE TREES AND OTHER PLANT	35,751	33,764	48.7	936.9	0.03	-0.90
07	EDIBLE VEGETABLES AND CER	531,893	78,628	75.6	3,257.6	0.74	-0.95
08	EDIBLE FRUIT AND NUTS; PEEL	2,499,524	154,099	2,045.5	12,122.1	0.88	-0.71
09	COFFEE,TEA,MATE AND SPICE	64,348	39,647	7,562.8	15,680.1	0.24	-0.35
10	CEREALS	114,634	188,881	1.6	53,745.2	-0.24	-1.00
11	PRODUCTS OF THE MILLING IND	483,488	14,990	10.6	9,216.4	0.94	-1.00
12	OIL SEEDS AND OLEAGINOUS F	96,565	697,651	2.3	1,658.8	-0.76	-1.00
13	LAC; GUMS, RESINS AND OTHE	2,615	38,561	-	1,724.9	-0.87	-1.00
14	VEGETABLE PLAITING MATERIA	17,082	2,730	-	0.9	0.72	-1.00
15	ANIMAL OR VEGETABLE FATS A	511,299	764,397	249.3	26,287.4	-0.20	-0.98
16	PREPARATIONS OF MEAT, OF F	42,276	1,136	809.1	6,154.6	0.95	-0.77
17	SUGARS AND SUGAR CONFECT	202,226	43,789	62.5	29,302.4	0.64	-1.00
18	COCOA AND COCOA PREPARAT	242,736	181,535	168.1	13,754.7	0.14	-0.98
19	PREPARATIONS OF CEREALS,	347,413	75,684	132.8	7,225.1	0.64	-0.96
20	PREPARATIONS OF VEGETABL	1,281,121	46,611	7,318.4	7,976.8	0.93	-0.04
21	MISCELLANEOUS EDIBLE PREP	235,515	277,382	594.9	7,088.2	-0.08	-0.85
22	BEVERAGES, SPIRITS AND VIN	148,104	51,142	84,295.8	15,352.6	0.49	0.69
23	RESIDUES AND WASTE FROM T	15,423	341,256	35.6	10,703.6	-0.91	-0.99
24	TOBACCO AND MANUFACTURE	590,047	275,504	3,461.6	48,354.6	0.36	-0.87
25	SALT; SULPHUR; EARTHS AND	1,122,890	265,013	14,872.6	2,377.6	0.62	0.72
26	ORES, SLAG AND ASH	277,918	395,028	51,425.6	30,658.2	-0.17	0.25
27	MINERAL FUELS, MINERAL OILS	2,637,722	21,232,662	27,187.3	264,366.4	-0.78	-0.81
28	INORGANIC CHEMICALS; ORGA	372,789	778,501	391.0	10,942.6	-0.35	-0.93
29	ORGANIC CHEMICALS	249,905	3,525,897	441.3	4,583.6	-0.87	-0.82
30	PHARMACEUTICAL PRODUCTS	282,539	2,849,105	1,359.3	49,413.5	-0.82	-0.95
31	FERTILISERS	37,755	754,689	-	6,227.4	-0.90	-1.00
32	TANNING OR DYEING EXTRACTS	234,143	1,122,999	80.0	7,119.3	-0.65	-0.98
33	ESSENTIAL OILS AND RESINOID	256,533	530,053	401.8	15,233.2	-0.35	-0.95
34	SOAP, ORGANIC SURFACE-ACTI	412,027	341,699	221.8	10,737.0	0.09	-0.96
35	ALBUMINOIDAL SUBSTANCES;	34,591	236,345	100.5	3,756.5	-0.74	-0.95
36	EXPLOSIVES; PYROTECHNIC PR	13,100	20,222	0.2	1,565.8	-0.21	-1.00
37	PHOTOGRAPHIC OR CINEMATO	7,537	213,670	48.7	971.9	-0.93	-0.90
38	MISCELLANEOUS CHEMICAL PR	154,474	1,084,560	71.8	7,888.6	-0.75	-0.98
39	PLASTICS AND ARTICLES THER	1,720,389	5,782,007	1,054.3	30,745.7	-0.54	-0.93
40	RUBBER AND ARTICLES THERE	1,008,558	1,202,594	7,621.8	17,554.1	-0.09	-0.39
41	RAW HIDES AND SKINS (OTHER	87,461	471,966	1,633.5	116.3	-0.69	0.87
42	ARTICLES OF LEATHER; SADDL	330,179	275,451	10.6	2,059.5	0.09	-0.99
43	FURSKINS AND ARTIFICAL FUR;	155,130	83,585	2.9	1,114.0	0.30	-0.99
44	WOOD AND ARTICLES OF WOO	247,863	793,825	958.2	11,045.0	-0.52	-0.84
45	CORK AND ARTICLES OF CORK	320	5,705	779.7	1,772.7	-0.89	-0.39

46	MANUFACTURES OF STRAW, O	511	10,361	0.1	43.8	-0.91	-1.00
47	PULP OF WOOD OR OF OTHER	937	277,763	-	93.7	-0.99	-1.00
48	PAPER AND PAPERBOARD; AR	584,800	1,762,838	2,088.5	27,085.0	-0.50	-0.86
49	PRINTED BOOKS, NEWSPAPER	49,437	137,892	3,301.5	5,572.3	-0.47	-0.26
50	SILK	4,557	29,200	-	4.7	-0.73	-1.00
51	WOOL, FINE OR COARSE ANIM	180,202	409,894	63.6	143.2	-0.39	-0.38
52	COTTON	1,178,655	2,076,911	377.4	3,272.6	-0.28	-0.79
53	OTHER VEGETABLE TEXTILE FIB	25,092	180,966	0.2	34.2	-0.76	-0.99
54	MAN-MADE FILAMENTS	893,748	1,118,300	630.3	1,680.3	-0.11	-0.45
55	MAN-MADE STAPLE FIBRES	960,919	1,135,713	211.4	2,346.8	-0.08	-0.83
56	WADDING, FELT AND NONWOV	178,876	263,567	658.3	1,661.1	-0.19	-0.43
57	CARPETS AND OTHER TEXTILE	669,831	144,570	2,396.2	1,724.0	0.64	0.16
58	SPECIAL WOVEN FABRICS; TUF	549,624	235,428	42.7	95.7	0.40	-0.38
59	IMPREGNATED, COATED, COVE	260,765	205,702	10.4	439.2	0.12	-0.95
60	KNITTED OR CROCHETED FABRI	570,884	170,535	722.9	1,760.5	0.54	-0.42
61	ARTICLES OF APPAREL AND CL	6,590,092	252,706	7,592.7	7,096.2	0.93	0.03
62	ARTICLES OF APPAREL AND CL	4,861,543	433,289	22,409.6	16,568.1	0.84	0.15
63	OTHER MADE UP TEXTILE ARTIC	1,969,441	65,009	1,900.7	9,197.8	0.94	-0.66
64	FOOTWEAR, GAITERS AND THE	215,736	412,715	101.4	11,118.7	-0.31	-0.98
65	HEADGEAR AND PARTS THERE	8,152	18,597	27.2	235.6	-0.39	-0.79
66	UMBRELLAS, SUN UMBRELLAS,	6,308	12,902	0.2	231.3	-0.34	-1.00
67	PREPARED FEATHERS AND DO	454	18,120	0.1	60.3	-0.95	-1.00
68	ARTICLES OF STONE, PLASTER,	753,199	247,457	1,777.4	3,909.5	0.51	-0.37
69	CERAMIC PRODUCTS	683,053	233,872	81.1	11,735.3	0.49	-0.99
70	GLASS AND GLASSWARE	631,185	441,727	3,532.4	18,247.8	0.18	-0.68
71	NATURAL OR CULTURED PEARL	1,314,088	4,226,726	336,340.8	347,634.3	-0.53	-0.02
72	IRON AND STEEL	4,968,245	9,409,697	243,717.4	38,652.6	-0.31	0.73
73	ARTICLES OF IRON OR STEEL	2,729,890	1,183,163	4,355.2	34,745.3	0.40	-0.78
74	COPPER AND ARTICLES THERE	511,106	1,420,513	50,569.7	2,141.2	-0.47	0.92
75	NICKEL AND ARTICLES THEREO	2,944	106,247	-	57.9	-0.95	-1.00
76	ALUMINIUM AND ARTICLES THE	874,220	1,228,114	4,445.6	8,939.5	-0.17	-0.34
78	LEAD AND ARTICLES THEREOF	3,510	83,032	25.7	5.3	-0.92	0.66
79	ZINC AND ARTICLES THEREOF	9,617	228,677	-	31.4	-0.92	-1.00
80	TIN AND ARTICLES THEREOF	636	24,755	-	76.7	-0.95	-1.00
81	OTHER BASE METALS; CERMET	2,665	40,242	17,983.1	413.6	-0.88	0.96
82	TOOLS, IMPLEMENTS, CUTLERY	65,801	341,269	769.3	3,037.7	-0.68	-0.60
83	MISCELLANEOUS ARTICLES OF	282,124	407,804	87.1	5,961.2	-0.18	-0.97
84	NUCLEAR REACTORS, BOILERS	5,239,563	16,316,150	16,886.7	156,620.2	-0.51	-0.81
85	ELECTRICAL MACHINERY AND E	5,423,871	9,713,785	11,113.8	75,865.9	-0.28	-0.74
86	RAILWAY OR TRAMWAY LOCO	30,938	83,099	1,370.3	418.4	-0.46	0.53
87	VEHICLES OTHER THAN RAILW	9,565,630	10,548,128	9,582.5	146,625.3	-0.05	-0.88
88	AIRCRAFT, SPACECRAFT, AND	247,591	314,089	219.5	4,493.7	-0.12	-0.91
89	SHIPS, BOATS AND FLOATING S	1,251,315	1,165,987	-	212.5	0.04	-1.00
90	OPTICAL, PHOTOGRAPHIC, CINE	179,701	2,471,539	1,948.3	28,391.8	-0.86	-0.87
91	CLOCKS AND WATCHES AND P	7,339	145,865	, 2,872.6	1,594.3	-0.90	0.29
92	MUSICAL INSTRUMENTS; PARTS	5,109	20,224	39.3	64.4	-0.60	-0.24
93	ARMS AND AMMUNITION; AND A	334,243	250875	-	-	0.14	-
94	FURNITURE; BEDDING, MATTRE	956,954	528,723	267.6	17,361.7	0.29	-0.97
95	TOYS, GAMES AND SPORTS RE	26,859	236,365	135.6	2,683.3	-0.80	-0.90
96	MISCELLANEOUS MANUFACTUR	79,484	293,281	136.2	1,973.0	-0.57	-0.87
97	WORKS OF ART, COLLECTORS'	418	6,769	352.6	3,188.3	-0.88	-0.80
	TOTAL	73,472,289	116,562,532	973,920.5	1,801,735.9	-0.23	-0.30

Source: National Statistical Service (NSS) of Republic of Armenia, www.armstat.am/publications/

According to table 2 there are few economic sectors where Armenia has high positive RCA, while Turkey has negative RCA. The RCA numbers of these sectors in Turkey and Armenia imply that Armenia is able to export successfully these products, while Turkey has to import relatively large amounts of these products. This could generate opportunity for Armenia to export these products to Turkey, when Turkey opens the borders. The sectors where Armenia has clear RCA are:

sector 41, raw hides and skins other than furskins and leather
sector 72, iron and steel
sector 74, copper and articles thereof
sector 78, lead and articles thereof

sector 81 other base metals and articles thereof
sector 86, railway or tramway locomotives, rolling-stock and part thereof, railway or tramway track fixtures and fitting parts, electro-mechanical signaling equipments.
sector 91, clocks and watches and parts thereof.

On the other hand, Table 2 indicates that there is relatively larger number of sectors where Turkey has high positive RCA numbers, while Armenia has negative numbers. These are sectors where Turkey is able to export relatively more than they are importing, while Armenia is importing relatively more than they are exporting, which could reveal that Turkey is able to produce efficiently and is able to export, while in these sectors Armenia is not able to produce efficiently and export more than it imports. This could imply that when Turkey opens the borders, Turkey would be able to export these products to Armenia, which could cause Armenian producers of these products to go bankrupt. These sectors are:

2, Meat and edible meat
7, Edible vegetables and certain roots
8, Edible fruit and nuts, peel of citrus fruit or melons
11, products of the milling industry, malt, starches, wheat gluten
14, vegetable planting materials, vegetable products not elsewhere specified
16, preparations of meat, of fish or mollusks
17, sugars and sugar confectionery
19, preparations of cereals, flour, starch or milk, pastry products
20, preparations of vegetables, fruit, nuts or other parts of plants
24, tobacco and manufactured tobacco substitutes
43, furskins and artificial fur, manufactures thereof
58, special woven fabrics, tufted textile fabrics, tapestries, trimmings, embroidery
59, impregnated, coated, covered or laminated textile fabrics,
60, knitted or crocheted fabrics
61, articles of apparel and clothing accessories, knitted or crocheted
63, other made up textile articles, worn clothing and worn textile articles
68, articles of stone, plaster, cement, asbestos, mica or similar materials
69, ceramic products
73, articles of iron or steel
94, furniture, bedding mattresses, mattress supports, cushions and similar stuff

In the case of the remaining sectors the RCA of Armenia and Turkey are quite close to each other, therefore, the RCA numbers do not generate clear results.

It is important to note that Table 1 indicates that Turkey's economy relative to Armenia is very large. The values of export and import of each sector in Turkey is much larger than that of Armenia. This implies that when Turkey opens the borders Armenia's economy would be affected much more than Turkey's economy.

Comparative Advantage based on Productivity Ratios, Wage Ratios and Exchange Rates

After investigating the economic literature on this subject it seems that out of the four methods that this paper is using to determine the sectors that would benefit and the sectors that would suffer when Turkey opens the borders the best method is the one adopted by MacDougall (1951) during 1950s, by Stern (1962) during 1960s and by Dornbusch, Fischer and Samuelson (1977) during 1970s.

Basically in this method we will compare relative productivity of an economic sector with the relative wages in Armenia and Turkey. Initially we will assume that exchange rates are constant. If in an economic sector the ratio of productivity of labor in Armenia over productivity of labor in Turkey is higher than the ratio of wages in Armenia over wages in Turkey, then in this sector Armenia would have comparative advantage. Let's assume that productivity in Armenia in a sector is twice as high as in Turkey and wages in both countries are the same, then Armenia would have comparative advantage in this sector. We would argue that when Turkey lifts the blockade then it is highly likely that this sector in Armenia would be able to compete with the Turkish products and export its product to Turkey.

In our view this method has the best predictive capability. It takes into consideration the relative productivity and relative wages of manufacturing sectors in Armenia and based on these information predicts the sectors that would be able to export when Turkey opens the borders. One difficulty in using this method is to have consistent recent data. Unfortunately the most recent consistent data between Turkey and Armenia that we were able to acquire was from 2000. Fortunately during the past 5 years, both Armenia's and Turkey's economies grew rapidly. This could imply that, during this period the productivity and wage ratios probably changed relatively small amount.

When we calculate productivity, it is better if we use physical output per labor; however, it is difficult to find adequate and comparable data. In this paper we use the value of output to calculate productivity of labor. Productivity of labor in Armenia in sector j is presented by b_{aj}, while productivity of labor in Turkey in sector j is presented by b_{tj}. Relative productivity or productivity ratio is presented by b_{aj} / b_{tj}. Some might suggest using overall productivity or total factor productivity, but this paper is trying to compare productivity with the price or the cost of the corresponding factor. Calculating the price of labor or wages is much easier than calculating the price of capital. Calculating wages for each manufacturing sector in Armenia accurately could be a challenge, but it would still generate much more reliable numbers than calculating the price of capital of each manufacturing sector in Armenia. Therefore, similar to the method in Dornbusch, Fischer and Samuelson (1977), this paper will use labor productivity instead of total factor productivity.

Wage in Armenia for sector j is presented by W_{aj} and in Armenia wages are in AMD. In Turkey, wage for sector j is presented by W_{tj} and is in Turkish Lira. In order to compare wages in Armenia with wages in Turkey, we convert wages in AMD and Lira into U.S. dollars. We multiply W_{aj} with number of U.S. dollars per AMD, e_a, and we get $W_{aj}e_a$, which represents wages in Armenia in U.S. dollars. Similarly we multiply W_{tj} with number of U.S., dollars per Turkish Lira, e_t and we get $W_{tj}e_t$, which represents wages in Turkey in U.S. dollars. Now we could calculate relative wages or the wage ratios, $W_{aj}e_a / W_{tj}e_t$.

In order to calculate these ratios for each sector we need data for the value of output, the number of employees and average wages. All these statistics should be consistent for the sectors of both Armenia and Turkey. At this stage the most recent and consistent set of data that we were able to generate was from 2000; therefore, we will generate the productivity and wage ratios for 2000. These data are based on statistics published by UNIDO and National Statistical Service of the Republic of Armenia. The tables that are used to generate the final results are presented in the Appendix A. The tables that present final results are presented in the paper. We focused on 52 industries representing three and four digits ISIC Revision 3 classification, see Appendix, Table A1, column one.

First we collected compatible data for each country and then we calculated the ratios. In Appendix Table A1, we compiled data representing the value of output, number of employees and average wage of each sector in Turkey. After dividing the value of output of each sector, column two, with

the corresponding number of employees, column three we generated the value of output per employee or productivity of labor of each sector, column four. We are using the value of the output per employee of each sector instead of the physical output per employee of each sector, because it was not possible to find consistent data on output of each sector in physical terms. In order to compare productivity of Turkish sectors with the productivity of corresponding sectors in Armenia we used exchange rates and expressed all the productivity numbers in terms of US dollar. We also expressed average wages of each sector in terms of US dollars, column five.

Next we generated productivity of labor or value of output per employee for each sector in Armenia. We followed the same procedure that we used to generate the productivity of labor of each sector in Turkey. Appendix Table A2 generates the value of output per employee for each manufacturing sector in Armenia. Column two of Table A2 represents the value of output of the 52 manufacturing sectors in US dollars. Column three represents the number of employees of each sector. When we divide the value of column two, productivity of labor, with the numbers in column three, we get output per employee or productivity of labor of each manufacturing sector in Armenia.

We have to allocate a separate table for the average wages for Armenia because UNIDO is not providing them. Appendix Table A3 generates the wages of the 52 manufacturing sectors in Armenia, in 2000 based on the wage data that are published by the National Statistical Service or Armenia, NSS. Unfortunately the NSS aggregates industrial production into fifteen sectors and provides the corresponding wage data. Table A3 provides average monthly wages for each of the 52 manufacturing sectors. Column one presents the names of the 52 sectors used by UNIDO. Column two presents the corresponding names of industrial production sectors used by the NSS for the wages. Column three presents the data of wages that the NSS provides. These are monthly wages per employee in US dollar.

Based on the results of Tables A1 and A2, column two of Table 3 generates the ratio of output per worker in Armenia over output per worker in Turkey for each of the 52 manufacturing sectors. Productivity of labor in Armenia in sector j is presented by b_{aj}, while productivity of labor in Turkey in sector j is presented by b_{tj}. Relative productivity or productivity ratio is presented by b_{aj} / b_{tj}. These ratios represent the productivity ratios between Armenia and Turkey.

Based on Tables A1 and A3, column three of Table 3 generates the ratio of monthly average wage in Armenia over monthly average wage in Turkey for each of the 52 manufacturing sectors. These ratios represent the average wage ratios between Armenia and Turkey. Wage in Armenia for sector j is presented by W_{aj} and in Armenia wages are in AMD. In Turkey wage for sector j is presented by W_{tj} and presented in Turkish Lira. In order to compare wages in Armenia with wages in Turkey, we convert wages in AMD and Lira into U.S. dollar. We multiply W_{aj} with number of U.S. dollars per AMD, e_a, and we get $W_{aj}e_a$, which represents wages in Armenia in U.S. dollar. Similarly we multiply W_{tj} with number of U.S. dollars per Turkish Lira, e_t and we get $W_{tj}e_t$, which represents wages in Turkey in U.S. dollars. Now we could calculate relative wages or the wage ratios, $W_{aj}e_a / W_{tj}e_t$.

Column four of Table 3 calculates the ratios of the productivity ratios over average wage ratios presents. We call these Final Ratios:

$$(b_{aj} / b_{tj}) / (W_{aj}e_a / W_{tj}e_t) \qquad (2)$$

In sectors where productivity ratios, $b_{aj} / b_{tj,}$ are higher than wage ratios, $W_{aj}e_a / W_{tj}e_t$, Armenia would have advantage over Turkey and Armenian producers of these sectors would be able to compete with the Turkish products. The corresponding numbers of these sectors in column four would be greater than one. When relative productivity over relative wages in a sector is less than

one, then Turkey would have advantage in the production of that product. Column five of Table 3 presents the significance of each sector in Armenia's economy. This column illustrates the share of each sector's production in the total production of manufacturing in Armenia. The Final Ratios would remain valid even if during this period one of the two countries experiences high level of inflation. If Turkey experiences high level of inflation, then both output per worker, $b_{tj,}$ and wages in Turkey, $W_{tj}e_{t,}$ would be high. This will cause both productivity and wage ratios to be low and the Final Ratios to remain more or less the same.

Table 3. Productivity and wages of Armenia Relative to Turkey

Industry (ISIC Revision 3)	Output per Worker in Armenia/ Output per Worker Turkey	Monthly Wage in Armenia/ Monthly Wage in Turkey	Relative Productivity / Relative Wages Column2 / Column3	Sector Output as a % of Total Manufacturing
Processed meat, fish, fruit, vegetables, fats (151)	0.092	0.106	0.86	2.479
Dairy products (1520)	0.085	0.082	1.04	2.333
Grain mill products; starches; animal feeds (153)	0.077	0.120	0.64	3.536
Other food products (154)	0.604	0.060	10.07	36.086
Beverages (155)	0.077	0.055	1.42	12.335
Tobacco products (1600)	0.202	0.046	4.43	5.860
Spinning, weaving and finishing of textiles (171)	0.011	0.038	0.28	0.117
Other textiles (172)	0.009	0.047	0.19	0.192
Knitted and crocheted fabrics and articles (1730)	0.046	0.079	0.58	0.425
Wearing apparel, except fur apparel (1810)	0.025	0.081	0.31	1.072
Tanning, dressing and processing of leather (191)	0.028	0.059	0.47	0.020
Footwear (1920)	0.063	0.054	1.18	0.148
Sawmilling and planking of wood (2010)	0.054	0.122	0.44	0.234
Products of wood, cork, straw, etc. (202)	0.027	0.073	0.37	0.198
Paper and paper products (210)	0.056	0.035	1.61	0.260
Publishing (221)	0.033	0.085	0.39	1.943
Printing and related service activities (222)	0.043	0.077	0.56	0.159
Refined petroleum products (2320)	0.007	0.025	0.26	0.025
Basic chemicals (241)	0.034	0.034	0.99	4.581
Other chemicals (242)	0.017	0.037	0.47	0.467
Man-made fibres (2430)	0.004	0.034	0.13	0.003
Rubber products (251)	0.008	0.043	0.18	0.066
Plastic products (2520)	0.024	0.087	0.28	0.208
Glass and glass products (2610)	0.032	0.042	0.76	0.344
Non-metallic mineral products n.e.c. (269)	0.044	0.083	0.53	3.315
Basic iron and steel (2710)	0.091	0.074	1.24	0.019
Basic precious and non-ferrous metals (2720)	0.168	0.082	2.06	8.850
Casting of metals (273)	0.026	0.101	0.26	0.321
Struct.metal products; tanks; steam generators (281)	0.058	0.059	0.98	0.613
Other metal products; metal working services (289)	0.025	0.061	0.40	0.391
General purpose machinery (291)	0.036	0.053	0.67	0.795
Special purpose machinery (292)	0.026	0.042	0.62	1.347
Domestic appliances n.e.c. (2930)	0.008	0.044	0.17	0.189
Office, accounting and computing machinery (3000)	0.002	0.053	0.04	0.050
Electric motors, generators and transformers (3110)	0.010	0.035	0.29	0.409
Electricity distribution & control apparatus (3120)	0.026	0.037	0.71	0.184
Insulated wire and cable (3130)	0.067	0.046	1.46	0.463
Accumulators, primary cells and batteries (3140)	0.045	0.048	0.94	0.080
Lighting equipment and electric lamps (3150)	0.011	0.068	0.16	0.041
Other electrical equipment n.e.c. (3190)	0.015	0.035	0.42	0.059
Electronic valves, tubes, etc. (3210)	0.004	0.051	0.08	0.021

TV/radio transmitters; line comm. apparatus (3220)	0.002	0.016	0.09	0.019
TV and radio receivers & associated goods (3230)	0.006	0.030	0.21	0.137
Medical, measuring, testing appliances, etc. (331)	0.018	0.048	0.37	0.327
Optical instruments & photographic equip. (3320)	0.024	0.068	0.36	0.021
Watches and clocks (3330)	0.284	0.075	3.79	0.222
Motor vehicles (3410)	0.009	0.028	0.32	0.099
Parts/accessories for automobiles (3430)	0.001	0.046	0.02	0.002
Transport equipment n.e.c. (359)	0.029	0.048	0.60	0.012
Furniture (3610)	0.045	0.060	0.76	0.273
Manufacturing n.e.c. (369)	0.124	0.155	0.80	8.640
Total manufacturing (D)	0.074	0.090	0.82	100.000

According to column two of Table 3, the productivity ratios output per employee in Armenia over output per employee in Turkey for all sectors are significantly less than one, which implies that productivity of labor in Armenia is much lower than productivity of labor in Turkey. Also the wage ratios, column three, for all sectors are significantly less than one, which implies that wages in Armenia are much lower than average wages in Turkey. In sectors where the wage ratios are lower than the productivity ratios, then lower wages in Armenia are compensating for lower productivity and in these sectors Armenia would have comparative advantage relative to Turkey and the ratio of the productivity ratio over wage ratio, which are represented by column four, would be greater than one.

According to column four out of 52 sectors, there are four sectors where the productivity ratios over wage ratios or Final ratios are greater than two and where Armenia has a significant comparative advantage. These sectors generate 51 percent of manufacturing output. These sectors are:

--Other food products, ISIC 154, which generates 36 percent of total manufacturing output.
--Tobacco products, ISIC 1600, about 6 percent of total manufacturing output.
--Basic precious and non-ferrous metals, ISIC 2720, about 9 percent of total output.
--Watches and clocks, ISIC 3330, just .02 percent of total output.

There are five sectors where the Final ratios of the forth column of Table 3 is between one and two, which implies that Armenia has some comparative advantage. Column five indicates five sectors that generate about 13 percent of total manufacturing production. These sectors are:

--Beverages, 155,
--Footwear, 1920
--Paper and paper products, 210
--Basic iron and steel, 2710
--Insulated wire and cable, 3130

There are also four sectors where the ratio is close to unity, which implies that it is not clear which country has comparative advantage in these sectors. The share of these sectors in total manufacturing is just 7.6 percent. These sectors are:

--Dairy products, 1520
--Basic chemicals, 241
--Structural metal products; tanks; steam generators, 281
--Accumulators, primary cells and batteries, 3140

In the remaining 39 sectors, column four generates Final ratios of less than one, which implies that in these sectors Turkey has comparative advantage. When Turkey opens the border, Armenian producers of these products, might not be able to compete with cheap Turkish imports and could face the possibility of bankruptcy. We could ignore eleven out of these 39 sectors,

because each one of these sectors generates less than .05 percent of total manufacturing output in Armenia. There are seventeen sectors, where the relative productivity ratios over relative wage ratios generate numbers less than 0.5 indicating that Turkey has significant amount of advantage in the production of these products. The total share of these sectors in the production of total manufacturing in Armenia is just 6.3 percent and the sector with the highest share generates only 1.9 percent of total manufacturing output. This implies that these seventeen sectors where Armenia is in a significant disadvantaged position are each small and together they generate a small portion of total manufacturing. This could imply that when Turkey opens the borders, only 6.3 percent of Armenian manufacturing production could have major difficulty in competing with the Turkish products.

According to column four, another eleven economic sectors generate Final ratios between .5 and .9. This implies that in these sectors Turkey would have some comparative advantage. One of these sectors, Manufacturing n.e.c. 369, includes the diamond sector, which represents 8.6 percent of Armenia's total manufacturing production. The expectation is that when Turkey opens the border the production of diamonds in Armenia, which is traded mostly with Belgium and Israel, wouldn't be affected. Excluding sector 369, the remaining 10 sectors generate 12.4 percent of total manufacturing production and the 27 sectors which have Final ratios of less than 0.90 represent about 19 percent of total manufacturing sector in Armenia. In other words, when Turkey opens the border only 19 percent of Armenia's manufacturing output might be in a clearly disadvantaged position relative to the Turkish products.

This positive outlook would clearly deteriorate, when we adjust the exchange rates and use the exchange rates of October 2006, instead of the exchange rates of 2000.

The Effect of Exchange Rates on Trade

Besides relative productivity and relative wages, the exchange rate also could affect the ability of a country to export. In this section we will investigate the effects of exchange rate changes on trade, while relative productivity and relative wages are held constant.

Table 3 generates Final ratios by using productivity, wage, and exchange rate data for 2000. Next we will use the productivity ratios, b_{aj} / b_{tj} and wages w_{aj}, w_{tj} of 2000, but we will use the exchange rates e_a, e_t of October 13, 2006. From 2000 to October 2006 the AMD appreciated from 539.5 AMD per US dollar to 382.75, while the Turkish Lira depreciated from 0.625 Turkish Lira per US dollar to 1.465.

When AMD appreciates, the number of U.S. dollars per AMD, e_a, gets larger and Final ratios get smaller. This causes Armenian manufacturing goods to become less competitive relative to Turkish manufacturing goods. On the other hand, when Turkish Lira depreciates, the number of U.S. dollars per Turkish Lira, e_t, gets smaller, which causes Final ratios to get smaller.

Clearly from 2000 to October 2006 Armenian manufacturers suffered from the appreciation of AMD and the depreciation of Turkish Lira. This implies that with the new exchange rates, when Turkey opens the borders, Armenian manufacturers would be in a more vulnerable situation than they were with the exchange rates of 2000.

Table A4 provides the Final ratios based on different exchange rates. Column two presents the Final ratios using the exchange rates of 2000, while column three provides the Final ratios based on October 13. 2006 exchange rates. Column four presents Final ratios, when we hold everything constant, including the exchange rate of Turkish Lira at the 2000 level and we only appreciate AMD by 30%. This change represents the appreciation of AMD from 539.5 AMD per U.S. dollar in 2000 to 382.75 in October 2006.

Using columns two and three of Table A4 and column five of Table 3, Table 4 summarizes the effect of the appreciation of AMD and the depreciation of Turkish Lira on Final ratios. Column one groups the Final ratios, R, of the 52 manufacturing sectors of Table A4 into five groups: Final ratios greater than 2, Final ratios between 2 and 1, etc… Column two indicates the shares of total manufacturing of the sectors with corresponding Final ratios. Column two of Table 4 is based on column five of table 3 and column two of table A4, while column three of Table 4 is based on column five of Table 3 and column three of Table A4.

Table 4. The Effect of Changes in Exchange Rates on Final Ratios

Final Ratios, R	Share of Total Manufacturing 2000 Exchange Rates	Share of Total Manufacturing Oct 13, 2006 Exchange Rates
R > 2	51%	36%
2< R > 1.1	13%	6.1%
1.1< R > .9	7.6%	0%
.5< R <.9	21.4%	8.8%
R < .5	6.3%	49%

Clearly the changes of exchange rates of AMD and Turkish Lira on Final ratios are significant. When we use the exchange rates of the year 2000, the Armenian manufacturing sectors with Final ratios of less than .9 generate 28 percent of total manufacturing output. But when we use the exchange rates of October 2006, that percentage jumps to 58 percent. In other words, the appreciation of AMD and the depreciation of Turkish Lira increase the percentage of Armenian manufacturing production that will have difficulty competing with Turkish product when Turkey opens the border, from 28 percent to 58 percent. Of course the appreciation of AMD makes Armenian manufacturing products less competitive relative to all its trading partners and not just relative to the Turkish products.

In this section we are basically using the assumption of "other things constant" and investigating the effect of the appreciation of Dram on the competitiveness of manufacturing sectors. Clearly in real world other things don't remain the same. Nonetheless, the result of this section implies that no matter what happens in the rest of the economy, appreciation of Dram would have a negative effect on the competitiveness of Armenian manufacturing sectors.

Ranking of Exports and Imports

The last method to find out the potential of Armenia exports to Turkey and Turkish exports to Armenia when Turkey opens the borders is developed by Israeli economists, Arnon, Spivak, and Weinblatt (1996). They designed this method to predict the potential of trade between Israel and its Arab neighbors, when the borders between Israel and Arab countries are opened. Based on this method, first we rank Armenian economic sectors that are currently able to export to other countries from the sector with the largest share of total export to the smallest. Then we rank the goods that Armenia imports, again from the largest to the smallest. We do the same exercise for Turkey. Then we generate two tables. In the first table we include the top exports of Armenia and the top imports of Turkey. In the second table, we include the top export sectors of Turkey and the top import sectors of Armenia.

If there is an economic sector which represents one of Armenia's top exporting sectors and one of Turkey's top importing sectors, then, when the borders are opened, there would be a high probability that Armenia would be able to export this product to Turkey. On the other hand, if there is an economic sector which represents one of Turkey's top exporting sectors and one of

Armenia's top importing sectors, then, in this sector Turkey has a high potential of exporting goods to Armenia.

In order to generate the table which includes the top exports of Armenia and the top imports of Turkey, first we rank the export of Armenia from the sector which has the highest share of total exports to the lowest. This information is represented by Table A5.
Then we rank the sectors in Turkey from the sector that has the highest share of total imports to the smallest. This information is provided by Table A6.

From Table A5 we copy the top twenty export sectors of Armenia and we assign them the letters Xa. Then from Table A6 we look at the top twenty import sectors of Turkey and we find out which sectors among these top Turkish import sectors correspond to the top twenty export sectors of Armenia and we represent these top Turkish sectors with the letters Mt. Table 5 combines these Armenian export sectors, Xa and Turkish import sectors, Mt.

Table 5. Top Armenia Export sectors, Xa and Major Turkish Import sectors, Mt

71	NATURAL OR CULTURED PEARLS, PRE	Xa,	Mt
72	IRON AND STEEL	Xa,	Mt
22	BEVERAGES, SPIRITS AND VINEGAR	Xa	
26	ORES, SLAG AND ASH	Xa	
74	COPPER AND ARTICLES THEREOF	Xa,	Mt
27	MINERAL FUELS, MINERAL OILS AND P	Xa,	Mt
62	ARTICLES OF APPAREL AND CLOTHIN	Xa	
81	OTHER BASE METALS; CERMETS; ARTI	Xa	
84	NUCLEAR REACTORS, BOILERS, MACH	Xa,	Mt
25	SALT; SULPHUR; EARTHS AND STONE;	Xa	
85	ELECTRICAL MACHINERY AND EQUIPM	Xa,	Mt
87	VEHICLES OTHER THAN RAILWAY OR T	Xa,	Mt
40	RUBBER AND ARTICLES THEREOF	Xa,	Mt
61	ARTICLES OF APPAREL AND CLOTHIN	Xa	
09	COFFEE,TEA,MATE AND SPICES	Xa	
20	PREPARATIONS OF VEGETABLES, FRU	Xa	
76	ALUMINIUM AND ARTICLES THEREOF	Xa,	Mt
73	ARTICLES OF IRON OR STEEL	Xa,	Mt
04	DAIRY PRODUCE; BIRDS'EGGS; NATUR	Xa	

According to Table 5, when Turkey opens the border, Armenia has the potential of exporting the following goods to Turkey because out of 97 sectors, these sectors are in the top twenty export sectors in Armenia and are in the top twenty Turkish Import sectors:

--Sector 71, Natural or cultured pearls, precious or semi-precious stones
--Sector 72, Iron and steel
--Sector 74, Copper and articles thereof
--Sector 27, Mineral fuels, mineral oils and products of their distillation
--Sector 84, Nuclear reactors, boilers, machinery and mechanical appliances
--Sector 85, Electrical machinery and equipment and parts thereof
--Sector 87, Vehicles other than railway or tramway rolling stock, and parts and accessories
--Sector 40, Rubber and articles thereof
--Sector 76, Aluminum and articles thereof

--Sector 73, Articles of iron or steel

In order to generate the table which includes the top exports of Turkey and the top imports of Armenia, first we rank the export of Turkey from the sector which has the highest share of total exports to the lowest. This information is represented by Table A7.

Then we rank the sectors in Armenia from the sector that has the highest share of total imports to the smallest. This information is provided by Table A8.

From Table A7 we copy the top twenty export sectors of Turkey and we assign them the letters Xt. Then from Table A8 we look at the top twenty import sectors of Armenia and we find out which sectors among these top Armenian import sectors correspond to the top twenty export sectors of Turkey and we represent these top Armenian import sectors with the letters Ma. Table 6 combines these Turkish export sectors, Xt and Armenian import sectors Ma.

Table 6. Top Turkish Export Sectors, Xt and Armenian Import Sectors, Ma

87	VEHICLES OTHER THAN RAILWAY OR TRAMWAY	Xt, Ma
61	ARTICLES OF APPAREL AND CLOTHING ACCES	Xt
85	ELECTRICAL MACHINERY AND EQUIPMENT AND	Xt, Ma
84	NUCLEAR REACTORS, BOILERS, MACHINERY A	Xt, Ma
72	IRON AND STEEL	Xt, Ma
62	ARTICLES OF APPAREL AND CLOTHING ACCES	Xt
73	ARTICLES OF IRON OR STEEL	Xt, Ma
27	MINERAL FUELS, MINERAL OILS AND PRODUCT	Xt, Ma
08	EDIBLE FRUIT AND NUTS; PEEL OF CITRUS FRU	Xt
63	OTHER MADE UP TEXTILE ARTICLES; SETS; WO	Xt
39	PLASTICS AND ARTICLES THEREOF	Xt, Ma
71	NATURAL OR CULTURED PEARLS, PRECIOUS O	Xt, Ma
20	PREPARATIONS OF VEGETABLES, FRUIT, NUTS	Xt
89	SHIPS, BOATS AND FLOATING STRUCTURES	Xt
52	COTTON	Xt
25	SALT; SULPHUR; EARTHS AND STONE; PLASTE	Xt
40	RUBBER AND ARTICLES THEREOF	Xt
55	MAN-MADE STAPLE FIBRES	Xt, Ma
94	FURNITURE; BEDDING, MATTRESSES, MATTRES	Xt, Ma

According to Table 6, when Turkey opens the border, out of Turkey's top twenty export sectors Turkey has the potential of exporting the following goods to Armenia, because out of 97 sectors, these sectors are in the top twenty Armenian import sectors:

--Sector 87, Vehicles other than railway or tramway rolling stock, and parts and accessories
--Sector 85, Electrical machinery and equipment and parts thereof
--Sector 84, Nuclear reactors, boilers, machinery and mechanical appliances
--Sector 72, Iron and steel
--Sector 73, Articles of iron or steel
--Sector 27, Mineral fuels, mineral oils and products of their distillation
--Sector 39, Plastics and articles thereof
--Sector 71, Natural or cultured pearls, precious or semi-precious stones
--Sector 55, Man made staple fibres

--Sector 94, Furniture, bedding, mattresses, mattress supports, cushions and similar stuff

This doesn't imply that these are the only sectors that Turkey has the potential to export manufactured goods to Armenia. These are just out of the top twenty export sectors of Turkey.

Intra-Industry Trade

It is interesting to note that out of these ten sectors, seven of them exist also in the list of potential top ten Armenian exports, see Table 5. This could indicate the possibility of intra-industry trade, when both countries produce the same products and sell them to each other, creates the potential for Armenia to produce and export goods to Turkey. Intra-industry trade creates opportunity to Armenian manufacturing sectors that do not have comparative advantage to produce and export goods to Turkey.

In the case of Armenia there could be two sources of intra-industry trade. One possible source of intra-industry trade is product differentiation. For example, Turkey might have comparative advantage in the production of cheese, but Armenia might be able to produce certain kinds of cheese and export it to Turkey. Turkish customers might be willing to purchase the Armenian cheese because it is different. Another source of intra-industry trade is geographic location. Turkey might have comparative advantage in the production of apparel relative to Armenia, but because Armenia is closer to Turkey's eastern provinces, Armenia might be able to export apparel to the eastern provinces in Turkey. This could occur if apparel production is concentrated in the Western Turkey. It might be more expensive to ship apparel from Western Turkey to eastern provinces than buying them from Armenia.

In determining international trade, cost of transportation plays an important role. When cost of transportation increases, the incentive of trade diminishes. Certain products, such as food, are costly to export because they might get spoiled during transportation. This implies that Turkey might have comparative advantage in the production of certain food products, but because of cost of transportation, Armenia might still be able to produce them and compete with the Turkish products in Armenia. With the development of improved road conditions and better transportation technology, such as refrigeration, cost of transportation becomes a less important factor in trade.

Distributional effects of trade liberalization

In economic literature the relationship between trade liberalization and economic growth is controversial, because trade could have a positive or/and somewhat negative effects on the growth and development of a country, Edwards, (1993). Stiglitz (2005), (2006) argues that trade liberalization, wouldn't guarantee higher economic growth and it could cause both poverty and inequality in a country to increase. He gives the example of Mexico, where one decade after NAFTA, mean real wages were lower and American agricultural subsidies made some of the poorest Mexican farmers worse off. Therefore in the case of Mexico free trade caused poverty and inequality to increase. At the same time in Mexico the growth rate during the decade following NAFTA was lower than the previous decade of 1980s.

An important result found in this paper is that when Turkey opens the borders, certain Armenian manufacturing sectors and consumers would benefit, while others would suffer. In international trade theory the assumption is that those who gain from trade liberalization would compensate those who suffer, and in general the country would benefit. In the real world the problem is that those who suffer are seldom compensated, Samuelson (2004.) In industrialized countries when workers lose their jobs because of trade there is safety net that they could rely on. In the United States Trade Adjustment Assistant program addresses specifically the dislocation of workers caused by free trade, Baiker and Rehavi, (2004). A primary reason for some people to oppose

trade liberalization is the negative affect of free trade on the employment of certain economic sectors. A Trade Adjustment Assistant program in Armenia, which would provide support to the workers who suffer from free trade, could reduce the political opposition of free trade.

A challenge that Armenia would face, when Turkey opens the borders, is to find out ways to get maximum benefit out of trade with Turkey and at the same time to minimize the downside of it. For example, if Turkey is subsidizing the production of an economic sector, after trade liberalization the producers of the corresponding sectors in Armenia might not be able to compete with the Turkish products and the Armenian workers of these sectors would suffer and lose their jobs. At the same time the consumers in Armenia would benefit because of the access of the cheaper Turkish products. The Armenia government could transfer some of the gains of the consumers to the producers and workers of the sectors that are suffering from trade through a Trade Adjustment Assistant program. In the United States Trade Adjustment Assistant program provides additional unemployment compensation and opportunities for retraining program to the workers who suffer from the trade liberalization, Magee (2001).

Conclusion

The three methods: relative productivity/relative wages, Revealed Comparative Advantage and ranking of exports and imports used in this paper to determine the economic sectors that would benefit and the economic sectors that would suffer when Turkey opens the border generated some consistent results. For example, ISIC 2720 and 2710, which correspond to HS sectors 72, 73, 74, 76, 78 and 81, are mentioned at least in the results of one of the three methods used in this paper as manufacturing sectors where Armenia has comparative advantage. One of the major productions of Armenia is copper and it is not surprising that sector HS 74 “Copper and articles thereof” and the corresponding ISIC 2720 “basic precious and non-ferrous metals” are sectors where Armenia has comparative advantage. Another sector where according to two methods Armenia has comparative advantage is HS 91 “clocks and watches and parts thereof” and the corresponding ISIC sector 3330, “watches and clocks”. Again this result is not surprising because in Armenia the production of watches and clocks is expanding. We should emphasize again that because Turkey’s economy is much larger than Armenia’s, when Turkey opens the borders, Armenia’s economy would be affected much more than Turkey’s.

In this paper we argued that the method which uses productivity and wage ratios has the best predictive power to identify the Armenian manufacturing sectors that would be able to compete and export when Turkey opens the borders. According to this method the number of sectors where Armenia has comparative advantage is much smaller than the number of sectors where Turkey has comparative advantage; however, the large number of manufacturing sectors where Turkey has comparative advantage, represent only 19 percent of total manufacturing output in Armenia. In every manufacturing sector Armenia had lower productivity and lower wages than Turkey; however the wages in Armenia relative to the wages in Turkey were lower than the productivity in Armenia relative to the productivity in Turkey. This gave some competitive edge to Armenian manufacturing sectors.

These results are based on data from the year 2000. We don’t expect that relative productivity and relative wages of Armenia and Turkey changed significantly during the past six years because both countries during this period experienced rapid economic growth. It is not the case that one country was growing rapidly while the other country was stagnating. Therefore, we expect that the main results of this report would remain the same if we use more recent data. If we assume that relative productivity and relative wages stayed the same, while the exchange rates of AMD and/or Turkish Lira changed, then the results adjust significantly. The appreciation of AMD and the depreciation of Lira were detrimental to Armenian manufacturing sectors and eroded the

competitive edge of many sectors in Armenia. Many manufacturing sectors in Armenia which were able to compete with the Turkish products became vulnerable to the Turkish imports.

An important observation is that the productivity of manufacturing sectors in Armenia is significantly less than the productivity in Turkey. Armenia could compete with some of the Turkish products because wages in Armenia are much lower than wages in Turkey. The goal in Armenia should be to raise the real wages and still be able to compete in the world market. Clearly, in order to raise wages and improve the standard of living of the population in Armenia, it is essential to improve productivity in Armenia. Improving productivity should be the focus of policy makers and analysts because the best method of increasing production of economic sectors and increasing the standard of living in Armenia is to improve productivity. Productivity could be improved, for example, by allocating more funds for education, and health care and by improving the infrastructure of the country such as telecommunication and by developing legal and financial institutions. Creating artificial protective measures, such as tariffs and quotas could have short run positive effects on the ability of certain sectors to produce, but in the long run, the best method to be able to produce and to improve living conditions, is to improve productivity.

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APPENDIX A

Table A1. Output per Employee and Average Wages in Turkey, 2000, US dollars

TURKEY Industry (ISIC Revision 3)	Output in Producer's Prices, USD	Number of Employees	Output per Employee USD	Monthly Wage per employee USD
	2000	2000	2000	2000
Processed meat, fish, fruit, vegetables, fats (151)	5,304,398,382	53,498	99,151	452
Dairy products (1520)	1,041,221,589	8,500	122,497	588
Grain mill products, animal feeds (153)	2,091,294,483	15,373	136,037	400
Other food products (154)	4,632,364,525	66,000	70,187	767
Beverages (155)	1,857,595,385	11,121	167,035	843
Tobacco products (1600)	2,411,249,827	18,942	127,296	1010
Spinning, weaving and finishing of textiles (171)	20,660,293,961	164,026	125,957	438
Other textiles (172)	1,654,221,684	34,776	47,568	355
Knitted & crocheted fabrics (1730)	1,063,631,354	23,466	45,326	314
Wearing apparel, except fur apparel (1810)	5,676,041,256	147,178	38,566	309
Dressing & processing of fur (1820)	51,383,636	792	64,878	241
Tanning and processing of leather (191)	375,523,117	6,886	54,534	345
Footwear (1920)	318,255,138	9,497	33,511	375
Sawmilling and planing of wood (2010)	91,726,332	2,694	34,048	242
Products of wood, cork, straw, etc. (202)	643,063,185	8,755	73,451	405
Paper and paper products (210)	2,052,931,895	22,505	91,221	851
Publishing (221)	1,745,733,692	6,662	262,043	673
Printing and related service activities (222)	338,091,403	5,528	61,160	743
Reproduction of recorded media (2230)	47,226,690	216	218,642	325
Coke oven products (2310)	16,824,518	167	100,746	402
Refined petroleum products (2320)	10,008,902,488	6,499	1,540,068	1735
Basic chemicals (241)	2,329,468,818	17,153	135,805	1283
Other chemicals (242)	5,758,797,924	37,633	153,025	1186
Man-made fibres (2430)	757,127,308	3,675	206,021	1306
Rubber products (251)	1,242,087,366	14,328	86,690	1026
Plastic products (2520)	2,163,080,587	28,123	76,915	507
Glass and glass products (2610)	1,165,744,456	13,565	85,938	1037
Non-metallic mineral products n.e.c. (269)	3,845,534,001	60,059	64,029	517
Basic iron and steel (2710)	6,234,028,584	41,502	150,210	1093
Basic precious and non-ferrous metals (2720)	1,483,455,784	11,889	124,775	839
Casting of metals (273)	410,950,732	8,688	47,301	679
Struct.metal products; tanks; steam gene. (281)	1,100,938,312	17,586	62,603	514
Other metal products & services (289)	1,652,635,039	33,934	48,701	499
General purpose machinery (291)	1,000,264,707	21,300	46,961	569
Special purpose machinery (292)	1,534,650,686	30,259	50,717	719
Domestic appliances n.e.c. (2930)	1,930,056,452	20,480	94,241	684
Office & computing. machinery (3000)	263,758,990	1,186	222,394	577
Electric motors & transformers (3110)	544,566,420	7,633	71,344	856
Electricity distribution (3120)	502,301,196	9,199	54,604	820
Insulated wire and cable (3130)	862,722,392	7,535	114,495	660
Accumulators and batteries (3140)	120,482,679	1,420	84,847	637

Lighting equipment and electric lamps (3150)	143,944,877	3,352	42,943	447
Other electrical equipment n.e.c. (3190)	379,446,545	7,765	48,866	865
Electronic valves, tubes, etc. (3210)	50,775,849	1,338	37,949	590
TV/radio transmitters (3220)	718,161,731	5,535	129,749	1849
TV and radio receivers (3230)	1,473,289,738	7,375	199,768	998
Medical, measuring, appliances, etc. (331)	336,124,091	5,563	60,421	628
Optical instruments & photog. Equip. (3320)	26,256,421	607	43,256	445
Watches and clocks (3330)	2,725,447	124	21,979	405
Motor vehicles (3410)	6,073,097,645	28,060	216,433	1087
Automobile bodies (3420)	136,996,906	2,762	49,601	472
Parts/accessories for automobiles (3430)	987,613,130	18,020	54,807	656
Building and repairing of ships and boats (351)	122,011,745	2,350	51,920	766
Railway/tramway locomotive (3520)	135,837,311	6,788	20,011	1073
Aircraft and spacecraft (3530)	176,523,887	2,578	68,473	1618
Transport equipment n.e.c. (359)	85,859,583	1,581	54,307	625
Furniture (3610)	1,101,379,758	24,068	45,761	346
Manufacturing n.e.c. (369)	578,261,840	7,679	75,304	369
Total manufacturing (D)	109,527,344,440	1,125,773	97,291	623

Source: United Nations Industrial Development Organization, UNIDO, International Yearbook of Industrial Statistics, 2004

Table A2. Output per Employee in Armenia, 2000, US Dollars

ARMENIA Industry (ISIC Revision 3)	Output in Producer's Prices, USD	Number of employees	Output per Employee, USD
Processed meat, fish, fruit, vegetables, fats (151)	8,904,541	979	9,096
Dairy products (1520)	8,381,835	809	10,361
Grain mill products; starches; animal feeds (153)	12,702,502	1,213	10,472
Other food products (154)	129,644,115	3,059	42,381
Beverages (155)	44,313,253	3,432	12,912
Tobacco products (1600)	21,052,827	820	25,674
Spinning, weaving and finishing of textiles (171)	418,906	314	1,334
Other textiles (172)	691,381	1,627	425
Knitted and crocheted fabrics and articles (1730)	1,525,487	726	2,101
Wearing apparel, except fur apparel (1810)	3,849,861	3,940	977
Tanning, dressing and processing of leather (191)	72,289	48	1,506
Footwear (1920)	530,120	250	2,120
Sawmilling and planing of wood (2010)	841,520	455	1,849
Products of wood, cork, straw, etc. (202)	711,770	356	1,999
Paper and paper products (210)	932,345	183	5,095
Publishing (221)	6,978,684	796	8,767
Printing and related service activities (222)	570,899	219	2,607
Refined petroleum products (2320)	90,825	9	10,092
Basic chemicals (241)	16,457,831	3,565	4,617
Other chemicals (242)	1,679,333	631	2,661
Man-made fibres (2430)	9,268	10	927
Rubber products (251)	235,403	344	684
Plastic products (2520)	748,842	408	1,835

Glass and glass products (2610)	1,236,330	445	2,778
Non-metallic mineral products n.e.c. (269)	11,911,029	4,226	2,819
Basic iron and steel (2710)	68,582	5	13,716
Basic precious and non-ferrous metals (2720)	31,794,254	1,517	20,959
Casting of metals (273)	1,154,773	940	1,228
Struct.metal products; tanks; steam generators (281)	2,203,892	609	3,619
Other metal products; metal working services (289)	1,405,005	1,175	1,196
General purpose machinery (291)	2,854,495	1,697	1,682
Special purpose machinery (292)	4,837,813	3,635	1,331
Domestic appliances n.e.c. (2930)	680,259	943	721
Office, accounting and computing machinery (3000)	177,943	424	420
Electric motors, generators and transformers (3110)	1,469,880	2,039	721
Electricity distribution & control apparatus (3120)	661,724	462	1,432
Insulated wire and cable (3130)	1,662,651	217	7,662
Accumulators, primary cells and batteries (3140)	287,303	76	3,780
Lighting equipment and electric lamps (3150)	148,285	323	459
Other electrical equipment n.e.c. (3190)	211,307	292	724
Electronic valves, tubes, etc. (3210)	74,143	480	154
TV/radio transmitters; line comm. apparatus (3220)	68,582	340	202
TV and radio receivers and associated goods (3230)	493,049	387	1,274
Medical, measuring, testing appliances, etc. (331)	1,175,162	1,076	1,092
Optical instruments & photographic equipment (3320)	74,143	70	1,059
Watches and clocks (3330)	798,888	128	6,241
Motor vehicles (3410)	354,032	186	1,903
Parts/accessories for automobiles (3430)	5,561	94	59
Transport equipment n.e.c. (359)	42,632	27	1,579
Furniture (3610)	980,538	473	2,073
Manufacturing n.e.c. (369)	31,041,705	3,316	9,361
Total manufacturing (D)	359,262,280	49,831	7,210

Source: United Nations Industrial Development Organization, National Statistical Service of Republic of Armenia.

Table A3. Monthly wages per employee in Armenia, in 2000, in US Dollars, (540 AMD per Dollar)

ISIC Revision 3 Industrial Classification	NSS Industrial Classification	Monthly Wages per employee
Processed meat, fish, fruit, vegetables, fats (151)	Processed food	47.9
Dairy products (1520)	Processed food	47.9
Grain mill products; starches; animal feeds (153)	Processed food	47.9
Other food products (154)	Food industry	46.0
Beverages (155)	Food industry	46.0
Tobacco products (1600)	Food industry	46.0
Spinning, weaving and finishing of textiles (171)	Textile	16.8
Other textiles (172)	Textile	16.8
Knitted and crocheted fabrics and articles (1730)	Clothing	24.9
Wearing apparel, except fur apparel (1810)	Clothing	24.9
Tanning, dressing and processing of leather (191)	Leather, fur and shoe manufacturing	20.2

Footwear (1920)	Leather, fur and shoe manufacturing	20.2
Sawmilling and planing of wood (2010)	logging, wood-working, pulp paper industry	29.6
Products of wood, cork, straw, etc. (202)	logging, wood-working, pulp paper industry	29.6
Paper and paper products (210)	logging, wood-working, pulp paper industry	29.6
Publishing (221)	Other	57.0
Printing and related service activities (222)	Other	57.0
Refined petroleum products (2320)	Chemical and petrochemical industry	43.9
Basic chemicals (241)	Chemical and petrochemical industry	43.9
Other chemicals (242)	Chemical and petrochemical industry	43.9
Man-made fibres (2430)	Chemical and petrochemical industry	43.9
Rubber products (251)	Chemical and petrochemical industry	43.9
Plastic products (2520)	Chemical and petrochemical industry	43.9
Glass and glass products (2610)	Chemical and petrochemical industry	43.9
Non-metallic mineral products n.e.c. (269)	Building materials industry	43.2
Basic iron and steel (2710)	Ferrous metallurgy	80.6
Basic precious and non-ferrous metals (2720)	Non-ferrous metallurgy	68.6
Casting of metals (273)	Non-ferrous metallurgy	68.6
Struct.metal products; tanks; steam generators (281)	Machinery and metalworking	30.3
Other metal products; metal working services (289)	Machinery and metalworking	30.3
General purpose machinery (291)	Machinery and metalworking	30.3
Special purpose machinery (292)	Machinery and metalworking	30.3
Domestic appliances n.e.c. (2930)	Machinery and metalworking	30.3
Office, accounting and computing machinery (3000)	Machinery and metalworking	30.3
Electric motors, generators and transformers (3110)	Machinery and metalworking	30.3
Electricity distribution & control apparatus (3120)	Machinery and metalworking	30.3
Insulated wire and cable (3130)	Machinery and metalworking	30.3
Accumulators, primary cells and batteries (3140)	Machinery and metalworking	30.3
Lighting equipment and electric lamps (3150)	Machinery and metalworking	30.3
Other electrical equipment n.e.c. (3190)	Machinery and metalworking	30.3
Electronic valves, tubes, etc. (3210)	Machinery and metalworking	30.3
TV/radio transmitters; line comm. apparatus (3220)	Machinery and metalworking	30.3
TV and radio receivers and associated goods (3230)	Machinery and metalworking	30.3
Medical, measuring, testing appliances, etc. (331)	Machinery and metalworking	30.3
Optical instruments & photographic equipment (3320)	Machinery and metalworking	30.3
Watches and clocks (3330)	Machinery and metalworking	30.3
Motor vehicles (3410)	Machinery and metalworking	30.3
Parts/accessories for automobiles (3430)	Machinery and metalworking	30.3
Transport equipment n.e.c. (359)	Machinery and metalworking	30.3
Furniture (3610)	Light industry	20.7
Manufacturing n.e.c. (369)	Other	57.0
Total manufacturing (D)	Total	56.3

Source: National Statistical Service of Republic of Armenia, Statistical Yearbook of Armenia, 2001.

Table A4. The Effect of Changes in Exchange Rates on Final Ratios

Industry (ISIC Revision 3)	Final Ratios	Final Ratios	Final Ratios
	2000 Exchange Rates	Oct 13, 2006 Exchange Rates	30% Appreciation of AMD
Processed meat, fish, fruit, vegetables, fats (151)	0.86	0.26	0.61
Dairy products (1520)	1.04	0.31	0.73
Grain mill products; starches; animal feeds (153)	0.64	0.19	0.45
Other food products (154)	10.07	3.05	7.05
Beverages (155)	1.42	0.43	0.99
Tobacco products (1600)	4.43	1.34	3.10
Spinning, weaving and finishing of textiles (171)	0.28	0.08	0.19
Other textiles (172)	0.19	0.06	0.13
Knitted and crocheted fabrics and articles (1730)	0.58	0.18	0.41
Wearing apparel, except fur apparel (1810)	0.31	0.10	0.22
Tanning, dressing and processing of leather (191)	0.47	0.14	0.33
Footwear (1920)	1.18	0.36	0.82
Sawmilling and planing of wood (2010)	0.44	0.13	0.31
Products of wood, cork, straw, etc. (202)	0.37	0.11	0.26
Paper and paper products (210)	1.61	0.49	1.12
Publishing (221)	0.39	0.12	0.28
Printing and related service activities (222)	0.56	0.17	0.39
Refined petroleum products (2320)	0.26	0.08	0.18
Basic chemicals (241)	0.99	0.30	0.70
Other chemicals (242)	0.47	0.14	0.33
Man-made fibres (2430)	0.13	0.04	0.09
Rubber products (251)	0.18	0.06	0.13
Plastic products (2520)	0.28	0.08	0.19
Glass and glass products (2610)	0.76	0.23	0.53
Non-metallic mineral products n.e.c. (269)	0.53	0.16	0.37
Basic iron and steel (2710)	1.24	0.37	0.87
Basic precious and non-ferrous metals (2720)	2.06	0.62	1.44
Casting of metals (273)	0.26	0.08	0.18
Struct.metal products;tanks;steam generators (281)	0.98	0.30	0.69
Other metal products; metal working services (289)	0.40	0.12	0.28
General purpose machinery (291)	0.67	0.20	0.47
Special purpose machinery (292)	0.62	0.19	0.44
Domestic appliances n.e.c. (2930)	0.17	0.05	0.12
Office, accounting and computing machinery (3000)	0.04	0.01	0.03
Electric motors, generators and transformers (3110)	0.29	0.09	0.20
Electricity distribution & control apparatus (3120)	0.71	0.21	0.50
Insulated wire and cable (3130)	1.46	0.44	1.02
Accumulators, primary cells and batteries (3140)	0.94	0.28	0.66
Lighting equipment and electric lamps (3150)	0.16	0.05	0.11
Other electrical equipment n.e.c. (3190)	0.42	0.13	0.30
Electronic valves, tubes, etc. (3210)	0.08	0.02	0.06
TV/radio transmitters; line comm. apparatus (3220)	0.09	0.03	0.07
TV and radio receivers and associated goods (3230)	0.21	0.06	0.15

Medical, measuring, testing appliances, etc. (331)	0.37	0.11	0.26
Optical instruments & photographic equip. (3320)	0.36	0.11	0.25
Watches and clocks (3330)	3.79	1.15	2.66
Motor vehicles (3410)	0.32	0.10	0.22
Parts/accessories for automobiles (3430)	0.02	0.01	0.02
Transport equipment n.e.c. (359)	0.60	0.18	0.42
Furniture (3610)	0.76	0.23	0.53
Manufacturing n.e.c. (369)	0.80	0.24	0.56
Total manufacturing (D)	0.82	0.25	0.57

Table A5. Armenian Exports Ranked as a Share of Total Exports

Chapter	Chapter Name	Armenia Export, thous. US$	Armenia Import, thous. US$	Export Share	Import Share
93	ARMS AND AMMUNITION; AND AC	-	-	-	-
71	NATURAL OR CULTURED PEARL	336,340.8	347,634.3	34.53%	19.29%
72	IRON AND STEEL	243,717.4	38,652.6	25.02%	2.15%
22	BEVERAGES, SPIRITS AND VINEG	84,295.8	15,352.6	8.66%	0.85%
26	ORES, SLAG AND ASH	51,425.6	30,658.2	5.28%	1.70%
74	COPPER AND ARTICLES THERE	50,569.7	2,141.2	5.19%	0.12%
27	MINERAL FUELS, MINERAL OILS A	27,187.3	264,366.4	2.79%	14.67%
62	ARTICLES OF APPAREL AND CL	22,409.6	16,568.1	2.30%	0.92%
81	OTHER BASE METALS; CERMET	17,983.1	413.6	1.85%	0.02%
84	NUCLEAR REACTORS, BOILERS,	16,886.7	156,620.2	1.73%	8.69%
25	SALT; SULPHUR; EARTHS AND S	14,872.6	2,377.6	1.53%	0.13%
85	ELECTRICAL MACHINERY AND E	11,113.8	75,865.9	1.14%	4.21%
87	VEHICLES OTHER THAN RAILWA	9,582.5	146,625.3	0.98%	8.14%
40	RUBBER AND ARTICLES THERE	7,621.8	17,554.1	0.78%	0.97%
61	ARTICLES OF APPAREL AND CL	7,592.7	7,096.2	0.78%	0.39%
09	COFFEE,TEA,MATE AND SPICES	7,562.8	15,680.1	0.78%	0.87%
20	PREPARATIONS OF VEGETABLE	7,318.4	7,976.8	0.75%	0.44%
76	ALUMINIUM AND ARTICLES THER	4,445.6	8,939.5	0.46%	0.50%
73	ARTICLES OF IRON OR STEEL	4,355.2	34,745.3	0.45%	1.93%
04	DAIRY PRODUCE; BIRDS'EGGS;	3,836.1	13,867.1	0.39%	0.77%
70	GLASS AND GLASSWARE	3,532.4	18,247.8	0.36%	1.01%
24	TOBACCO AND MANUFACTURED	3,461.6	48,354.6	0.36%	2.68%
49	PRINTED BOOKS, NEWSPAPERS	3,301.5	5,572.3	0.34%	0.31%
03	FISH AND CRUSTACEANS, MOLL	2,929.6	1,758.0	0.30%	0.10%
91	CLOCKS AND WATCHES AND PA	2,872.6	1,594.3	0.29%	0.09%
57	CARPETS AND OTHER TEXTILE F	2,396.2	1,724.0	0.25%	0.10%
48	PAPER AND PAPERBOARD; ARTI	2,088.5	27,085.0	0.21%	1.50%
08	EDIBLE FRUIT AND NUTS; PEEL	2,045.5	12,122.1	0.21%	0.67%
90	OPTICAL, PHOTOGRAPHIC, CINE	1,948.3	28,391.8	0.20%	1.58%
63	OTHER MADE UP TEXTILE ARTIC	1,900.7	9,197.8	0.20%	0.51%
68	ARTICLES OF STONE, PLASTER,	1,777.4	3,909.5	0.18%	0.22%
41	RAW HIDES AND SKINS (OTHER	1,633.5	116.3	0.17%	0.01%
86	RAILWAY OR TRAMWAY LOCOM	1,370.3	418.4	0.14%	0.02%
30	PHARMACEUTICAL PRODUCTS	1,359.3	49,413.5	0.14%	2.74%

39	PLASTICS AND ARTICLES THERE	1,054.3	30,745.7	0.11%	1.71%
44	WOOD AND ARTICLES OF WOO	958.2	11,045.0	0.10%	0.61%
16	PREPARATIONS OF MEAT, OF FI	809.1	6,154.6	0.08%	0.34%
45	CORK AND ARTICLES OF CORK	779.7	1,772.7	0.08%	0.10%
82	TOOLS, IMPLEMENTS, CUTLERY,	769.3	3,037.7	0.08%	0.17%
60	KNITTED OR CROCHETED FABRI	722.9	1,760.5	0.07%	0.10%
56	WADDING, FELT AND NONWOVE	658.3	1,661.1	0.07%	0.09%
54	MAN-MADE FILAMENTS	630.3	1,680.3	0.06%	0.09%
21	MISCELLANEOUS EDIBLE PREPA	594.9	7,088.2	0.06%	0.39%
29	ORGANIC CHEMICALS	441.3	4,583.6	0.05%	0.25%
02	MEAT AND EDIBLE MEAT OFFAL	412.8	28,397.0	0.04%	1.58%
33	ESSENTIAL OILS AND RESINOIDS	401.8	15,233.2	0.04%	0.85%
28	INORGANIC CHEMICALS; ORGANI	391.0	10,942.6	0.04%	0.61%
52	COTTON	377.4	3,272.6	0.04%	0.18%
97	WORKS OF ART, COLLECTORS'	352.6	3,188.3	0.04%	0.18%
94	FURNITURE; BEDDING, MATTRES	267.6	17,361.7	0.03%	0.96%
15	ANIMAL OR VEGETABLE FATS AN	249.3	26,287.4	0.03%	1.46%
34	SOAP, ORGANIC SURFACE-ACTI	221.8	10,737.0	0.02%	0.60%
88	AIRCRAFT, SPACECRAFT, AND P	219.5	4,493.7	0.02%	0.25%
55	MAN-MADE STAPLE FIBRES	211.4	2,346.8	0.02%	0.13%
18	COCOA AND COCOA PREPARATI	168.1	13,754.7	0.02%	0.76%
96	MISCELLANEOUS MANUFACTURE	136.2	1,973.0	0.01%	0.11%
95	TOYS, GAMES AND SPORTS RE	135.6	2,683.3	0.01%	0.15%
19	PREPARATIONS OF CEREALS, F	132.8	7,225.1	0.01%	0.40%
64	FOOTWEAR, GAITERS AND THE	101.4	11,118.7	0.01%	0.62%
35	ALBUMINOIDAL SUBSTANCES; M	100.5	3,756.5	0.01%	0.21%
83	MISCELLANEOUS ARTICLES OF	87.1	5,961.2	0.01%	0.33%
69	CERAMIC PRODUCTS	81.1	11,735.3	0.01%	0.65%
32	TANNING OR DYEING EXTRACTS;	80.0	7,119.3	0.01%	0.40%
07	EDIBLE VEGETABLES AND CERT	75.6	3,257.6	0.01%	0.18%
38	MISCELLANEOUS CHEMICAL PR	71.8	7,888.6	0.01%	0.44%
51	WOOL, FINE OR COARSE ANIMAL	63.6	143.2	0.01%	0.01%
17	SUGARS AND SUGAR CONFECTI	62.5	29,302.4	0.01%	1.63%
01	LIVE ANIMALS	50.4	1,280.5	0.01%	0.07%
06	LIVE TREES AND OTHER PLANTS	48.7	936.9	0.01%	0.05%
37	PHOTOGRAPHIC OR CINEMATOG	48.7	971.9	0.01%	0.05%
58	SPECIAL WOVEN FABRICS; TUFT	42.7	95.7	0.00%	0.01%
92	MUSICAL INSTRUMENTS; PARTS	39.3	64.4	0.00%	0.00%
23	RESIDUES AND WASTE FROM T	35.6	10,703.6	0.00%	0.59%
65	HEADGEAR AND PARTS THEREO	27.2	235.6	0.00%	0.01%
78	LEAD AND ARTICLES THEREOF	25.7	5.3	0.00%	0.00%
11	PRODUCTS OF THE MILLING IND	10.6	9,216.4	0.00%	0.51%
42	ARTICLES OF LEATHER; SADDLE	10.6	2,059.5	0.00%	0.11%
59	IMPREGNATED, COATED, COVE	10.4	439.2	0.00%	0.02%
05	PRODUCTS OF ANIMAL ORIGIN, N	8.3	94.1	0.00%	0.01%
43	FURSKINS AND ARTIFICAL FUR;	2.9	1,114.0	0.00%	0.06%
12	OIL SEEDS AND OLEAGINOUS FR	2.3	1,658.8	0.00%	0.09%
10	CEREALS	1.6	53,745.2	0.00%	2.98%

36	EXPLOSIVES; PYROTECHNIC PR	0.2	1,565.8	0.00%	0.09%
53	OTHER VEGETABLE TEXTILE FIB	0.2	34.2	0.00%	0.00%
66	UMBRELLAS, SUN UMBRELLAS,	0.2	231.3	0.00%	0.01%
46	MANUFACTURES OF STRAW, OF	0.1	43.8	0.00%	0.00%
67	PREPARED FEATHERS AND DO	0.1	60.3	0.00%	0.00%
13	LAC; GUMS, RESINS AND OTHER	-	1,724.9	0.00%	0.10%
14	VEGETABLE PLAITING MATERIAL	-	0.9	0.00%	0.00%
31	FERTILISERS	-	6,227.4	0.00%	0.35%
47	PULP OF WOOD OR OF OTHER	-	93.7	0.00%	0.01%
50	SILK	-	4.7	0.00%	0.00%
75	NICKEL AND ARTICLES THEREOF	-	57.9	0.00%	0.00%
79	ZINC AND ARTICLES THEREOF	-	31.4	0.00%	0.00%
80	TIN AND ARTICLES THEREOF	-	76.7	0.00%	0.00%
89	SHIPS, BOATS AND FLOATING ST	-	212.5	0.00%	0.01%
	TOTAL	973,920.5	1,801,735.7	100.00%	100.00%

Source: National Statistical Service (NSS) of Republic of Armenia, www.armstat.am/publications/

Table A6. Turkish Imports Ranked as a Share of Total Imports, 2005

Chapter	Chapter Name	Turkey Export, thous. US$	Turkey Export Share	Turkey Import, thous. US$	Turkey Import Share
27	MINERAL FUELS, MINERAL OILS AND	2,637,722	3.59%	21,232,662	18.22%
84	NUCLEAR REACTORS, BOILERS, MA	5,239,563	7.13%	16,316,150	14.00%
87	VEHICLES OTHER THAN RAILWAY OR	9,565,630	13.02%	10,548,128	9.05%
85	ELECTRICAL MACHINERY AND EQUI	5,423,871	7.38%	9,713,785	8.33%
72	IRON AND STEEL	4,968,245	6.76%	9,409,697	8.07%
39	PLASTICS AND ARTICLES THEREOF	1,720,389	2.34%	5,782,007	4.96%
71	NATURAL OR CULTURED PEARLS, P	1,314,088	1.79%	4,226,726	3.63%
29	ORGANIC CHEMICALS	249,905	0.34%	3,525,897	3.02%
30	PHARMACEUTICAL PRODUCTS	282,539	0.38%	2,849,105	2.44%
90	OPTICAL, PHOTOGRAPHIC, CINEMAT	179,701	0.24%	2,471,539	2.12%
52	COTTON	1,178,655	1.60%	2,076,911	1.78%
48	PAPER AND PAPERBOARD; ARTICLE	584,800	0.80%	1,762,838	1.51%
74	COPPER AND ARTICLES THEREOF	511,106	0.70%	1,420,513	1.22%
76	ALUMINIUM AND ARTICLES THEREOF	874,220	1.19%	1,228,114	1.05%
40	RUBBER AND ARTICLES THEREOF	1,008,558	1.37%	1,202,594	1.03%
73	ARTICLES OF IRON OR STEEL	2,729,890	3.72%	1,183,163	1.02%
89	SHIPS, BOATS AND FLOATING STRU	1,251,315	1.70%	1,165,987	1.00%
55	MAN-MADE STAPLE FIBRES	960,919	1.31%	1,135,713	0.97%
32	TANNING OR DYEING EXTRACTS; TA	234,143	0.32%	1,122,999	0.96%
54	MAN-MADE FILAMENTS	893,748	1.22%	1,118,300	0.96%
38	MISCELLANEOUS CHEMICAL PRODU	154,474	0.21%	1,084,560	0.93%
44	WOOD AND ARTICLES OF WOOD; WO	247,863	0.34%	793,825	0.68%
28	INORGANIC CHEMICALS; ORGANIC O	372,789	0.51%	778,501	0.67%
15	ANIMAL OR VEGETABLE FATS AND OI	511,299	0.70%	764,397	0.66%
31	FERTILISERS	37,755	0.05%	754,689	0.65%

12	OIL SEEDS AND OLEAGINOUS FRUIT	96,565	0.13%	697,651	0.60%
33	ESSENTIAL OILS AND RESINOIDS; PE	256,533	0.35%	530,053	0.45%
94	FURNITURE; BEDDING, MATTRESSE	956,954	1.30%	528,723	0.45%
41	RAW HIDES AND SKINS (OTHER THA	87,461	0.12%	471,966	0.40%
70	GLASS AND GLASSWARE	631,185	0.86%	441,727	0.38%
62	ARTICLES OF APPAREL AND CLOTHI	4,861,543	6.62%	433,289	0.37%
64	FOOTWEAR, GAITERS AND THE LIKE;	215,736	0.29%	412,715	0.35%
51	WOOL, FINE OR COARSE ANIMAL HAI	180,202	0.25%	409,894	0.35%
83	MISCELLANEOUS ARTICLES OF BAS	282,124	0.38%	407,804	0.35%
26	ORES, SLAG AND ASH	277,918	0.38%	395,028	0.34%
34	SOAP, ORGANIC SURFACE-ACTIVE A	412,027	0.56%	341,699	0.29%
82	TOOLS, IMPLEMENTS, CUTLERY, SP	65,801	0.09%	341,269	0.29%
23	RESIDUES AND WASTE FROM THE F	15,423	0.02%	341,256	0.29%
88	AIRCRAFT, SPACECRAFT, AND PART	247,591	0.34%	314,089	0.27%
96	MISCELLANEOUS MANUFACTURED A	79,484	0.11%	293,281	0.25%
47	PULP OF WOOD OR OF OTHER FIBR	937	0.00%	277,763	0.24%
21	MISCELLANEOUS EDIBLE PREPARAT	235,515	0.32%	277,382	0.24%
24	TOBACCO AND MANUFACTURED TO	590,047	0.80%	275,504	0.24%
42	ARTICLES OF LEATHER; SADDLERY	330,179	0.45%	275,451	0.24%
25	SALT; SULPHUR; EARTHS AND STON	1,122,890	1.53%	265,013	0.23%
56	WADDING, FELT AND NONWOVENS;	178,876	0.24%	263,567	0.23%
61	ARTICLES OF APPAREL AND CLOTHI	6,590,092	8.97%	252,706	0.22%
93	ARMS AND AMMUNITION; AND ACCES	334,243	0.45%	250,875	0.22%
68	ARTICLES OF STONE, PLASTER, CEM	753,199	1.03%	247,457	0.21%
95	TOYS, GAMES AND SPORTS REQUISI	26,859	0.04%	236,365	0.20%
35	ALBUMINOIDAL SUBSTANCES; MODIF	34,591	0.05%	236,345	0.20%
58	SPECIAL WOVEN FABRICS; TUFTED T	549,624	0.75%	235,428	0.20%
69	CERAMIC PRODUCTS	683,053	0.93%	233,872	0.20%
79	ZINC AND ARTICLES THEREOF	9,617	0.01%	228,677	0.20%
37	PHOTOGRAPHIC OR CINEMATOGRAP	7,537	0.01%	213,670	0.18%
59	IMPREGNATED, COATED, COVERED	260,765	0.35%	205,702	0.18%
10	CEREALS	114,634	0.16%	188,881	0.16%
18	COCOA AND COCOA PREPARATIONS	242,736	0.33%	181,535	0.16%
53	OTHER VEGETABLE TEXTILE FIBRES;	25,092	0.03%	180,966	0.16%
60	KNITTED OR CROCHETED FABRICS	570,884	0.78%	170,535	0.15%
08	EDIBLE FRUIT AND NUTS; PEEL OF C	2,499,524	3.40%	154,099	0.13%
91	CLOCKS AND WATCHES AND PARTS	7,339	0.01%	145,865	0.13%
57	CARPETS AND OTHER TEXTILE FLOO	669,831	0.91%	144,570	0.12%
49	PRINTED BOOKS, NEWSPAPERS, PIC	49,437	0.07%	137,892	0.12%
75	NICKEL AND ARTICLES THEREOF	2,944	0.00%	106,247	0.09%
43	FURSKINS AND ARTIFICAL FUR; MAN	155,130	0.21%	83,585	0.07%
86	RAILWAY OR TRAMWAY LOCOMOTIVE	30,938	0.04%	83,099	0.07%
78	LEAD AND ARTICLES THEREOF	3,510	0.00%	83,032	0.07%
07	EDIBLE VEGETABLES AND CERTAIN	531,893	0.72%	78,628	0.07%
04	DAIRY PRODUCE; BIRDS'EGGS; NAT	79,602	0.11%	75,787	0.07%
19	PREPARATIONS OF CEREALS, FLOU	347,413	0.47%	75,684	0.06%
03	FISH AND CRUSTACEANS, MOLLUSC	204,904	0.28%	67,913	0.06%
63	OTHER MADE UP TEXTILE ARTICLES;	1,969,441	2.68%	65,009	0.06%

22	BEVERAGES, SPIRITS AND VINEGAR	148,104	0.20%	51,142	0.04%
20	PREPARATIONS OF VEGETABLES, FR	1,281,121	1.74%	46,611	0.04%
17	SUGARS AND SUGAR CONFECTIONE	202,226	0.28%	43,789	0.04%
81	OTHER BASE METALS; CERMETS; AR	2,665	0.00%	40,242	0.03%
09	COFFEE,TEA,MATE AND SPICES	64,348	0.09%	39,647	0.03%
13	LAC; GUMS, RESINS AND OTHER VE	2,615	0.00%	38,561	0.03%
06	LIVE TREES AND OTHER PLANTS; BU	35,751	0.05%	33,764	0.03%
05	PRODUCTS OF ANIMAL ORIGIN, NOT	40,638	0.06%	31,223	0.03%
50	SILK	4,557	0.01%	29,200	0.03%
80	TIN AND ARTICLES THEREOF	636	0.00%	24,755	0.02%
92	MUSICAL INSTRUMENTS; PARTS AND	5,109	0.01%	20,224	0.02%
36	EXPLOSIVES; PYROTECHNIC PRODU	13,100	0.02%	20,222	0.02%
65	HEADGEAR AND PARTS THEREOF	8,152	0.01%	18,597	0.02%
67	PREPARED FEATHERS AND DOWN A	454	0.00%	18,120	0.02%
11	PRODUCTS OF THE MILLING INDUST	483,488	0.66%	14,990	0.01%
01	LIVE ANIMALS	5,162	0.01%	14,074	0.01%
66	UMBRELLAS, SUN UMBRELLAS, WAL	6,308	0.01%	12,902	0.01%
46	MANUFACTURES OF STRAW, OF ESP	511	0.00%	10,361	0.01%
97	WORKS OF ART, COLLECTORS' PIEC	418	0.00%	6,769	0.01%
45	CORK AND ARTICLES OF CORK	320	0.00%	5,705	0.00%
14	VEGETABLE PLAITING MATERIALS; VE	17,082	0.02%	2,730	0.00%
16	PREPARATIONS OF MEAT, OF FISH O	42,276	0.06%	1,136	0.00%
02	MEAT AND EDIBLE MEAT OFFAL	36,204	0.05%	277	0.00%
	TOTAL	73,472,289	100.00%	116,562,532	100.00%

Source: Turkish Statistical Institute (TURKSTAT), www.turkstat.gov.tr

Table A7. Turkish Exports Ranked as a Share of Total Exports, 2005

Chapter	Chapter Name	Turkey Export, thous. US$	Turkey Export Share	Turkey Import, thous. US$	Turkey Import Share
87	VEHICLES OTHER THAN RAILWAY OR	9,565,630	13.02%	10,548,128	9.05%
61	ARTICLES OF APPAREL AND CLOTHI	6,590,092	8.97%	252,706	0.22%
85	ELECTRICAL MACHINERY AND EQUI	5,423,871	7.38%	9,713,785	8.33%
84	NUCLEAR REACTORS, BOILERS, MA	5,239,563	7.13%	16,316,150	14.00%
72	IRON AND STEEL	4,968,245	6.76%	9,409,697	8.07%
62	ARTICLES OF APPAREL AND CLOTHI	4,861,543	6.62%	433,289	0.37%
73	ARTICLES OF IRON OR STEEL	2,729,890	3.72%	1,183,163	1.02%
27	MINERAL FUELS, MINERAL OILS AND	2,637,722	3.59%	21,232,662	18.22%
08	EDIBLE FRUIT AND NUTS; PEEL OF C	2,499,524	3.40%	154,099	0.13%
63	OTHER MADE UP TEXTILE ARTICLES;	1,969,441	2.68%	65,009	0.06%
39	PLASTICS AND ARTICLES THEREOF	1,720,389	2.34%	5,782,007	4.96%
71	NATURAL OR CULTURED PEARLS, P	1,314,088	1.79%	4,226,726	3.63%
20	PREPARATIONS OF VEGETABLES, FR	1,281,121	1.74%	46,611	0.04%
89	SHIPS, BOATS AND FLOATING STRU	1,251,315	1.70%	1,165,987	1.00%
52	COTTON	1,178,655	1.60%	2,076,911	1.78%
25	SALT; SULPHUR; EARTHS AND STON	1,122,890	1.53%	265,013	0.23%
40	RUBBER AND ARTICLES THEREOF	1,008,558	1.37%	1,202,594	1.03%

55	MAN-MADE STAPLE FIBRES	960,919	1.31%	1,135,713	0.97%
94	FURNITURE; BEDDING, MATTRESSE	956,954	1.30%	528,723	0.45%
54	MAN-MADE FILAMENTS	893,748	1.22%	1,118,300	0.96%
76	ALUMINIUM AND ARTICLES THEREOF	874,220	1.19%	1,228,114	1.05%
68	ARTICLES OF STONE, PLASTER, CEM	753,199	1.03%	247,457	0.21%
69	CERAMIC PRODUCTS	683,053	0.93%	233,872	0.20%
57	CARPETS AND OTHER TEXTILE FLOO	669,831	0.91%	144,570	0.12%
70	GLASS AND GLASSWARE	631,185	0.86%	441,727	0.38%
24	TOBACCO AND MANUFACTURED TO	590,047	0.80%	275,504	0.24%
48	PAPER AND PAPERBOARD; ARTICLE	584,800	0.80%	1,762,838	1.51%
60	KNITTED OR CROCHETED FABRICS	570,884	0.78%	170,535	0.15%
58	SPECIAL WOVEN FABRICS; TUFTED T	549,624	0.75%	235,428	0.20%
07	EDIBLE VEGETABLES AND CERTAIN	531,893	0.72%	78,628	0.07%
15	ANIMAL OR VEGETABLE FATS AND OI	511,299	0.70%	764,397	0.66%
74	COPPER AND ARTICLES THEREOF	511,106	0.70%	1,420,513	1.22%
11	PRODUCTS OF THE MILLING INDUST	483,488	0.66%	14,990	0.01%
34	SOAP, ORGANIC SURFACE-ACTIVE A	412,027	0.56%	341,699	0.29%
28	INORGANIC CHEMICALS; ORGANIC O	372,789	0.51%	778,501	0.67%
19	PREPARATIONS OF CEREALS, FLOU	347,413	0.47%	75,684	0.06%
93	ARMS AND AMMUNITION; AND ACCES	334,243	0.45%	250,875	0.22%
42	ARTICLES OF LEATHER; SADDLERY	330,179	0.45%	275,451	0.24%
30	PHARMACEUTICAL PRODUCTS	282,539	0.38%	2,849,105	2.44%
83	MISCELLANEOUS ARTICLES OF BAS	282,124	0.38%	407,804	0.35%
26	ORES, SLAG AND ASH	277,918	0.38%	395,028	0.34%
59	IMPREGNATED, COATED, COVERED	260,765	0.35%	205,702	0.18%
33	ESSENTIAL OILS AND RESINOIDS; PE	256,533	0.35%	530,053	0.45%
29	ORGANIC CHEMICALS	249,905	0.34%	3,525,897	3.02%
44	WOOD AND ARTICLES OF WOOD; WO	247,863	0.34%	793,825	0.68%
88	AIRCRAFT, SPACECRAFT, AND PART	247,591	0.34%	314,089	0.27%
18	COCOA AND COCOA PREPARATIONS	242,736	0.33%	181,535	0.16%
21	MISCELLANEOUS EDIBLE PREPARAT	235,515	0.32%	277,382	0.24%
32	TANNING OR DYEING EXTRACTS; TA	234,143	0.32%	1,122,999	0.96%
64	FOOTWEAR, GAITERS AND THE LIKE;	215,736	0.29%	412,715	0.35%
03	FISH AND CRUSTACEANS, MOLLUSC	204,904	0.28%	67,913	0.06%
17	SUGARS AND SUGAR CONFECTIONE	202,226	0.28%	43,789	0.04%
51	WOOL, FINE OR COARSE ANIMAL HAI	180,202	0.25%	409,894	0.35%
90	OPTICAL, PHOTOGRAPHIC, CINEMAT	179,701	0.24%	2,471,539	2.12%
56	WADDING, FELT AND NONWOVENS;	178,876	0.24%	263,567	0.23%
43	FURSKINS AND ARTIFICAL FUR; MAN	155,130	0.21%	83,585	0.07%
38	MISCELLANEOUS CHEMICAL PRODU	154,474	0.21%	1,084,560	0.93%
22	BEVERAGES, SPIRITS AND VINEGAR	148,104	0.20%	51,142	0.04%
10	CEREALS	114,634	0.16%	188,881	0.16%
12	OIL SEEDS AND OLEAGINOUS FRUIT	96,565	0.13%	697,651	0.60%
41	RAW HIDES AND SKINS (OTHER THA	87,461	0.12%	471,966	0.40%
04	DAIRY PRODUCE; BIRDS'EGGS; NAT	79,602	0.11%	75,787	0.07%
96	MISCELLANEOUS MANUFACTURED A	79,484	0.11%	293,281	0.25%
82	TOOLS, IMPLEMENTS, CUTLERY, SP	65,801	0.09%	341,269	0.29%
09	COFFEE,TEA,MATE AND SPICES	64,348	0.09%	39,647	0.03%

49	PRINTED BOOKS, NEWSPAPERS, PIC	49,437	0.07%	137,892	0.12%
16	PREPARATIONS OF MEAT, OF FISH O	42,276	0.06%	1,136	0.00%
05	PRODUCTS OF ANIMAL ORIGIN, NOT	40,638	0.06%	31,223	0.03%
31	FERTILISERS	37,755	0.05%	754,689	0.65%
02	MEAT AND EDIBLE MEAT OFFAL	36,204	0.05%	277	0.00%
06	LIVE TREES AND OTHER PLANTS; BU	35,751	0.05%	33,764	0.03%
35	ALBUMINOIDAL SUBSTANCES; MODIF	34,591	0.05%	236,345	0.20%
86	RAILWAY OR TRAMWAY LOCOMOTIVE	30,938	0.04%	83,099	0.07%
95	TOYS, GAMES AND SPORTS REQUISI	26,859	0.04%	236,365	0.20%
53	OTHER VEGETABLE TEXTILE FIBRES;	25,092	0.03%	180,966	0.16%
14	VEGETABLE PLAITING MATERIALS; VE	17,082	0.02%	2,730	0.00%
23	RESIDUES AND WASTE FROM THE F	15,423	0.02%	341,256	0.29%
36	EXPLOSIVES; PYROTECHNIC PRODU	13,100	0.02%	20,222	0.02%
79	ZINC AND ARTICLES THEREOF	9,617	0.01%	228,677	0.20%
65	HEADGEAR AND PARTS THEREOF	8,152	0.01%	18,597	0.02%
37	PHOTOGRAPHIC OR CINEMATOGRAP	7,537	0.01%	213,670	0.18%
91	CLOCKS AND WATCHES AND PARTS	7,339	0.01%	145,865	0.13%
66	UMBRELLAS, SUN UMBRELLAS, WAL	6,308	0.01%	12,902	0.01%
01	LIVE ANIMALS	5,162	0.01%	14,074	0.01%
92	MUSICAL INSTRUMENTS; PARTS AND	5,109	0.01%	20,224	0.02%
50	SILK	4,557	0.01%	29,200	0.03%
78	LEAD AND ARTICLES THEREOF	3,510	0.00%	83,032	0.07%
75	NICKEL AND ARTICLES THEREOF	2,944	0.00%	106,247	0.09%
81	OTHER BASE METALS; CERMETS; AR	2,665	0.00%	40,242	0.03%
13	LAC; GUMS, RESINS AND OTHER VE	2,615	0.00%	38,561	0.03%
47	PULP OF WOOD OR OF OTHER FIBR	937	0.00%	277,763	0.24%
80	TIN AND ARTICLES THEREOF	636	0.00%	24,755	0.02%
46	MANUFACTURES OF STRAW, OF ESP	511	0.00%	10,361	0.01%
67	PREPARED FEATHERS AND DOWN A	454	0.00%	18,120	0.02%
97	WORKS OF ART, COLLECTORS' PIEC	418	0.00%	6,769	0.01%
45	CORK AND ARTICLES OF CORK	320	0.00%	5,705	0.00%
	TOTAL	**73,472,289**	**100.00%**	**116,562,532**	**100.00%**

Source: Turkish Statistical Institute (TURKSTAT), www.turkstat.gov.tr

Table A8. Armenian Imports ranked as a Share of Total Imports

Chapter	Chapter Name	Armenia Export, thous. US$	Armenia Import, thous. US$	Export Share	Import Share
93	ARMS AND AMMUNITION; AND ACC	-	-	-	-
71	NATURAL OR CULTURED PEARLS,	336,340.8	347,634.3	34.53%	19.29%
27	MINERAL FUELS, MINERAL OILS AN	27,187.3	264,366.4	2.79%	14.67%
84	NUCLEAR REACTORS, BOILERS, M	16,886.7	156,620.2	1.73%	8.69%
87	VEHICLES OTHER THAN RAILWAY	9,582.5	146,625.3	0.98%	8.14%
85	ELECTRICAL MACHINERY AND EQU	11,113.8	75,865.9	1.14%	4.21%
10	CEREALS	1.6	53,745.2	0.00%	2.98%
30	PHARMACEUTICAL PRODUCTS	1,359.3	49,413.5	0.14%	2.74%
24	TOBACCO AND MANUFACTURED T	3,461.6	48,354.6	0.36%	2.68%

72	IRON AND STEEL	243,717.4	38,652.6	25.02%	2.15%
73	ARTICLES OF IRON OR STEEL	4,355.2	34,745.3	0.45%	1.93%
39	PLASTICS AND ARTICLES THEREO	1,054.3	30,745.7	0.11%	1.71%
26	ORES, SLAG AND ASH	51,425.6	30,658.2	5.28%	1.70%
17	SUGARS AND SUGAR CONFECTIO	62.5	29,302.4	0.01%	1.63%
02	MEAT AND EDIBLE MEAT OFFAL	412.8	28,397.0	0.04%	1.58%
90	OPTICAL, PHOTOGRAPHIC, CINEM	1,948.3	28,391.8	0.20%	1.58%
48	PAPER AND PAPERBOARD; ARTIC	2,088.5	27,085.0	0.21%	1.50%
15	ANIMAL OR VEGETABLE FATS AND	249.3	26,287.4	0.03%	1.46%
70	GLASS AND GLASSWARE	3,532.4	18,247.8	0.36%	1.01%
40	RUBBER AND ARTICLES THEREOF	7,621.8	17,554.1	0.78%	0.97%
94	FURNITURE; BEDDING, MATTRESS	267.6	17,361.7	0.03%	0.96%
62	ARTICLES OF APPAREL AND CLOT	22,409.6	16,568.1	2.30%	0.92%
09	COFFEE,TEA,MATE AND SPICES	7,562.8	15,680.1	0.78%	0.87%
22	BEVERAGES, SPIRITS AND VINEGA	84,295.8	15,352.6	8.66%	0.85%
33	ESSENTIAL OILS AND RESINOIDS;	401.8	15,233.2	0.04%	0.85%
04	DAIRY PRODUCE; BIRDS'EGGS; NA	3,836.1	13,867.1	0.39%	0.77%
18	COCOA AND COCOA PREPARATIO	168.1	13,754.7	0.02%	0.76%
08	EDIBLE FRUIT AND NUTS; PEEL OF	2,045.5	12,122.1	0.21%	0.67%
69	CERAMIC PRODUCTS	81.1	11,735.3	0.01%	0.65%
64	FOOTWEAR, GAITERS AND THE LI	101.4	11,118.7	0.01%	0.62%
44	WOOD AND ARTICLES OF WOOD;	958.2	11,045.0	0.10%	0.61%
28	INORGANIC CHEMICALS; ORGANIC	391.0	10,942.6	0.04%	0.61%
34	SOAP, ORGANIC SURFACE-ACTIVE	221.8	10,737.0	0.02%	0.60%
23	RESIDUES AND WASTE FROM THE	35.6	10,703.6	0.00%	0.59%
11	PRODUCTS OF THE MILLING INDUS	10.6	9,216.4	0.00%	0.51%
63	OTHER MADE UP TEXTILE ARTICLE	1,900.7	9,197.8	0.20%	0.51%
76	ALUMINIUM AND ARTICLES THERE	4,445.6	8,939.5	0.46%	0.50%
20	PREPARATIONS OF VEGETABLES,	7,318.4	7,976.8	0.75%	0.44%
38	MISCELLANEOUS CHEMICAL PROD	71.8	7,888.6	0.01%	0.44%
19	PREPARATIONS OF CEREALS, FLO	132.8	7,225.1	0.01%	0.40%
32	TANNING OR DYEING EXTRACTS; T	80.0	7,119.3	0.01%	0.40%
61	ARTICLES OF APPAREL AND CLOT	7,592.7	7,096.2	0.78%	0.39%
21	MISCELLANEOUS EDIBLE PREPAR	594.9	7,088.2	0.06%	0.39%
31	FERTILISERS	-	6,227.4	0.00%	0.35%
16	PREPARATIONS OF MEAT, OF FISH	809.1	6,154.6	0.08%	0.34%
83	MISCELLANEOUS ARTICLES OF BA	87.1	5,961.2	0.01%	0.33%
49	PRINTED BOOKS, NEWSPAPERS,	3,301.5	5,572.3	0.34%	0.31%
29	ORGANIC CHEMICALS	441.3	4,583.6	0.05%	0.25%
88	AIRCRAFT, SPACECRAFT, AND PA	219.5	4,493.7	0.02%	0.25%
68	ARTICLES OF STONE, PLASTER, C	1,777.4	3,909.5	0.18%	0.22%
35	ALBUMINOIDAL SUBSTANCES; MOD	100.5	3,756.5	0.01%	0.21%
52	COTTON	377.4	3,272.6	0.04%	0.18%
07	EDIBLE VEGETABLES AND CERTAI	75.6	3,257.6	0.01%	0.18%
97	WORKS OF ART, COLLECTORS' PI	352.6	3,188.3	0.04%	0.18%
82	TOOLS, IMPLEMENTS, CUTLERY, S	769.3	3,037.7	0.08%	0.17%
95	TOYS, GAMES AND SPORTS REQUI	135.6	2,683.3	0.01%	0.15%
25	SALT; SULPHUR; EARTHS AND STO	14,872.6	2,377.6	1.53%	0.13%

55	MAN-MADE STAPLE FIBRES	211.4	2,346.8	0.02%	0.13%
74	COPPER AND ARTICLES THEREOF	50,569.7	2,141.2	5.19%	0.12%
42	ARTICLES OF LEATHER; SADDLER	10.6	2,059.5	0.00%	0.11%
96	MISCELLANEOUS MANUFACTURED	136.2	1,973.0	0.01%	0.11%
45	CORK AND ARTICLES OF CORK	779.7	1,772.7	0.08%	0.10%
60	KNITTED OR CROCHETED FABRIC	722.9	1,760.5	0.07%	0.10%
03	FISH AND CRUSTACEANS, MOLLUS	2,929.6	1,758.0	0.30%	0.10%
13	LAC; GUMS, RESINS AND OTHER V	-	1,724.9	0.00%	0.10%
57	CARPETS AND OTHER TEXTILE FL	2,396.2	1,724.0	0.25%	0.10%
54	MAN-MADE FILAMENTS	630.3	1,680.3	0.06%	0.09%
56	WADDING, FELT AND NONWOVEN	658.3	1,661.1	0.07%	0.09%
12	OIL SEEDS AND OLEAGINOUS FRUI	2.3	1,658.8	0.00%	0.09%
91	CLOCKS AND WATCHES AND PAR	2,872.6	1,594.3	0.29%	0.09%
36	EXPLOSIVES; PYROTECHNIC PRO	0.2	1,565.8	0.00%	0.09%
01	LIVE ANIMALS	50.4	1,280.5	0.01%	0.07%
43	FURSKINS AND ARTIFICAL FUR; MA	2.9	1,114.0	0.00%	0.06%
37	PHOTOGRAPHIC OR CINEMATOGR	48.7	971.9	0.01%	0.05%
06	LIVE TREES AND OTHER PLANTS;	48.7	936.9	0.01%	0.05%
59	IMPREGNATED, COATED, COVERE	10.4	439.2	0.00%	0.02%
86	RAILWAY OR TRAMWAY LOCOMOT	1,370.3	418.4	0.14%	0.02%
81	OTHER BASE METALS; CERMETS;	17,983.1	413.6	1.85%	0.02%
65	HEADGEAR AND PARTS THEREOF	27.2	235.6	0.00%	0.01%
66	UMBRELLAS, SUN UMBRELLAS, WA	0.2	231.3	0.00%	0.01%
89	SHIPS, BOATS AND FLOATING STR	-	212.5	0.00%	0.01%
51	WOOL, FINE OR COARSE ANIMAL H	63.6	143.2	0.01%	0.01%
41	RAW HIDES AND SKINS (OTHER TH	1,633.5	116.3	0.17%	0.01%
58	SPECIAL WOVEN FABRICS; TUFTE	42.7	95.7	0.00%	0.01%
05	PRODUCTS OF ANIMAL ORIGIN, NO	8.3	94.1	0.00%	0.01%
47	PULP OF WOOD OR OF OTHER FI	-	93.7	0.00%	0.01%
80	TIN AND ARTICLES THEREOF	-	76.7	0.00%	0.00%
92	MUSICAL INSTRUMENTS; PARTS AN	39.3	64.4	0.00%	0.00%
67	PREPARED FEATHERS AND DOW	0.1	60.3	0.00%	0.00%
75	NICKEL AND ARTICLES THEREOF	-	57.9	0.00%	0.00%
46	MANUFACTURES OF STRAW, OF E	0.1	43.8	0.00%	0.00%
53	OTHER VEGETABLE TEXTILE FIBR	0.2	34.2	0.00%	0.00%
79	ZINC AND ARTICLES THEREOF	-	31.4	0.00%	0.00%
78	LEAD AND ARTICLES THEREOF	25.7	5.3	0.00%	0.00%
50	SILK	-	4.7	0.00%	0.00%
14	VEGETABLE PLAITING MATERIALS;	-	0.9	0.00%	0.00%
	TOTAL	973,920.5	1,801,735.7	100.00%	100.00%

Source: National Statistical Service (NSS) of Republic of Armenia, www.armstat.am/publications/