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Effects of the Five Percent Uniform Tariff

Elizabeth S. Tan

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**EFFECTS OF THE
FIVE PERCENT UNIFORM TARIFF**

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JULY 1997
(FINAL DRAFT)

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EFFECTS OF THE 5% UNIFORM TARIFF

by: Elizabeth S. Tan

Final draft as of July 1997

I. Introduction

The first step towards uniform tariffs actually started in the early eighties with the Tariff Reform Program (TRP) cum trade liberalization. The result was a ceiling rate of 50% and a floor rate of 10% when the TRP ended in 1985. The next round of reforms, between 1986 and 1988, focused on the lifting of quantitative restrictions (QRs). The next logical step in order to preserve and sustain the gains from previous reform was to engage in a new round of tariff cuts spread over five years. The second major tariff reform began in 1991, i.e., E.O. 470 which set the ceiling rate at 50% for a few commodities and a floor rate of zero. These two major reforms were difficult to implement and sometimes almost unpalatable to many because of the usual fear of competition from cheap imports and unemployment. The opposition from private sector was strong as they lobbied for postponement. Hence, in between reforms, there were policy reversals. Nevertheless, a major victory has been won especially after the massive lifting of QRs in the late eighties and early nineties; then, there was the completion of the second round of tariff cuts in 1995. At this juncture, would it be excessive exuberance to contend that the gains are now irreversible and the direction of future trade reform is unmistakably clear- towards freer trade? Bolstered by global trends then and now, implementing uniform tariffs is the logical result of these events.

The discussion on uniform tariffs started in late 1994 and the announcement came before the final year of E.O. 470. This was considered a laudable move for it sent clear signals to private sector regarding the direction of future policy and the policy announcement gave credibility and continuity to the whole process of reform. It was surprising, though, because unlike past trade reforms, there were no public hearings nor public debate. It was the least controversial and least resisted trade reform to date. Moreover, there was only little opposition from private sector. Why has public acceptance been so straightforward?

The proposed 5% uniform tariffs will be effective by year 2004. By then, the socio-political conditions will have changed. Over the years, the citizenry, private sector included, has done its learning, adjustment and understanding and this has made reform more acceptable. After all sixteen years is a long time. There were also other trade events and issues occurring simultaneously, such as the General Agreement on Trade and Tariffs (GATT), the Asia Pacific Economic Cooperation (APEC) and the ASEAN Free Trade Area (AFTA), all of which were more urgent concerns. The Common Effective Preferential Tariff (CEPT) will require member countries to adopt a tariff between 0-5% by year 2003; hence, the 5% Uniform Tariff will be redundant for imports coming from ASEAN.

There was some healthy skepticism though from independent economists regarding the appropriateness of setting the uniform rate at 5%, perceived to be relatively low for a developing country. The main concern was the revenue effect.¹ All together, year 2004 is still seven years from 1997 and there is no sense of urgency for immediate public debate on the issue.

What is the objective of the 5% uniform tariff? Apparently, it is to reduce protection further and make local industries truly globally competitive. The main objective of this study is to argue for the case of uniform tariffs and to quantify the effects of implementing a 5% uniform tariffs. A parallel objective is to look into a closely related issue, i.e., the level of the uniform rate and its macroeconomic effects. The paper is organized into six parts. Part II presents the case for uniform tariffs. Part III sketches tariff restructuring to approach the uniform rate. Part IV presents the theoretical framework, the Trade Model using I-O framework and the Simulation model. Part V analyzes the changes in tariffs on the protection structure and the economy and part VI concludes the study.

II. The Case for Uniform Tariffs

Most of the arguments for uniform tariffs do not rest on the conventional efficiency criteria because of possible distortion in consumption and production under certain conditions. Hence, the arguments for uniform tariffs rest largely on political economy arguments as well as administrative efficiency.

A uniform tariff is neutral. If a uniform tariff is implemented, the protection structure becomes neutral across all importable sectors. This result relies very strongly on three assumptions. First, there are no duty exemptions and all imports should come in at the uniform rate. Second, quantitative restrictions QRs are not used as protective measures. Third, the existence of non-traded goods are due to natural barriers rather than trade policy. The third assumption can be implied from the second and given that the tariff is low. If these three assumptions are tenable, a uniform tariff will achieve an effective protection rate (EPR) equal to the uniform rate for the importable sector. When uniform tariffs are in place, net protection is positive and is equal to the uniform rate. Nevertheless, the important effect is its neutrality. Protection is really relative: if all sectors are given equal protection, then no sector is more protected or less protected than any sector. In effect relative protection across all importable sectors is the same. Hence, a uniform tariff achieves neutral protection across the importable sector.

How about the exportable sector? Given that there are no export taxes, subsidies or domestic export barriers and duty drawbacks, the exportable sector will be penalized by a rate equal to the uniform rate. If there are duty drawbacks granted to all traded inputs, then the exportable sector will receive a net protection equal to zero. With a 5% net protection for the entire importable sector together with either a 5% penalty on exports or zero protection, the protection structure although strictly non-uniform and therefore non-neutral, is still a vast improvement over the structure under multiple rates.

Another important result of uniform tariff is the neutral effect of uniform tariff on resource allocation. Resource allocation will be determined by factors other than tariff policy and the inefficiency due to misallocation of resources will be greatly reduced.

A neutral protection structure will also reduce unproductive activities such as lobbying related to seeking more or higher protection. This is one of the stronger political economy arguments for uniform tariff. Equally important is that the policy will send clear and consistent signals to private sector regarding the direction of policy reform.

Another important argument is that a uniform tariff reduces transactions cost to private sector as the tariff code becomes totally simple and transparent.

A uniform tariff also eliminates the incentive for technical smuggling. Undervaluation becomes relatively unattractive because the rate is relatively low and compliance is easy. Economic agents will have to weigh the gains from misdeclaration and the risk that goes with illegal activities.

The appeal of uniform tariff is also its administrative ease and efficiency in terms of

implementation and duty collection. If everything is taxed at the same rate, it leaves no room for discretion. Hence, corruption will be largely reduced.

Lastly, the role and services of Societe Generale de Surveillance (SGS) will be greatly reduced, if not unnecessary. This will mean huge savings for the government. The total fee received by the SGS for assisting the government in implementing the Tariff and Customs Code (TCC) amounted to P1.5 B pesos in 1994.

How tenable are these four assumptions? At present, there are various types of exemptions granted by the TCC, the National Internal Revenue Code (NIRC), and special decrees and laws. The more important exemptions which have a direct bearing on the protection structure are those granted by the Board of Investment (BOI) such as duty-free importations of capital equipment and raw materials granted to BOI-registered enterprises. The exemptions amounted to some 35%, 39% and 34% of total foregone revenue in 1993, 1994 and 1995, respectively; total foregone revenue for the three years was 7 billion pesos. See Table 1.

Equally important are the exemptions granted by the NIRC. These exemptions were granted by R.A. 7716 which took effect May 1994. These items are tax-exempt but are not duty-exempt. Since the value-added tax (VAT) exemptions apply to both imports and import-competing goods, there is no additional protective effect. The exemptions granted due to international agreements and those granted to non-stock, non-profit educational institutions are relatively small; hence, they should not have any important nor substantial effects on the protection structure. One exemption granted by law, E.O. 46, is for Duty-Free Philippines. Although this is outside of the purview of industrial and trade policy, these exemptions have substantial effects on the prices of imports and affect import-competing goods as well. Recent experiences show that the importations have become quite substantial and foregone duties amounted to about 5 billion pesos from 1993 to 1995. Obviously, this is not consistent with the policy of uniform tariff.

Table 2 uses the database in Table 1 but reclassifies the commodities using the 1988 I-O sectors. Most of the exemptions were manufactured goods which took at least 80% of total foregone revenues in any of the years 1993, 1994 and 1995. Machinery, including electrical (I-O 135-151) ranked the highest and was responsible for about 32%-40% of total revenues foregone in any of the three years mentioned. The next was Food Processing (I-O sector 38-61) accounting for about 8%-12% for the same period. Duty exemptions can be construed as an implicit subsidy and will raise the implicit rate of the commodity. The effect on EPRs will either be greater or less. Hence, these exemptions will produce a non-neutral protection structure.

The neutrality of uniform tariffs will also be lost if QRs are used as protective measures. If QRs are binding, the implicit rates from price comparisons are usually higher than book rates. The resulting EPR structure will not be uniform and hence, not neutral.

Table 3 shows the remaining items that have not been liberalized. There are about five thousand PSCC lines and only a total of 175 lines remained restricted as of September 1996. This is particularly true and important for agricultural products which are inputs to food processing. For example, corn feeds which can affect production cost of hog raising and

Table 1
FORGONE REVENUES FROM EXEMPTIONS

	1993	1994	1995
GRAND TOTAL	100(P5,664.77)	100 (P 7,669.7)	100 (P6,106.49)
I Institutions	36.5	39.0	33.8
IA Board of Investments	35.3	38.9	33.8
IB Export Processing Zone Authority	0.0	0.1	0.0
IC PHIVIDEC Industrial Authority	1.2	0.0	0.0
II	39.0	28.7	43.4
IIA The Tariff and Customs Code of the Philippines (Section 105)	2.0	1.6	2.0
IIB National Internal Revenue Code of the Philippines	37.0	27.1	41.4
IV International Agreements	0.2	0.2	0.7
V Non-stock, non-profit Educational Institutions	0.6	0.3	0.3
VI Other Laws	23.7	30.9	20.3
EO46 (Duty-Free Phils.)	0.0	19.0	14.4
VII Telecommunications Company	0.0	1.0	1.4

Source of database : Tariff Commission

Table 2.
EXEMPTIONS CLASSIFIED BY 1988 I-O TABLE

	1993 (000)	1994 (000)	1995 (000)	In Percent		
	1993	1994	1995	1993	1994	1995
1 - 169 ALL SECTORS	5,635,309.90	7,650,380.09	6,088,923.54	100	100	100
1 - 27 AGRICULTURE, FISHING & FORESTRY	851,590.31	1,039,616.18	1,142,348.14	15.1	13.6	18.8
1 - 23 Agriculture	784,875.13	937,721.28	1,054,411.54	13.9	12.3	17.3
25 - 26 Fishing	60,498.48	85,201.04	87,573.23	1.1	1.1	1.4
27 Logging & other forestry activities	6,164.45	16,693.86	363.37	0.1	0.2	0.0
28 - 37 MINING	43,400.46	18,505.87	17,177.32	0.8	0.2	0.3
38 - 169 MANUFACTURING	4,740,319.13	6,592,258.04	4,929,398.08	84.1	86.2	81.0
38 - 62 Food Processing	450,887.82	699,170.96	722,577.53	8.0	9.1	11.9
63 - 68 Beverages & Tobacco	94,309.95	435,492.41	291,964.09	1.7	5.7	4.8
69 - 81 Textile & Garments	6,714.44	89,360.39	103,372.34	0.1	1.2	1.7
82 - 84 Leather and Leather Products	363.39	47,887.11	32,940.00	0.0	0.6	0.5
85 - 95 Wood and Wood Products	3,004.19	17,299.32	27,102.20	0.1	0.2	0.4
96 - 101 Pulp, Paper and Printing	189,775.13	253,854.36	241,182.53	3.4	3.3	4.0
102 - 110 Chemicals and Chemical Products	262,690.03	395,429.55	571,894.58	4.7	5.2	9.4
111 - 112 Petroleum Refineries	543,227.96	16,199.61	12,316.66	9.7	0.2	0.2
113 - 116 Rubber And Plastic Products	22,717.05	94,052.54	73,313.82	0.4	1.2	1.2
117 - 124 Non- Metallic Mineral Products	473,315.41	393,279.73	108,651.24	8.4	5.1	1.8
125 - 134 Metal and Metal Products	299,172.98	302,586.55	236,896.67	5.3	4.0	3.9
135 - 151 Machinery ind. Electrical	1,786,499.06	3,075,771.16	2,133,958.54	31.7	40.2	35.0
152 - 157 Transport Equipment	549,399.79	626,191.39	274,775.17	9.7	8.2	4.5
158 - 160 Mfg. of Scientific equipment, photographic and optical instruments & watches	45,504.97	44,641.44	29,108.23	0.8	0.6	0.5
161 - 169 Misc. Manufacturing	7,736.96	101,041.54	69,344.48	0.1	1.3	1.1

Source of database: Tariff Commission

Table 3
 REMAINING ITEMS NOT LIBERALIZED
 1990-1996

Commodity Group	1990	1991	1992	1993	1994	1995	1996
00 Live animals for food	21	16	0	5	5	5	0
01 Meat and Preparations	47	47	1	26	26	26	1
03 Fish and preparations	36	36	0	0	0	0	0
04 Cereals and Preparations	12	12	10	24	24	24	10
05 Vegetables and Fruits	4	4	4	6	6	6	0
06 Sugar, honey and prep	3	3	0	0	0	0	0
07 Coffee, cocoa, tea, spices	9	9	9	9	9	9	0
08 Feeding stuff for animals	0	0	0	2	2	2	0
26 Fibers, animal hair, old textile articles	1	1	1	1	1	1	1
29 Crude animal and vegetable materials, n.e.s	1	1	1	1	1	1	1
32 Coal and coke	3	3	3	3	3	3	3
33 Petroleum	14	14	14	14	14	14	14
34 Gas	1	1	1	1	1	1	1
51 Organic chemicals	6	6	6	9	9	9	9
52 Inorganic chemicals	6	6	5	6	6	6	6
54 Medicinal and pharmaceutical prod	23	23	2	3	3	3	3
56 Fertilizers	19	19	1	2	2	2	2
57 Explosives	2	2	2	2	2	2	2
58 Artificial resins, plastics materials	0	0	0	1	1	1	1
59 Misc. chemical products	7	7	7	9	9	9	9
62 Rubber and articles	8	8	8	12	12	12	12
64 Paper and paperboard	1	0	0	0	0	0	0
66 Mineral manufactures	1	1	0	0	0	0	0
69 Manufactures of base metals	1	1	0	2	2	2	2
71 Power generating machinery	0	0	0	3	0	0	0
72 Specialized Industrial machinery and equipment	1	1	0	0	0	0	0
74 Nonelectric machinery	8	8	0	0	0	0	0
75 Office machines	3	3	3	3	3	3	3
76 Telecommunications equipment	50	38	4	4	4	4	4
77 Electric machinery and apparatus	54	51	0	0	0	0	0
78 Motor vehicles	47	47	30	50	50	26	26
79 Railway vehicles, aircraft, and ships	6	6	1	1	1	1	1
82 Furniture	0	0	4	0	0	0	0
89 Miscellaneous manufactures	13	13	12	12	12	12	12
90 Commodities, n.e.c.	56	53	51	52	52	52	52
TOTAL	464	440	180	263	260	236	175

Source: L. de Dios (1996)

therefore, meat processing. At present, most of the QRs have been tariffed by E.O. 313 but there are minimum access volumes (MAVs) stipulated. These MAVs are quite like QRs only that they are more transparent. The remaining QRs in agriculture are 10 PSCC lines for group 04 (Cereals and Preparations), mainly rice.

There are a few QRs left in the manufacturing sector and most prominently in petroleum, rubber articles, and motor vehicles. The QRs on group 33 (Petroleum) is the entire energy sector which is an important input to petroleum refinery and energy-intensive industries. Group 54 (Medicinal and Pharmaceutical Products), group 62 (Rubber and articles) and group 78 (Motor Vehicles) are mostly finished products and their effects on the protection structure would not be as profound as group 33.

The third, is export taxes and subsidies to export industries. The only export tax is the 20% tax on log and was imposed because of environmental concerns. This could be a truly meritorious case for exemption to the uniform rate.

There are 9 sectors in the 1988 I-O table classified as non-traded.² See Table 4. There are only a handful of Philippine Standard Commodity Classification (PSCC) lines which were not liberalized as of 1988. All the items have been liberalized even before 1988. As of 1997, Hog and chicken are the only two sectors with some form of import restrictions. The Department of Agriculture has converted the QR's into minimum access volumes (MAVs) on hogs and chicken. For the items that have been liberalized, the non-tradability of these goods, whatever the rule was used in such classification, appears to be due to other factors other than trade policy. The non-tradability of these goods are more attributable to natural trade barriers, such as high transport cost and or high perishability.

Overall, the three assumptions are quite tenable. The uniform tariff across the importable sector is the ideal situation but there are some reasons which make this goal unattainable. As long as these exemptions are truly meritorious and can be monitored effectively and implemented properly, the uniform tariff will have achieved a tremendous step towards more uniform protection and hence, a more neutral trade regime, even though the protection structure will be theoretically non-neutral.

TABLE 4
NON-TRADED SECTORS OF THE 1988 INPUT/OUTPUT TABLE

IO CODE	DESCRIPTION	PSCC	Date Liberalized
4	Roots and Tubers	054.81-01	L82, R83, L86, R93, L96
		054.81-03	L82, R83, L86, R93, L96
		054.11-00	B70, L96
		054.12-00	L86
		054.61-09	L82
		054.81-09	L82
11	Sugarcane	054.82-01	L86
12	Tobacco	121.11-00	L86
		121.21-01	N
		121.21-02	L86
		121.39-00	L86
		121.29-01	N
		121.29-02	N
		121.31-00	L86
		121.39-00	L86
19	Hog	001.39-00	L92, R93, L96
		001.31-00	L88
21	Chicken	001.41-01	L86, L92
		001.49-02	L86, L92, R93, L96
		001.49-01	L86, L92, R93, L96
22	Hen's egg	025.12-00	L81
		025.15-00	L82
24	Agricultural services	291.99-21	N
42	Ice cream etc	098.09-24	L86
		098.09-25	L86
		098.09-26	L86
		098.09-24	L86
		098.09-25	L86
		073.09-00	L81
		098.09-09	L86
		111.01-01	L81
		111.01-04	L86
		111.01-09	L85
57	Mfr of ice excl dry ice	111.01-09	L85

R: restricted
L: liberalized

B: banned
N: neither

Source:

AYC Consultants, Inc. Refinements EPR Estimation Methodology (1995).
L. de Dios (1997).

III. Working Towards Uniform Tariffs

Despite the massive and substantial changes brought about by E.O. 470 in 1995, the tariff structure still had 9 levels, ranging from 3 to 50 percent. See Table 5. To achieve the 5% uniform rate in year 2004 from the 1995 structure will require a series of restructuring. One of the major steps undertaken was the issuance of E.O. 172, issued in May 1994, which increased the tariff rates of free items in E.O. 470 to 3%. The more important commodities were fertilizers, diesel engines and electric generating sets. Another was E.O. 189, issued in August 1994, which reduced tariff rates on capital equipment under Chapters 84-85 from 10-20 percent to 3-10 percent. The next was E.O. 204, issued on October 1994, which affected mainly the tariff rates on chemical raw materials used by the garment and textile industries. Briefly, tariffs on yarns and sewing thread were reduced from 20-25 percent to 10 percent; fabrics, from 30 percent to 20 percent and garments, from 30-50 percent to 30 percent.

The most significant changes in the process of restructuring the tariff structure to approach the uniform rate by year 2004 were brought about by E.O. 264 which took effect August 1995. It affected some 4142 HS lines, mainly manufactured goods, covering chapters 25-97 of the TCC. See Table 5. E.O. 264 increased the number of HS lines under the minimum rate of 3%, from 316 to 2143 lines by the year 2000. The rates under 10% were more or less maintained while the number of lines falling under the 20% and 30% were decreased substantially: from 1028 lines to 573 and from 1188 to 20, respectively. E.O. 264 practically removed manufactured goods from the ceiling rate of 50%.

Table 6 shows a more detail frequency distribution of Table 5 which gives the details of how restructuring was done by E.O. 264. In general, the pattern was bringing down the rates mostly to 3% and 10%. Most of the HS lines under the floor rate were retained until year 2000. Under the 5%, all 27 lines were reduced to 3% by year 2000. Under the 10%, about 65% or 928 lines were brought down to 3% immediately while the rates of 460 HS lines were retained but eventually reduced to 3% by year 2000. Only the rates of 112 HS lines remained at 10% by year 2000. All lines originally with 15% were reduced to 3% by year 2000. In the 20% category, the tariff rates of 1028 HS lines were mostly reduced to either 3% and 10%. For those HS lines under 30%, most of rates were maintained at 30% initially and eventually about 50% were reduced to 10% and 40% reduced to 20%. In the 50% category, the rates of 78 HS lines were reduced to 30% immediately and reduced further to 20% by year 2000. The final result of restructuring brought about by E.O. 264 is a ceiling rate of 30% and a floor rate of 3% for manufactured goods.

The tariff structure for the entire economy by year 2000 after all restructuring will have been completed is shown in Table 7. There will still be 5 tariff levels: 3%, 10%, 20%, 30% and 50%. This is an improvement after E.O. 470 which had about 9 tariff levels.

The three E.O.s that came after E.O. 264, i.e., E.O.s 288, 313 and 328, affected only agricultural commodities covered in the first 25 chapters of the TCC. These moves in effect translated quantitative restrictions (QRs) into tariffs. Hence most QRs were lifted except rice. The effect of the tariff structure is shown in Table 8. The ceiling tariff rate by year 2000 is 65% whereas the floor rate remains at 3%. The commodities or HS lines with rates higher than 30% are all agricultural products.

Table 5
FREQUENCY DISTRIBUTION OF TARIFF RESTRUCTURING
BY EO264

Rate in Percent	1995 Pre-EO264	1995 Post-EO264	2000
0	-	-	-
3	316	1,377	2,143
5	27	12	-
10	1,425	773	1,382
15	26	-	-
20	1,028	874	573
25	17	-	-
30	1,188	1,033	20
35	14	8	-
40	-	37	-
45	2	2	-
50	99	2	-
TOTAL	4,142	4,118	4,118

*Covers chapters 25-97 of the Tariff and Customs Code

* Source of database: Tariff Commission

**Table 6
DETAILS OF TABLE 5**

Rates	Pre-EO264 1995	Post-EO264 1995	2000
I 3%	316	3% 294 10% 1 20% 1 296	3% 294 10% 2 296
II 5%	27	3% 15 5% 12 27	3% 27 27
III 10%	1425	3% 928 10% 460 20% 9 1397	3% 1285 10% 112 1397
IV 15%	26	10% 25	3% 25
V 20%	1028	3% 42 10% 244 20% 683 30% 1 970	3% 328 10% 637 20% 5 970
VI 25%	17	20% 15 30% 2 17	10% 17 17
VII 30%	1188	3% 55 10% 27 20% 137 30% 943 40% 32 1194	3% 111 10% 585 20% 483 30% 15 1194
VIII 35%	14	3% 5 10% 1 30% 3 35% 8 40% 5 22	3% 5 10% 8 20% 4 30% 5 22
IX 45%	2	45% 2	20% 2
X 50%	99	10% 1 20% 15 30% 78 50% 2 96	3% 16 10% 7 20% 73 96
		3% 1339 5% 12 10% 759 20% 860 30% 1027 35% 8 40% 37 45% 2 50% 2	3% 2091 5% - 10% 1368 20% 567 30% 20 35% - 40% - 45% - 50% -
	TOTAL	4046	4046

Source of database: Tariff Commission

Table 7
FREQUENCY DISTRIBUTION OF TARIFF RESTRUCTURING
BY EO264

Rate in Percent	1995		2000
	Pre-EO264	Post-EO264	
0	-	-	-
3	875	1,938	2,713
5	29	14	1
10	1,543	892	1,517
15	26	-	-
20	1,150	996	674
25	17	-	-
30	1,717	1,561	545
35	14	8	-
40	-	37	-
45	2	2	-
50	187	90	88
TOTAL	5560	5538	5538

Covers all chapters (1-97) of Tariff and Customs Code

Pre-EO264 1995 : July 1995

Post-EO264 1995 : August 1995

2000 : final year of EO264

Source of database : Tariff Commission

Table 8
FREQUENCY DISTRIBUTION OF TARIFF RESTRUCTURING
BY EO264, INCLUSIVE OF EO'S 288,313, AND 328

Rate in Percent	1995		2000
	Pre-EO264	Post-EO264	
0	-	-	-
3	875	1,938	2,933
5	29	14	-
10	1,543	892	1,789
15	26	-	-
20	1,150	996	787
25	17	-	1
30	1,717	1,561	73
35	14	8	7
40	-	37	13
45	2	2	43
50	187	90	18
55	-	-	1
60	-	-	50
65	-	-	7
TOTAL	5,560	5,538	5,722

* Covers all chapters (1-97) of the Tariff and Customs Code

Pre-EO264 1995 : July 1995

Post-EO264 1995 : August 1995

2000 : final year of EO264; inclusive of the changes in EO's 288, 313 & 328

Source of database : Tariff Commission

Database: C:\5%_TABLE\EO264\Rates\TCC95Pre.xls

C:\5%_TABLE\EO264\Rates\TCC95Pst.xls

C:\5%_TABLE\EO288_27\EO328_96.xls

IV. Theoretical Framework

The Trade Model Using I-O Framework³ (hereafter referred to as the Trade Model) is used to assess the effects of trade reform on output, income, intermediate and final demand, exports and imports, balance of trade given fixed exchange rate. The model is a partial equilibrium type with the following assumptions: one, the economy is small and open; two, non-traded goods are produced in constant prices and grows at the same rate as the traded sectors; three, imports are perfect substitutes for locally produced goods; four, factor prices are not affected by trade reform; five, the economy is composed of input-output sectors so the basic unit of analysis is the I-O sector which is characterized by a supply and demand function; six, all policy instruments are constant, except, of course, trade policy.

The first assumption means that imports and exports will be estimated as excess demand and excess supply because excess domestic consumption is answered for by imports while any excess supply is readily exported because demand elasticity for the country's exports is infinite. Because the model does not include the non-traded sectors, it has the weakness of not being able to handle resource movements between traded and non-traded sectors when relative prices change. Therefore, the use of relative prices in the model is a concept of relative price within the traded sectors only. Hence, the model can actually deal with resource movements within the tradable sectors only.

There are two main changes introduced in the Trade Model: first, the use of relative prices in estimating changes in output and changes in final demand; second, relaxing the assumption of fixed exchange rate. A simulation model based on the Trade Model is specified and solves for the required change in the real exchange rate that is compatible with the initial trade balance. There are two simulation models specified, one using absolute prices and another using relative prices.

A. Trade Model Using the I-O Framework

The model starts with the argument that output of sector j , Q_j , is a function of effective price or value-added V_j only, equation (1).

$$Q_j = f(V_j) \quad (1)$$

V_j in unit prices is defined in equation (1.1) where t_j is the tariff on the output, a_{ij} is the amount of input i used to produce one unit of output j , and t_i is the tariff on the input.

$$V_j = (1 + t_j) - \sum a_{ij} (1 + t_i) \quad (1.1)$$

Change in output defined in equation (1.2) is equal to the product of supply elasticity, b_j , Q_j^0 , the level of output before reform, and a proportionate change in effective price \hat{V}_j , which is defined in equation (1.3).

$$dQ_j = b_j Q_j^0 \hat{V}_j \quad (1.2)$$

$$\hat{V}_j = \frac{V_j^1 - V_j^0}{V_j^0} \quad (1.3)$$

where V_j^0 is the pre-reform effective price
 V_j^1 is the post-reform effective price

$$\hat{V}_j = \frac{(V_j^1 - V_j^f) - (V_j^0 - V_j^f)}{V_j^f} * \frac{V_j^f}{V_j^0} \quad (1.4)$$

$$E_j^1 = (V_j^1 - V_j^f) / V_j^f \quad (1.5)$$

$$E_j^0 = (V_j^0 - V_j^f) / V_j^f \quad (1.6)$$

In equation (1.3), subtract V_j^f from V_j^1 , add V_j^f to V_j^0 , then multiply by V_j^f / V_j^0 to get equation (1.4). V_j^f is the free-trade effective price. $(V_j^1 - V_j^f) / V_j^f$ is actually the post-trade reform EPR, (E_j^1) , while $(V_j^0 - V_j^f) / V_j^f$ is the pre-trade reform EPR, (E_j^0) , as defined in equations (1.5) and (1.6) respectively. From equation (1.6), equation (1.7) is derived.

$$\frac{1}{1 + E_j^0} = \frac{V_j^f}{V_j^0} \quad (1.7)$$

Substitute equations (1.5), (1.6) and (1.7) into equation (1.4) to get equation (1.8) which shows that the proportionate change in effective price, (\hat{V}_j) , is the difference between E_j^1 and E_j^0 over $1 + E_j^0$.

$$\hat{V}_j = \frac{E_j^1 - E_j^0}{1 + E_j^0} \quad (1.8)$$

Given changes in the absolute effective price, equation (1.9) can be used to estimate output effects in the short run.

$$dQ_j = b_j Q_j^0 (E_j^1 - E_j^0) / (1 + E_j^0) \quad (1.9)$$

However in the longer run, the use of relative prices is more appropriate. Therefore, equation (1.2) can be rewritten as equation (1.10).

$$dQ_j = b_j Q_j^0 \left(\frac{\hat{V}_j}{V} \right) \quad (1.10)$$

Equation (1.10) states that the change in output is the product of b_j , Q_j° and $(\frac{\hat{V}_j}{\bar{V}})$, the proportionate change in relative effective price as defined in equation (1.11).

$$\frac{\hat{V}_j}{\bar{V}} = \frac{\left(\frac{V_j^1}{\bar{V}^1} - \frac{V_j^\circ}{\bar{V}^\circ}\right)}{\frac{V_j^\circ}{\bar{V}^\circ}} \quad (1.11)$$

where $\frac{V_j^1}{\bar{V}^1}$ is the post-reform relative effective price of sector j,

$\frac{V_j^\circ}{\bar{V}^\circ}$ is the pre-reform effective price of sector j.

\bar{V}^1 is the post-reform weighted effective price.

\bar{V}° is the pre-reform weighted effective price.

Divide equation (1.11) by V_j^f , the free trade effective price, to get equation (1.12).

$$\frac{\hat{V}_j}{\bar{V}} = \frac{\frac{V_j^1/\bar{V}^1}{V_j^f/V_j^f} - \frac{V_j^\circ/\bar{V}^\circ}{V_j^f/V_j^f}}{\frac{V_j^\circ/\bar{V}^\circ}{V_j^f/V_j^f}} \quad (1.12)$$

From equations (1.5) and (1.6), one can get equations (1.13) and (1.14).

$$1 + E_j^1 = \frac{V_j^1}{V_j^f} \quad (1.13)$$

$$1 + E_j^\circ = \frac{\bar{V}^\circ}{V_j^f} \quad (1.14)$$

E^1 and E° are the weighted pre and post-reform effective protection rates, respectively as defined in equations (1.15) and (1.16). Substitute equations (1.13), (1.14), (1.15) and (1.16) into equations (1.12) to get equation (1.17).

$$1 + \bar{E}^1 = \frac{\bar{V}^1}{V_j^f} \quad (1.15)$$

$$1 + \bar{E}^o = \frac{\bar{V}^o}{V_j^f} \quad (1.16)$$

$$\frac{\hat{V}_j}{\bar{V}} = \frac{\frac{1+E_j^1}{1+\bar{E}^1} - \frac{1+E_j^o}{1+\bar{E}^o}}{\frac{1+E_j^o}{1+\bar{E}^o}} \quad (1.17)$$

Equation (1.18) is used to estimate the change in output of sector j due to changes in relative effective price of sector j.

$$dQ_j = b_j Q_j^o \left[\frac{\frac{1 + E_j^1}{1 + \bar{E}^1} - \frac{1 + E_j^o}{1 + \bar{E}^o}}{\frac{1 + E_j^o}{1 + \bar{E}^o}} \right] \quad (1.18)$$

Equation (2) states that the level of employment in sector j, (L_j), is the product of an employment ratio, (e_j), and Q_j , while equation (2.1) shows the change in employment of sector j, (dL_j), to be the product of e_j and the change in output (dQ_j).

$$L_j = e_j Q_j \quad (2)$$

$$dL_j = e_j dQ_j \quad (2.1)$$

The third equation is income. Equation (3) shows that income of sector j, (Y_j), is the product of V_j and Q_j . Change in income, dY_j , is equal to V_j times dQ_j , equation (3.1). \bar{Y} Is the proportionate change in income which is the ratio of the sum of all changes income over total income, equation (3.2).

$$Y_j = V_j Q_j \quad (3)$$

$$dY_j = V_j dQ_j \quad (3.1)$$

$$\hat{Y} = \frac{\sum dY_j}{\sum Y} \quad (3.2)$$

The fourth equation is intermediate demand. Intermediate demand of sector j , I_j , is the sum of the product of a_{ij} , the amount of input i used in producing a unit of output j , and Q_j , equation (4); the change in intermediate demand of sector j , dI_j , comes from the changes in output only and is the product of a_{ij} and dQ_j , equation (4.1).

$$I_j = \sum a_{ij} * Q_j \quad (4)$$

$$dI_j = \sum a_{ij} * dQ_j \quad (4.1)$$

Final demand, (F_j), is a function of price and income, equation (5). Assuming that cross price elasticities are zero, the change in final demand of sector j due to changes in price is estimated as the product of the proportionate change in the domestic price of sector j , (\hat{P}_j), own price elasticity of demand, (G_j), and final demand before reform, F_j^o ; changes in final demand due to change income is estimated as the product of the income elasticity of demand of sector j , (K_j), the proportionate change in income (\hat{Y}) and F_j^o . Therefore, total change in final demand of sector j , (dF_j), is the sum of the price and income effects, equation (5.1).

$$F_j = g(P, Y) \quad (5)$$

$$dF_j = [G_j(\hat{P}_j) + K_j \hat{Y}] F_j \quad (5.1)$$

The proportionate change in the domestic price of sector j is defined in equation (5.2).

$$\hat{P}_j = \frac{P_j^1 - P_j^o}{P_j^o} \quad (5.2)$$

where P_j^o is the pre-reform domestic price of sector j ,
 P_j^1 is the post-reform domestic price of sector j .

Pre-reform domestic price of sector j in equation (5.3) is assumed to be the product of a world price, P_b , and the implicit tariff of sector j before reform, T_j^o . P_j^1 is also assumed to be the product of P_b and the implicit tariff after reform of sector j , T_j^1 .

$$P_j^o = \bar{P}b (1 + T_j^o) \quad (5.3)$$

$$P_j^1 = \bar{P}b (1 + T_j^1) \quad (5.4)$$

Substitute equations (5.3) and (5.4) into (5.2) to get equation (5.5).

$$\hat{P}_j = \frac{\bar{P}b (1 + T_j^1) - \bar{P}b (1 + T_j^o)}{\bar{P}b (1 + T_j^o)}$$

$$\hat{P}_j = \frac{T_j^1 - T_j^o}{1 + T_j^o} \quad (5.5)$$

A final demand estimate that is consistent with the use of relative prices is shown in equation (5.6).

$$dF_j = [G_{jj} * \left(\frac{\hat{P}_j}{\bar{P}} \right) + K_j \hat{Y}] F_j^o \quad (5.6)$$

where (\hat{P}_j / \bar{P}) is the proportionate change in relative domestic price of j defined in equation (5.7).

$$\left(\frac{\hat{P}_j}{\bar{P}} \right) = \frac{(P_j^1 / \bar{P}^1) - (P_j^o / \bar{P}^o)}{P_j^o / \bar{P}^o} \quad (5.7)$$

where \bar{P}^o and \bar{P}^1 are the weighted domestic prices before and after reform as defined in equations (5.8) and (5.9).

$$\bar{P}^o = \bar{P}b(1 + \bar{T}^o) \quad (5.8)$$

$$\bar{P}^1 = \bar{P}b(1 + \bar{T}^1) \quad (5.9)$$

where $\bar{P}b$ is a weighted world price and \bar{T}^o and \bar{T}^1 are weighted implicit tariff rates before and after reform, respectively. Substitute equations (5.3), (5.4), (5.8) and (5.9) into (5.7) to get (5.10).

$$\left(\frac{\hat{P}_j}{\bar{P}}\right) = \frac{\frac{Pb(1+T_j^1)}{\bar{P}b(1+\bar{T}^1)} - \frac{Pb(1+T_j^0)}{\bar{P}b(1+\bar{T}^0)}}{\frac{Pb(1+T_j^0)}{\bar{P}b(1+\bar{T}^0)}} \quad (5.10)$$

$$\left(\frac{\hat{P}_j}{\bar{P}}\right) = \frac{\frac{1+T_j^1}{1+\bar{T}^1} - \frac{1+T_j^0}{1+\bar{T}^0}}{\frac{1+T_j^0}{1+\bar{T}^0}}$$

The sixth equation is total demand, (D_j), defined as the sum of intermediate and final demand; change in total demand of sector j, (dD_j), is the sum of the change in intermediate demand and change in final demand, equation (6.1).

$$D_j = F_j + I_j \quad (6)$$

$$dD_j = dF_j + dI_j \quad (6.1)$$

The seventh equation is imports, (M_j), which is the difference between the total demand for and output of importable sectors; change in imports of sector j, (dM_j), is the difference between the change in total demand and the change in output of importable sector j, (dQ_j), equation (7.1).

$$M_j = D_j - Q_j \quad (7)$$

$$dM_j = dD_j - dQ_j \quad (7.1)$$

The eighth equation is exports, (X_j), which is the difference between output and total demand of exportable sector j; change in exports of sector j, (dX_j), is taken as the difference between the change in output and the change in total demand of exportable sector j, equation (8.1).

$$X_j = Q_j - D_j \quad (8)$$

$$dX_j = dQ_j - dD_j \quad (8.1)$$

The ninth equation is trade balance, (TB), which is defined as the difference between the sum of exports of exportable sectors, $\sum X_j$, and the sum of imports of importables sectors, $\sum M_j$; the change in the trade balance, (dTB), is the difference between the sum of changes in exports, $\sum dX_j$, and the sum of changes in imports, $\sum dM_j$, equation (9.1).B.

$$TB = \sum X_j - \sum M_j \quad (9)$$

$$dT B = \sum dX_j - \sum dM_j \quad (9.1)$$

B. Simulation Using Absolute Prices

The simulation model is basically the Trade model with one major difference, the assumption regarding exchange rate: in the latter model, the real exchange rate is assumed to be constant; in the former model, the assumption is relaxed. The objective of this section is to present the simulation model which quantifies the effects of trade reform assuming a flexible real exchange rate.

The simulation model begins with equation (1.3) from the Trade model. Equations (1.19) and (1.20) state effective price before and after trade reform with a certain real exchange rate, respectively. V_j^{o*} is equal to the product of r_o , the real exchange rate before trade reform, and V_j^o , effective price before trade reform; V_j^{1*} is equal to the product of r_1 , the real exchange rate after trade reform, and V_j^1 , effective price after trade reform.

$$\hat{V}_j = \frac{V_j^1 - V_j^o}{V_j^o} \quad (1.3)$$

$$V_j^{o*} = r_o V_j^o \quad (1.19)$$

$$V_j^{1*} = r_1 V_j^1 \quad (1.20)$$

Equation (1.21) defines the proportionate change in effective price incorporating a real exchange rate.

$$\hat{V}_j^* = \frac{V_j^{1*} - V_j^{o*}}{V_j^{o*}} \quad (1.21)$$

Substitute equations (1.19) and (1.20) into equation (1.21) to get equation (1.22).

$$\hat{V}_j^* = \frac{r_1 V_j^1 - r_o V_j^o}{r_o V_j^o} \quad (1.22)$$

From equations (1.5) and (1.6) of the Trade model, equations (1.23) and (1.24) are derived. Substitute equations (1.23) and (1.24) to get equations (1.25) and (1.26) which states that \hat{V}_j^* is the product of (r_1/r_o) , and $[(1+E_j^1)/(1+E_j^o)]$, minus one.

$$V_j^1 = V_j^f(1 + E_j^1) \quad (1.23)$$

$$V_j^o = V_j^f(1 + E_j^o) \quad (1.24)$$

$$\hat{V}_j^* = \frac{r_1 V_j^f(1+E_j^1) - r_o V_j^f(1+E_j^o)}{r_o V_j^f(1+E_j^o)} \quad (1.25)$$

$$\hat{V}_j^* = \frac{r_1}{r_o} \left(\frac{1+E_j^1}{1+E_j^o} \right) - 1 \quad (1.26)$$

Equation (1.27) is a restatement of equation (1.2) assuming flexible real exchange rate;

$$dQ_j^* = b_j Q_j (\hat{V}_j^*) \quad (1.27)$$

Substitute equation (1.26) into equation (1.27) to get equation (1.28). Equation (1.28), the heart of the simulation model, shows the change in output due to trade reform with real exchange rate adjustment. All specifications in the remaining equations, except the final demand equation are the same as in the Trade model. All the variables in this simulation model comes with an asterisk (*) to distinguish it from the previous model.

$$dQ_j^* = b_j Q_j^o \left[\frac{r_1}{r_o} \left(\frac{1 + E_j^1}{1 + E_j^o} \right) - 1 \right] \quad (1.28)$$

The complete simulation model consists of the following equations.

$$\Sigma dQ_j^* = \Sigma b_j Q_j^o \left[\frac{r_1}{r_o} \left(\frac{1 + E_j^1}{1 + E_j^o} \right) - 1 \right] \quad (1.29)$$

$$dY_j^* = (V_j) dQ_j^* \quad (3.3)$$

$$\Sigma dY_j^* = \Sigma V_j dQ_j^* \quad (3.4)$$

$$\hat{Y}^* = \frac{\Sigma dY_j^*}{\Sigma Y} \quad (3.5)$$

$$dI_j^* = \Sigma a_{ij}^* Q_i^* \quad (4.2)$$

$$\Sigma dI_j^* = \Sigma \Sigma a_{ij}^* Q_i^* \quad (4.3)$$

The estimation of the final demand has to incorporate a real exchange rate. This is shown in equation (5.10).

$$dF_j^* = [G_{jj}^* (\hat{P}_j^*) + K_j \hat{Y}^*] F_j^o \quad (5.10)$$

where \hat{P}_j^* is the proportionate change in domestic price of sector j with a real exchange rate changes and is defined in equation (5.11).

$$\hat{P}_j^* = \frac{P_j^{1*} - P_j^{o*}}{P_j^{o*}} \quad (5.11)$$

where P_j^{o*} is the domestic price of sector j before reform inclusive of the real exchange rate level r_o .

$$P_j^{0*} = r_o P_b (1 + T_j^o) \quad (5.12)$$

P_j^{1*} is the domestic price of sector j after reform inclusive of a real exchange rate level, r_1 .

$$P_j^{1*} = r_1 P_b (1 + T_j^1) \quad (5.13)$$

Substitute equations (5.12) and (5.13) into equation (5.11) to get equation (5.14)

$$= \frac{r_1 P_b (1 + T_j^1) - r_o P_b (1 + T_j^o)}{r_o P_b (1 + T_j^o)}$$

$$\hat{p}_j^* = \frac{r_1}{r_o} \left(\frac{1 + T_j^1}{1 + T_j^o} \right) - 1 \quad (5.14)$$

Therefore,

$$dF_j^* = \left[G_{jj} \left(\frac{r_1}{r_o} \left(\frac{1 + T_j^1}{1 + T_j^o} \right) - 1 \right) + K_j \hat{Y}_j \right] F_j^o \quad (5.15)$$

$$\sum dF_j^* = \sum \left[G_{jj} \left(\frac{r_1}{r_o} \left(\frac{1 + T_j^1}{1 + T_j^o} \right) - 1 \right) + K_j \hat{Y}_j \right] F_j^o \quad (5.16)$$

$$dD_j^* = dF_j^* + dI_j^* \quad (6.2)$$

$$\sum dD_j^* = \sum dI_j^* + \sum dF_j^* \quad (6.3)$$

$$dM_j^* = dD_j^* - dQ_j^* \quad (7.2)$$

$$\Sigma dM_j^* = \Sigma dD_j^* - \Sigma dQ_j^* \quad (7.3)$$

$$dX_j^* = dQ_j^* - dD_j^* \quad (8.2)$$

$$\Sigma dX_j^* = \Sigma dQ_j^* - \Sigma dD_j^* \quad (8.3)$$

$$dT B^* = \Sigma dX_j^* - \Sigma dM_j^* \quad (9.2)$$

The derivation of (r_1 / r_0) is shown in the following equations.

$$\Sigma dQ_j^* = \Sigma b_j Q_j^0 \left[\frac{r_1}{r_0} \left(\frac{1+H_j^1}{1+H_j^0} \right) - 1 \right] \quad (1.29)$$

$$= \frac{r_1}{r_0} \Sigma b_j Q_j^0 \left(\frac{1+H_j^1}{1+H_j^0} \right) - \Sigma b_j Q_j^0 \quad (1.30)$$

$$\text{let } \alpha_x = \Sigma b_j Q_j^0 \left(\frac{1+H_j^1}{1+H_j^0} \right) \quad (1.31)$$

$$\beta_x = \Sigma b_j Q_j^0 \quad (1.32)$$

Therefore,

$$\Sigma dQ_i^* = \frac{r_1}{r_o} \alpha_x - \beta_x \quad (1.33)$$

The second term of equation (8.3), ΣdD_j^* is the sum of the change in intermediate and final demand.

$$\Sigma dD_j^* = \Sigma dI_j^* + \Sigma dF_j^* \quad (6.3)$$

Substitute equation (1.28) into (4.3) to get equation (4.4).

$$\Sigma dI_j^* = \sum_i \left(\sum_j a_{ij}^* b_j Q_i \left[\frac{r_1}{r_o} \left(\frac{1 + E_j^1}{1 + E_j^o} \right) - 1 \right] \right) \quad (4.4)$$

$$= \frac{r_1}{r_o} \sum_i \left[\sum_j a_{ij}^* b_j Q_i \left(\frac{1 + E_j^1}{1 + E_j^o} \right) \right] - \sum_{i,j} a_{ij}^* b_j Q_i \quad (4.5)$$

$$\text{let } \delta_x = \sum_i \left[\sum_j a_{ij}^* b_j Q_i \left(\frac{1 + E_j^1}{1 + E_j^o} \right) \right] \quad (4.6)$$

$$\epsilon_x = \sum_i \sum_j a_{ij}^* b_j Q_i \quad (4.7)$$

Therefore,

$$\Sigma dI_j^* = \frac{r_1}{r_o} \delta_x - \epsilon_x \quad (4.8)$$

The price effect stated in equation (5.17) is taken by expanding equation (5.16).

$$= \sum G_j \left[\frac{r_1}{r_o} \left(\frac{1 + T_j^1}{1 + T_j^o} \right) - 1 \right] F_j^o \quad (5.17)$$

$$\text{let } \gamma_x = \sum G_j \left(\frac{1 + T_j^1}{1 + T_j^o} \right) F_j^o \quad (5.18)$$

$$\Pi_x = \sum G_j F_j^o \quad (5.19)$$

Therefore,

$$\sum dF_j^* = \sum \left[G_j \left(\frac{r_1}{r_o} \left(\frac{1 + T_j^1}{1 + T_j^o} \right) - 1 \right) + K_j(Y^*) \right] F_j^o \quad (5.20)$$

The income effect stated in equation (5.21) is also taken by expanding equation (5.16).

$$= \sum K_j(\hat{Y}^*) F_j^o \quad (5.21)$$

Substitute equations (3.4), (3.5) and (1.28) into equation (5.21).

$$= \sum K_j \left(\frac{\sum dY_j}{\sum Y_j} \right) F_j^o \quad (5.22)$$

$$= \sum K_j \left[\frac{\sum V_j b_j Q_j \frac{r_1}{r_o} \left(\frac{1 + H_j^1}{1 + H_j^o} \right) - \sum V_j b_j Q_j^o}{\sum Y} \right] F_j^o \quad (5.23)$$

$$\text{let } \rho_x = \frac{\sum V_j b_j Q_j^o \left(\frac{1+E_j^1}{1+E_j^o} \right)}{\sum K_j} F_j^o \quad (5.24)$$

$$\theta_x = \frac{\sum V_j b_j Q_j^o}{\sum Y} F_j^o \quad (5.25)$$

therefore,

$$\sum dF_j^o = \frac{r_1}{r_o} \gamma_x - \pi_x + \frac{r_1}{r_o} \rho_x - \theta_x \quad (5.26)$$

To solve for the value of $\frac{r_1}{r_o}$, substitute equations (1.33), (4.8) and (5.26) into equation (8.3) to get equation (8.4). The subscripts x and m are used to denote all exportable sectors only and all importable sectors only, respectively. Therefore, if the two subscripts are added, one will get a sum for any variable for the entire tradable sector in this model. The subscript in equation (8.4) and (8.5) are used to indicate that computations will be done for exportable sectors.

$$\sum dX_j^* = \sum dQ_j^* - \sum dD_j^* \quad (8.3)$$

$$= \frac{r_1}{r_o} \alpha_x - \beta_x - \left[\frac{r_1}{r_o} \delta_x - \epsilon_x + \frac{r_1}{r_o} \gamma_x - \pi_x + \frac{r_1}{r_o} \rho_x - \theta_x \right] \quad (8.4)$$

$$\sum dX_j^* = \frac{r_1}{r_o} (\alpha_x - \delta_x - \gamma_x - \rho_x) - \beta_x + \epsilon_x + \pi_x + \theta_x \quad (8.5)$$

In the same manner, substitute equation (1.33), (4.8), and (5.6) into equation (7.4) to get (7.5).

$$\sum dM_j^* = \sum dD_j^* - \sum dQ_j^* \quad (7.4)$$

$$\sum dM_b_j^* = \frac{r_1}{r_o} (\delta_m + \rho_m + \gamma_m - \alpha_m) - \epsilon_m - \theta_m - \pi_m + \beta_m \quad (7.5)$$

Then substitute equations (7.5) and (8.5) into equation (9.2) to get equation (9.4).

$$dTB^* = \Sigma dX_j^* - \Sigma dM_j^* \quad (9.2)$$

$$dTB^* = \frac{r_1}{r_o} (\alpha_x - \delta_x - \gamma_x - \rho_x) - \beta_x + \epsilon_x + \pi_x + \theta_x - \frac{r_1}{r_o} (\delta_m + \rho_m + \gamma_m - \alpha_m) - \epsilon_m - \pi_m - \theta_m + \beta_m \quad (9.3)$$

$$- \frac{r_1}{r_o} (-\delta_m - \rho_m - \gamma_m + \alpha_m + \alpha_x - \delta_x - \rho_x - \gamma_x) = -dTB^* - \beta_x + \epsilon_x - \pi_x + \theta_x + \epsilon_m - \pi_m + \theta_m - \beta_m \quad (9.4)$$

$$\frac{r_1}{r_o} = \frac{-dTB^*}{-(\alpha_x + \alpha_m - \delta_m - \delta_x - \rho_m - \rho_x - \gamma_m - \gamma_x)} + \frac{-\beta_x - \beta_m + \epsilon_x + \epsilon_m - \pi_x - \pi_m + \theta_x + \theta_m}{-(\alpha_x + \alpha_m - \delta_m - \delta_x - \rho_m - \rho_x - \gamma_m - \gamma_x)} \quad (9.5)$$

$$\text{let } \alpha_1 = \frac{1}{\alpha_x + \alpha_m - \delta_m - \delta_x - \rho_m - \rho_x - \gamma_m - \gamma_x} \quad (9.6)$$

$$C_1 = \frac{\beta_x + \beta_m - \epsilon_x - \epsilon_m + \pi_x + \pi_m - \theta_x - \theta_m}{\alpha_x + \alpha_m - \delta_m - \delta_x - \rho_m - \rho_x - \gamma_m - \gamma_x} \quad (9.7)$$

$$\frac{r_1}{r_o} = \alpha_1 dTB^* + C_1 \quad (9.8)$$

Once the value of (r_1/r_o) is determined, the estimation of equation (1.28), dQ_j^* , proceed.

C. Simulation Model Using of Relative Prices

The simulation model in this part is the same with the previous one but uses of relative prices which is more appropriate in the long run. Equation (1.34) defines the change in output of sector j , dQ_j'' , to be a function of $\left(\frac{\hat{p}_j}{\bar{V}}\right)''$, the proportionate change in the relative effective price inclusive of the real exchange rate changes as defined in equation (1.35).

$$dQ_j'' = b_j Q_j^o \left(\frac{\hat{p}_j}{\bar{V}}\right)'' \quad (1.34)$$

$$\left(\frac{\hat{p}_j}{\bar{V}}\right)'' = \frac{\frac{r_1 V_j^1}{\hat{V}^1} - \frac{r_o V_j^o}{\bar{V}^o}}{\frac{r_o V_j^o}{\bar{V}^o}} \quad (1.35)$$

where $\left(\frac{V_j^o}{\bar{V}^o}\right)$ is the relative effective price before reform,
 $\left(\frac{V_j^1}{\bar{V}^1}\right)$ is the relative effective price after reform.

Divide equation (1.35) by r_o and V_j^f to get equation (1.36).

$$= \frac{\left(\frac{r_1 V_j^1/V_j^f}{r_o \bar{V}^1/V_j^f} - \frac{r_o V_j^o/V_j^f}{r_o \bar{V}^o/V_j^f}\right)}{\frac{r_o V_j^o/V_j^f}{r_o \bar{V}^o/V_j^f}} \quad (1.36)$$

Then substitute equations (1.13), (1.14), (1.15) and (1.16) into equation (1.36) to get equation (1.38).

$$= \frac{r_1 \left(\frac{1 + E_j^1}{1 + \bar{E}^1} - \frac{1 + E_j^o}{1 + \bar{E}^o} \right)}{\frac{1 + E_j^o}{1 + \bar{E}^o}} \quad (1.37)$$

$$\left(\frac{\hat{V}_j}{\bar{V}}\right)'' = \frac{r_1}{r_o} \left[\frac{1 + E_j^1/1 + \bar{E}^1}{1 + E_j^o/1 + \bar{E}^o} \right] - 1 \quad (1.38)$$

$$dQ_j'' = b_j Q_j^o \left[\frac{r_1}{r_o} \left(\frac{1 + E_j^1/1 + \bar{E}^1}{1 + E_j^o/1 + \bar{E}^o} \right) - 1 \right] \quad (1.39)$$

The complete simulation model consists of equations (1.39) and the following equations.

$$\Sigma dQ_j'' = \Sigma b_j Q_j^o \left[\frac{r_1}{r_o} \left(\frac{1 + E_j^1/1 + \bar{E}^1}{1 + E_j^o/1 + \bar{E}^o} \right) - 1 \right] \quad (1.40)$$

$$\text{let } \psi = \Sigma b_j Q_j^o \left[\left(\frac{1 + E_j^1/1 + \bar{E}^1}{1 + E_j^o/1 + \bar{E}^o} \right) \right] \quad (1.41)$$

$$\kappa = \Sigma b_j Q_j^o \quad (1.42)$$

Therefore,

$$\Sigma dQ_j'' = \frac{r_1}{r_o} \psi - \kappa \quad (1.43)$$

$$dY'' = V_j dQ_j'' \quad (3.6)$$

$$\Sigma dY'' = \Sigma V_j dQ_j'' \quad (3.7)$$

$$Y'' = \frac{\Sigma dY''}{\Sigma Y} \quad (3.8)$$

$$dI_j'' = \Sigma_j a_{y_j} dQ_j'' \quad (4.4)$$

$$\Sigma dI_j'' = \Sigma_i \Sigma_j a_{y_j} dQ_j'' \quad (4.5)$$

Substitute equation (1.39) into equation (4.5) to get equation (4.8).

$$\Sigma dI_j'' = \Sigma_i \left[\Sigma_j a_{y_j} * b_j Q_j^o \left(\frac{r_1 (1 + E_j^1)/(1 + \bar{E}^1)}{r_o (1 + E_j^o)/(1 + \bar{E}^o)} - 1 \right) \right] \quad (4.8)$$

$$\text{let } \sigma = \Sigma_i \left[\Sigma_j a_{y_j} * b_j Q_j^o \left(\frac{(1 + E_j^1)/(1 + \bar{E}^1)}{(1 + E_j^o)/(1 + \bar{E}^o)} \right) \right] \quad (4.9)$$

$$\lambda = \Sigma_i \left[\Sigma_j a_{y_j} * b_j Q_j^o \right] \quad (4.10)$$

Therefore,

$$\Sigma dI_j'' = \frac{r_1}{r_o} \sigma - \lambda \quad (4.11)$$

The estimation of the final demand has to incorporate a flexible real exchange rate and relative prices. This is stated in equation (5.27).

$$dF_j^{//} = \left[G_{jj} \left(r \frac{\hat{P}_j}{\bar{P}} \right) + K_j \hat{Y}^{//} \right] F_j^o \quad (5.27)$$

$$\left(r \frac{\hat{P}_j}{\bar{P}} \right) = \frac{r_1 \left(\frac{P_j^1}{\bar{P}^1} \right) - r_o \left(\frac{P_j^o}{\bar{P}^o} \right)}{r_o \left(\frac{P_j^o}{\bar{P}^o} \right)} \quad (5.28)$$

where,

$r_o \frac{P_j^o}{\bar{P}^o}$ is the pre-reform relative domestic price of sector j with real exchange rate r_o ,

$r_1 \frac{P_j^1}{\bar{P}^1}$ is the post-reform relative domestic price of sector j with real exchange rate r_1 .

Substitute equation (5.3), (5.4), (5.8), and (5.9) into equation (5.28) to get equation (5.30).

$$= \frac{r_1 \frac{Pb (1 + T_j^1)}{\bar{P}b (1 + \bar{T}^1)} - r_o \frac{Pb (1 + T_j^o)}{\bar{P}b (1 + \bar{T}^o)}}{r_o \frac{Pb (1 + T_j^o)}{\bar{P}b (1 + \bar{T}^o)}} \quad (5.29)$$

$$\left(\frac{r \hat{P}_j}{\bar{P}} \right) = \frac{r_1 \left[1 + T_j^1 / 1 + \bar{T}^1 \right]}{r_o \left[1 + T_j^o / 1 + \bar{T}^o \right]} - 1 \quad (5.30)$$

Substitute equation (5.30) into (5.27) to get equation (5.31).

$$dF_j^{//} = \left[G_{jj} \left[\frac{r_1 \left(\frac{1 + T_j^1 / 1 + \bar{T}^1}{1 + T_j^o / 1 + \bar{T}^o} \right) - 1}{r_o} + K_j \hat{Y}^{//} \right] F_j^o \right] \quad (5.31)$$

$$\Sigma dF_j'' = \Sigma G_j \left[\frac{r_1}{r_o} \left(\frac{1 + T_j^1 / 1 + \bar{T}^1}{1 + T_j^o / 1 + \bar{T}^o} \right) - 1 \right] F_j^o + \Sigma K_j \hat{Y}'' F_j^o \quad (5.32)$$

$$\text{let } \mu = \Sigma G_j \left[\frac{r_1}{r_o} \left(\frac{1 + T_j^1 / 1 + \bar{T}^1}{1 + T_j^o / 1 + \bar{T}^o} \right) \right] F_j^o \quad (5.33)$$

$$\Delta = \Sigma G_j F_j^o \quad (5.34)$$

The income effect is stated in equation (5.35).

$$= \Sigma K_j \hat{Y}'' F_j^o \quad (5.35)$$

$$= \Sigma K_j \left(\frac{\Sigma dY_j}{\Sigma Y_j} \right) F_j^o \quad (5.36)$$

$$\text{let } \tau_z = \Sigma K_j \left[\frac{\Sigma V_j b_j Q_j^o \left(\frac{1 + E_j^1 / 1 + \bar{E}^1}{1 + E_j^o / 1 + \bar{E}^o} \right)}{\Sigma Y} \right] F_j^o \quad (5.37)$$

$$\Phi_z = \Sigma K_j \frac{\Sigma V_j b_j Q_j^o}{\Sigma Y} F_j^o \quad (5.38)$$

Substitute equations (5.33), (5.34), (5.37) and (5.38) into (5.32) to get equation (5.39).

$$dF_j'' = \frac{r_1}{r_o} \mu_z - \Delta_z + \frac{r_1}{r_o} \tau_z - \Phi_z \quad (5.39)$$

$$dD_j'' = dI_j'' + dF_j'' \quad (6.4)$$

$$\Sigma dD_j'' = \Sigma dI_j'' + \Sigma dF_j'' \quad (6.5)$$

$$dM_j'' = dD_j'' + dQ_j'' \quad (7.4)$$

$$\Sigma dM_j'' = \Sigma dD_j'' + \Sigma dQ_j'' \quad (7.5)$$

$$dX_j'' = dQ_j'' - dD_j'' \quad (8.4)$$

$$\Sigma dX_j'' = \Sigma dQ_j'' - \Sigma dD_j'' \quad (8.5)$$

$$dT_B'' = \Sigma dX_j'' - \Sigma dM_j'' \quad (9.9)$$

To solve for the value of $\frac{r_1}{r_0}$, substitute equations (1.43), (4.11), (5.39), (6.5), (7.5) and (8.5) into equation (9.9).

$$dT_B'' = \frac{r_1}{r_0}(\psi_x - \sigma_x - \mu_x - \tau_x) - \kappa_x + \lambda_x + \phi_x + \Delta_x - \frac{r_1}{r_0}(\sigma_m + \mu_m + \tau_m - \psi_m) - \lambda_m - \phi_m - \Delta_m + \kappa_m \quad (9.10)$$

$$- \frac{r_1}{r_0}(-\sigma_m - \mu_m - \tau_m + \psi_m + \psi_x - \tau_x - \mu_x - \sigma_x) = -dT_B'' - \kappa_x + \lambda_x - \phi_x + \Delta_x + \lambda_m - \phi_m + \Delta_m - \kappa_m \quad (9.11)$$

$$\frac{r_1}{r_0} = \frac{-dT_B''}{-(\psi_x + \psi_m - \sigma_x - \sigma_m - \mu_x - \mu_m - \tau_x - \tau_m)} + \frac{-\kappa_x - \kappa_m + \lambda_x + \lambda_m - \phi_x - \phi_m + \Delta_x + \Delta_m}{-(\psi_x + \psi_m - \sigma_x - \sigma_m - \mu_x - \mu_m - \tau_x - \tau_m)} \quad (9.12)$$

$$\text{let } \alpha_2 = \frac{1}{\psi_x + \psi_m - \sigma_x - \sigma_m - \mu_x - \mu_m - \tau_x - \tau_m} \quad (9.13)$$

$$C = \frac{\kappa_x + \kappa_m - \lambda_x - \lambda_m + \phi_x + \phi_m - \Delta_x - \Delta_m}{\psi_x + \psi_m - \sigma_x - \sigma_m - \mu_x - \mu_m - \tau_x - \tau_m} \quad (9.14)$$

$$\frac{r_1}{r_0} = \alpha_2 dT_B'' + C_2 \quad (9.15)$$

Once the value of $\frac{r_1}{r_0}$ has been estimated from equation (9.15), equation (1.39) and the rest of the equation can be estimated.

V. Analysis of Results

This section will analyze first, the effects of E.O. 264 and the 5% uniform tariff on the protection structure. Second, the macroeconomic effects of E.O. 264 and the 5% uniform tariffs will be quantified using the Trade and Simulation Models. A relevant issue will also be addressed, i.e., the effects of implementing different levels of uniform tariffs.

Tables 9 and 10 show the changes brought about by E.O. 264 and the 5% uniform tariff on the structure of implicit and effective protection rates, respectively. After the effectivity of E.O. 264 in August 1995, the overall implicit rate dropped slightly - to 15.7% from its pre-reform level of 16%. The more substantial change will take place in year 2000, the final year of E.O. 264: the implicit rate will decrease to 13.1%. Correspondingly the dispersal rates will also drop in all years. The changes will be more pronounced in the manufacturing sector: implicit rates will drop initially to 16.2% upon effectivity of E.O. 264 from its pre-reform level of 16.5% and finally to 13.73% by year 2000. This pattern can be observed for all the major groups within the manufacturing sector with the exception of food processing (I-O 38-62): its implicit rate increased from 26% in 1995 to 30% by year 2000. Most of these commodities that enjoyed increases in tariff were provided for by E.O.s 313.

The most significant result from these series of tariff restructuring is that the traditional bias against agriculture will be gradually addressed.⁴ See Table 10. In the past, manufacturing has always had higher EPR than agriculture as borne out by their respective protection rates in 1988 and 1992: manufacturing sector received about 24.3% and 28.9% while agriculture got 22.3% and 22.4%, respectively. In 1995, agriculture's EPR was already higher than manufacturing, 22% versus 18.5%.⁵ After E.O. 264, the EPR of manufacturing dropped while that of agriculture remained more or less the same, at 22%. This is due to the fact that E.O. 264 focused on the restructuring of manufactured goods only. The rates of agricultural commodities were tariffed in E.O. 313 which took effect in 1996 and the effects will only be captured by the EPRs in year 2000. By year 2000, the EPR of the agricultural sector will be 20.4% versus 15.7% in manufacturing.

The overall EPR dropped slightly from 17.7% in 1995 before E.O. 264 to 17.4% in 1995 after E.O. 264 took effect; by year 2000, it will be around 14.6% - which represents a more significant drop since by then the restructuring will have been completed. The cuts will even be deeper once the 5% uniform tariff takes effect; the overall EPR will be around 3.1%. Similarly, the EPR for the entire manufacturing decreases by about 3% to a level of 15.7% on the final year of E.O. 264 although the changes can be very uneven for the different sectors.⁶ Once, the 5% uniform rate is implemented by year 2004, the overall EPR for the economy will be around 3%; it will be around 5.2% for the importable sector and around -1% for the entire exportable sector. The penalty comes from two things: one, the export tax on logs; two, the -1% was computed assuming that only the garments and semi-conductors industries will enjoy duty drawbacks for the imported inputs. If this assumption is extended to all exportables, the penalty rate will be very close to zero.

Table 9
Weighted implicit tariff and standard deviation
(in percent)

	1988		1992		PRE95		PST95		2000		2004							
											5%		3%		7%		10%	
	τ	σ	τ	σ	τ	σ	τ	σ	τ	σ	τ	σ	τ	σ	τ	σ	τ	σ
1 - 169 ALL SECTORS	20.7	20.5	22.5	22.3	16.0	15.9	15.7	15.6	13.1	12.9	3.2	3.1	1.9	1.9	4.4	4.4	6.3	6.2
Importables	32.8	32.5	35.7	35.4	25.4	25.1	25.0	24.7	20.7	20.5	5.0	5.0	3.0	3.0	7.0	6.9	10.0	9.9
Exportables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 - 27 AGRICULTURE, FISHING & FORESTRY	19.2	19.0	17.9	17.7	17.3	17.1	16.9	16.8	13.5	13.4	3.2	3.2	1.9	1.9	4.5	4.4	6.4	6.3
Importables	30.0	29.7	27.9	27.6	27.0	26.7	26.4	26.1	21.1	20.9	5.0	5.0	3.0	3.0	7.0	6.9	10.0	9.9
Exportables	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 - 23 Agriculture	21.7	21.4	21.4	21.1	21.0	20.8	20.6	20.4	19.0	18.8	3.1	3.1	1.9	1.9	4.4	4.4	6.3	6.2
Importables	34.5	34.1	34.0	33.7	33.5	33.1	32.9	32.5	30.3	30.0	5.0	5.0	3.0	3.0	7.0	6.9	10.0	9.9
Exportables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38 - 169 MANUFACTURING	22.4	22.2	25.6	25.4	16.5	16.3	16.2	16.1	13.7	13.6	3.3	3.3	2.0	2.0	4.6	4.6	6.6	6.5
Importables	34.1	33.8	39.0	38.6	25.1	24.8	24.7	24.4	20.9	20.7	5.0	5.0	3.0	3.0	7.0	6.9	10.0	9.9
Exportables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 10
WEIGHTED EFFECTIVE PROTECTION RATES 1/
(in percent)

	1988		1992		PRE95		POST95		2000		2004							
	σ		σ		σ		σ		σ		3%	5%	7%	10%				
	σ	σ	σ	σ	σ	σ	σ	σ	σ	σ	σ	σ	σ	σ				
0-169 ALL SECTORS	21.9	24.7	25.1	32.1	17.7	20.5	17.4	20.5	14.6	20.0	1.9	1.9	3.1	3.1	4.3	4.4	6.2	6.2
<i>Importables</i>	36.2	18.1	41.0	28.9	29.1	16.0	28.5	16.7	23.4	19.8	3.1	3.2	5.2	5.3	7.3	7.4	10.5	10.6
<i>Exportables</i>	-4.7	6.9	-4.5	6.8	-3.5	5.6	-3.2	5.3	-1.6	2.6	-0.5	1.0	-0.9	1.7	-1.3	2.3	-1.8	3.3
1-27 AGRICULTURE, FISHING AND FORESTRY	19.4	20.1	19.6	23.1	18.7	19.4	18.4	19.6	14.7	19.6	1.9	1.6	3.2	2.6	4.4	3.6	6.3	5.2
<i>Importables</i>	31.1	15.5	31.8	20.1	29.6	15.6	29.1	16.3	23.1	19.7	3.0	3.0	5.1	5.1	7.1	7.1	10.1	10.1
<i>Exportables</i>	-1.9	2.3	-2.6	3.6	-1.3	2.0	-1.2	1.9	-0.8	1.6	-0.2	0.2	-0.3	0.4	-0.4	0.6	-0.6	0.8
1 - 23 Agriculture	22.3	22.1	22.4	22.2	22.1	21.7	21.8	21.8	20.4	21.7	1.9	1.5	3.1	2.5	4.3	3.6	6.2	5.1
<i>Importables</i>	35.9	16.6	36.1	16.7	35.5	16.2	35.0	17.1	32.7	18.6	3.0	3.0	5.0	5.0	7.1	7.1	10.1	10.1
<i>Exportables</i>	-0.9	0.9	-0.7	0.7	-0.6	0.6	-0.5	0.5	-0.4	0.3	-0.1	0.2	-0.2	0.3	-0.3	0.4	-0.4	0.6
38-169 MANUFACTURING	24.3	26.2	28.9	35.0	18.5	21.0	18.2	20.9	15.7	20.4	1.9	2.0	3.2	3.3	4.5	4.6	6.5	6.5
<i>Importables</i>	38.4	18.5	44.9	30.9	29.2	16.1	28.6	16.7	23.9	19.8	3.2	3.2	5.3	5.4	7.4	7.5	10.6	10.8
<i>Exportables</i>	-6.3	8.2	-5.7	8.0	-4.7	6.7	-4.3	6.4	-2.1	3.1	-0.7	1.2	-1.2	2.1	-1.8	2.9	-2.5	4.2

PRE95 before effectivity of E.O. 264

POST95 after effectivity of E.O. 264

1/ Sectors 71-81 (garments) and 146 (semi-conductors) enjoy duty drawbacks.

The Trade Model is used to quantify the effects of E.O. 264 and the 5% uniform tariffs. The model uses data from the 1988 I-O table for all the variables which are expressed in 1988 peso border prices. The first four, A to D, are the results of the Trade Model using relative prices with fixed exchange rates. Both cases A and B use low supply elasticities. Case A captures the effects of E.O. 264 and case B the 5% uniform rate. Cases C and D are similar to cases A and B except that higher supply elasticities are used. The last four scenarios, E-H, are similar to the first four except that the exchange rate is flexible. There are additional simulations for three uniform rates, 3%, 7% and 10%; both low and high supply elasticities are used too. Since the effectivity of E.O. 264 and the uniform tariff are both over a period four to five years, there are no short-run scenarios presented.

Table 11 shows the results of trade reform given fixed exchange rate. Overall, the positive output effects in cases C and D are greater than that of A and B because of higher supply elasticities in the latter two cases. In case A, output increases by 0.4% since there is an overall increase in the relative effective price from their 1995 levels: the output increases are due mainly to a 4.27% increase in the entire exportable sector although this will be toned down by a decline in output in the importable sector by 1.16%. Despite the increase in output, income will drop by 0.03% because, on the average, most of the sectors whose output will decrease are the importable sectors which has lower value-added relative to the exportable sector. The drop in income together with higher relative prices brings down final demand; hence, imports increase mainly due to the increase in intermediate demand and a decline in the output of importables. The increase in exports and imports are mainly excess production and excess demand estimates. Since the model uses the small country assumption, there is a tendency that exports and imports are overestimated because exports and import barriers are not considered. The final effect on the external sector is there is a trade surplus generated by this policy reform.

In case B, output grows by 0.6%. The 5% uniform rate actually increase in relative terms the effective price of not only the exportable sector on the whole but also for many import-competing sectors as well. Nevertheless, the expansion of the economy will come mainly from the manufacturing sector with a potential growth rate of about 0.78% while the output of agriculture will drop by 0.75%. This is expected since the tariff cuts will be deeper for agriculture. Income is estimated to more than double the growth rate of output, i.e., 1.36% since the sectors whose output increased are the ones with high value-added- the exportable sector. There is only small trade surplus that results despite the huge increases in exports since imports increase as fast too because of the positive price effect brought about mainly by the lowering of tariffs coupled with a decline in output of the importable sector.

Case C differs from case A only in the use of higher supply elasticities. It is not surprising that the output growth rates are higher while at the same time showing the same patterns in income growth and the trade balance.

Case D is similar to case B except the in use of higher supply elasticities. Output grows by 1.04% due to the increase in the relative effective price of not only the exportable sectors but many importable sectors as well. Most of the growth will come from the manufacturing sector whose output will increase by about 1.47% while the agricultural sector will suffer an output decline of about 1.2%. The increase in income is also quite encouraging

Table 11
Effects of Trade Reform Assuming Fixed Real Exchange Rate
(in percent)

	A	B	C	D
OUTPUT	0.40	0.60	0.75	1.04
<i>Importables</i>	-1.16	-2.99	-2.09	-5.55
<i>Exportables</i>	4.27	8.71	7.85	15.80
AGRICULTURE	0.51	-0.75	0.82	-1.20
<i>Importables</i>	0.46	-5.03	0.74	-8.05
<i>Exportables</i>	1.27	4.94	2.03	7.91
MANUFACTURING	1.03	0.78	1.92	1.47
<i>Importables</i>	-1.11	-3.64	-2.08	-6.83
<i>Exportables</i>	5.51	10.06	10.33	18.87
INCOME	-0.03	1.36	-0.06	2.44
<i>Importables</i>	-2.21	-0.76	-4.02	-1.34
<i>Exportables</i>	3.40	8.22	6.20	14.78
AGRICULTURE	0.58	-0.67	0.92	-1.08
<i>Importables</i>	0.48	-5.06	0.77	-8.10
<i>Exportables</i>	1.26	4.94	2.01	7.90
MANUFACTURING	-0.06	3.06	-0.12	5.75
<i>Importables</i>	-2.65	-0.68	-4.97	-1.28
<i>Exportables</i>	4.53	9.74	8.49	18.26
TOTAL CHANGE IN IMPORTS	7.18	17.35	13.11	32.63
<i>in Billion Pesos</i>				
TOTAL CHANGE IN EXPORTS	10.10	17.48	18.67	31.90
<i>in Billion Pesos</i>				
CHANGE IN TRADE BALANCE	2.92	0.13	5.56	-0.73
<i>in Billion Pesos (dX - dM)</i>				
TD/GDP	2.1	2.5	1.8	2.6

A : Effects of E.O. 264 using low supply elasticities.

B : Effects of the 5% uniform tariff using low supply elasticities.

C : Effects of E.O. 264 using high supply elasticities.

D : Effects of the 5% uniform tariff using high supply elasticities.

The level of trade deficit in 1988 is estimated to be P 18.4 B

in border prices while the GDP is estimated at P 730 B.

as it increases by more than the output growth rate brought about by the increase in output in sectors with high value-added sectors. ⁷The price effect which comes from the lowering of tariff rates together with positive income effects generates a huge increase in final demand. In this scenario imports increase due to the combined increase in final demand and the output decline in the import-competing sectors and this increase in imports is more than the increase in exports. As a result, there is a trade deficit of about P732 M or 2.6% of GDP.

The simulation results reported in Table 12 are consistent and therefore, comparable with the scenarios in Table 11. The main difference is that Table 12, the partial equilibrium model becomes quasi-general equilibrium because of the introduction of an exchange rate variable. There are two parts to this simulation exercise: first, the model solves for the change in the exchange rate that is compatible with some change in the trade balance. This is shown in equation (9.15) in part III of the paper. Second, once this change in the real exchange rate is known, the estimation of changes in output and the rest of the variables can proceed. Caution here is emphasized that the ensuing changes in the variables are consistent with some level of trade balance. Nevertheless, to make the exercise simpler, the simulation model solves for the change in the real exchange rate that is consistent with no change in the trade balance. In other words, the level of trade balance after reform will be the same as it was before reform. The simplicity here lies in that the model does not need to know what the real exchange rate is before reform and after reform; all it does is compute for the change.

The required change in the exchange rate to set the change in the trade balance to zero in cases A to D are shown in Table 12. Since all the first three cases, A, B and C posted trade surpluses, then the real exchange rate needs to appreciate to balance the trade. In cases E and G, the peso needs to appreciate by about 0.8% to wipe out a trade surplus of P2.92B in case A and P5.56B in case C. Supply is more elastic in case G; therefore, the same 0.8% real appreciation in the currency can balance a larger trade surplus. In case B, the required change is less than .01% because the trade surplus is only about P134 M. Of course, the currency should not appreciate because it will send conflicting signals to economic agents. An appreciation of the peso will hurt exports and encourage more imports. Another factor is the growth rate in output is very small and discouraging at 0.1% in case E and 0.2% in case G. The currency appreciation actually translates to a lower growth rate when compared to the growth rates in cases A and C. The currency need not appreciate because there are other policy tools available that can be used to expand the economy. For instance, monetary authorities can increase money supply or lower interest rates.

Only in case H will the peso need to depreciate in real terms by 0.1% to erase a trade deficit of P732 M. The added bonus is that output will grow by 1.1% relative to the 1.04% in case D. In case H, there are now two prices that drive growth in output: the change in relative prices and the real exchange rate. The growth will be contributed mainly by the manufacturing sector with a growth rate of 1.63%; nevertheless, the output in agriculture will fall by 1.2%. Income will also grow by an impressive 2.51% brought about by the increase in output of the high value-added sectors.

What does it mean if the peso needs to depreciate by 0.1% in real terms? Assume that the domestic inflation rate is 6%, 3% for its major trading partners and that the nominal exchange rate of the trading partners are stable during the period year 2000 to year 2004.

Table 12
Effects of Trade Reform Assuming Flexible Real Exchange Rate
(in percent)

	E	F	G	H
Change in Real Exchange Rate <i>(r1/ro) 1/</i>	-0.8	0.0	-0.8	0.1
OUTPUT	0.10	0.58	0.19	1.11
<i>Importables</i>	-1.72	-3.02	-3.12	-5.42
<i>Exportables</i>	3.69	8.68	6.78	15.95
AGRICULTURE	0.26	-0.76	0.42	-1.15
<i>Importables</i>	0.07	-5.05	0.11	-7.97
<i>Exportables</i>	0.92	4.92	1.47	7.99
MANUFACTURING	0.40	0.75	0.73	1.63
<i>Importables</i>	-1.72	-3.67	-3.24	-6.68
<i>Exportables</i>	4.84	10.03	9.07	19.04
INCOME	-0.30	1.34	-0.55	2.51
<i>Importables</i>	-2.74	-0.79	-4.99	-1.21
<i>Exportables</i>	2.85	8.19	5.18	14.92
AGRICULTURE	0.31	-0.68	0.49	-1.02
<i>Importables</i>	0.09	-5.08	0.14	-8.03
<i>Exportables</i>	0.91	4.92	1.45	7.98
MANUFACTURING	-0.68	3.04	-1.29	5.91
<i>Importables</i>	-3.25	-0.71	-6.11	-1.12
<i>Exportables</i>	3.87	9.70	7.25	18.43
TOTAL CHANGE IN IMPORTS <i>in Billion Pesos</i>	9.09	17.40	16.81	32.16
TOTAL CHANGE IN EXPORTS <i>in Billion Pesos</i>	9.09	17.40	16.81	32.16
CHANGE IN TRADE BALANCE <i>(dX-dM)</i>	0	0	0	0

E : Effects of E.O. 264 using low supply elasticities.

F : Effects of the 5% uniform tariff using low supply elasticities.

G : Effects of E.O. 264 using high supply elasticities.

H : Effects of the 5% uniform tariff using high supply elasticities.

1/ (r1/ro)-1 : If r1>ro, the peso depreciates

:if r1<ro, the peso appreciates.

Then the peso should depreciate by about 3.02% in nominal terms annually from its level in year 2000 for the next four years to achieve a 0.1% real depreciation by year 2004.

To shed some light on the issue of the level of uniform tariff, additional exercises were done for different uniform rates, specifically both rates that are higher and lower than the proposed 5% and an additional rate 10% which is adopted by other countries such as Chile and Mexico. Table 13 and 13a show the effects of different uniform tariffs using low and high supply elasticities, respectively. The level of the uniform rate exhibits the same trend with output, income and the trade balance whether low or high supply elasticities are used: the lower the uniform rate, the higher the output growth rate, but the greater the increase in the trade deficit or the lower the increase in the trade surplus. The higher output growth rate is due to a lower penalty on the exportable sector which in turn is due to a lower uniform rate. In other words, a lower penalty is the same as a greater increase in the relative price for exportables. Since the exportable sector sectors have a higher value-added on the average than the importable sector, the income growth rate will also be greater than the respective output growth rates.

Table 13 shows that the potential growth rate of output is 0.65%, 0.60%, 0.54% and 0.46% while that of income is 1.42%, 1.36%, 1.29% and 1.2% for a 3%, 5%, 7% and 10% uniform tariff, respectively.

The implications though are different for the two main sectors: the potential growth will come substantially from manufacturing while agricultural output declines consistently no matter what the uniform rate is. There is an interesting pattern to the differential growth rates of manufacturing and agriculture relative to the uniform rate. First, there is the general trend that can be observed for the whole economy: the higher the uniform rate, the smaller the decrease in relative effective price for the importable sector. This shows up in lower negative growth rates for the entire importable sector as the uniform rate increases. On the other hand, the higher the uniform rate, the smaller the increase in relative effective price for the exportable sector because the penalty on the exportable sector increases as the uniform rate increases. This also shows up in the overall growth rate of the exportable sector: the exportable sector grows by a lower rate as the uniform rate increases. The manufacturing sector manages to post overall growth rates that are similar to the pattern of the whole economy but the same pattern can't be said for the agricultural sector. One of the reasons could be that the slow down in the growth rate of the exportable sector is greater because the penalty rate on the exportable sector is also increasing much faster than the improvement in the importable sector of agriculture. In fact when a 10% uniform tariff will be adopted by year 2004, the penalty rate for the exportable sector will be higher than it was in year 2000: -1.83% versus 1.62%. See Table 10. This pattern is true also for scenarios using high supply elasticities (Table 13 a) or for all scenarios using flexible real exchange rate.

Table 13a tells the same story. This only difference is that output and income growth rates are higher while the trade deficit as a percentage of GDP also increases. Nevertheless, the trade deficit to GDP ratio still exhibits the same trend with the uniform rate: the lower the uniform rate, the higher the ratio.

Tables 14 and 14a simulate for the required change in the real exchange rate for

different uniform tariff regimes to go back to the level of trade balance before reform. The difference between the two tables are also in the use of low versus high supply elasticities. Under a 3% uniform tariff, the real exchange rate will need to fall by 0.7% to balance the increase in the trade deficit of about P252 M; there is hardly any change in the 5% uniform regime because the trade surplus was very small, although, technically speaking the currency appreciated by less than 0.001% ; for the 7% and 10% uniform rate, the peso appreciates by 0.1% and 0.3% to balance a surplus of about P500M and P1.01B , respectively. There is an observable trend between the change in the real exchange rate and output growth: the greater the rate of real depreciation, the greater the output and income growth. The growth rate in output and income is apparently the highest when the 3% uniform tariff regime is implemented relative to the other uniform tariff regimes. This growth rate, 0.68%, is also higher than the one without real exchange rate adjustment, 0.65%. The growth rates in the 5%, 7% and 10% are lower than the one in the 3% uniform rate for two reasons: the first is the same argument about the lower penalty on exports; the second has to do with the exchange rate. Since the peso appreciates in the remaining three uniform rates, their respective growth rates are lower not only relative to the 3% uniform tariff with exchange rate adjustment but also lower than the same uniform tariff regimes without exchange rate adjustment. Compare the growth rates in Tables 13 and 14. The reason is that the currency appreciation erodes partly the increase in relative effective price for exportables. The performance of the two main sectors, agriculture and manufacturing are similar to the previous scenarios in Tables 13 and 13a. The output in agriculture drops no matter what the uniform tariff regime is.

Table 13
Effects of Different Uniform Tariffs Assuming
Fixed Real Exchange Rate and Low Supply Elasticities
(in percent)

	3%	5%	7%	10%
OUTPUT	0.65	0.60	0.54	0.46
<i>Importables</i>	-3.59	-2.99	-2.40	1.56
<i>Exportables</i>	10.11	8.71	7.33	5.35
AGRICULTURE	-0.73	-0.75	-0.78	-0.82
<i>Importables</i>	-5.36	-5.03	-4.70	-4.24
<i>Exportables</i>	5.57	4.94	4.33	3.44
MANUFACTURING	0.88	0.78	0.69	0.55
<i>Importables</i>	-4.31	-3.64	-2.98	-2.04
<i>Exportables</i>	11.77	10.06	8.37	5.98
INCOME	1.42	1.36	1.29	1.20
<i>Importables</i>	-1.32	-0.76	-0.21	0.58
<i>Exportables</i>	9.45	8.22	6.99	5.27
AGRICULTURE	-0.63	-0.67	-0.71	-0.78
<i>Importables</i>	-5.40	-5.06	-4.74	-4.27
<i>Exportables</i>	5.56	4.94	4.33	3.44
MANUFACTURING	3.20	3.06	2.93	2.75
<i>Importables</i>	-1.34	-0.68	-0.03	0.90
<i>Exportables</i>	11.27	9.74	8.19	6.05
TOTAL CHANGE IN IMPORTS <i>in Billion Pesos</i>	20.79	17.35	13.96	9.11
TOTAL CHANGE IN EXPORTS <i>in Billion Pesos</i>	20.53	17.48	14.47	10.16
CHANGE IN TRADE BALANCE <i>in Billion Pesos(dx-dM)</i>	0.252	0.13	0.501	1.1
TD/GDP	2.57	2.52	2.47	2.39

*The level of trade deficit in 1988 is estimated to be P 18.4 B
in border prices while the GDP is estimated at P 730 B.*

Table 13a
Effects of Different Uniform Tariffs Assuming
Fixed Real Exchange Rate and High Supply Elasticities
(in percent)

	3%	5%	7%	10%
OUTPUT	1.13	1.04	0.94	0.80
<i>Importables</i>	-6.65	-5.55	-4.47	-2.92
<i>Exportables</i>	18.35	15.80	13.27	9.68
AGRICULTURE	-1.16	-1.20	-1.24	-1.31
<i>Importables</i>	-8.58	-8.05	-7.52	-6.78
<i>Exportables</i>	8.91	7.91	6.93	5.50
MANUFACTURING	1.65	1.47	1.29	1.03
<i>Importables</i>	-8.09	-6.83	-5.59	-3.83
<i>Exportables</i>	22.06	18.87	15.70	11.22
INCOME	2.56	2.44	2.33	2.17
<i>Importables</i>	-2.36	-1.34	-0.33	1.10
<i>Exportables</i>	17.00	14.78	12.55	9.43
AGRICULTURE	-1.00	-1.08	-1.14	-1.25
<i>Importables</i>	-8.63	-8.10	-7.58	-6.84
<i>Exportables</i>	8.90	7.90	6.93	5.50
MANUFACTURING	5.99	5.75	5.48	5.15
<i>Importables</i>	-2.51	-1.28	-0.05	1.68
<i>Exportables</i>	21.14	18.26	15.36	11.35
TOTAL CHANGE IN IMPORTS <i>in Billion Pesos</i>	39.07	32.63	26.29	17.21
TOTAL CHANGE IN EXPORTS <i>in Billion Pesos</i>	37.50	31.90	26.35	18.45
CHANGE IN TRADE BALANCE <i>in Billion Pesos(dX-dM)</i>	-1.56	-0.73	-0.057	1.2
TD/GDP	2.75	2.63	2.54	2.36

*The level of trade deficit in 1988 is estimated to be P 18.4 B
in border prices while the GDP is estimated at P 730 B.*

Table 14
Effects of Different Uniform Tariffs Assuming
Flexible Real Exchange Rate and Low Supply Elasticities
(in percent)

	3%	5%	7%	10%
Change in Real Exchange Rate <i>(r1/ro) 1/</i>	0.7	0.0	-0.1	-0.3
OUTPUT	0.68	0.58	0.49	0.35
<i>Importables</i>	-3.54	-3.02	-2.50	-1.76
<i>Exportables</i>	10.16	8.68	7.23	5.14
AGRICULTURE	-0.70	-0.76	-0.82	-0.90
<i>Importables</i>	-5.33	-5.05	-4.76	-4.37
<i>Exportables</i>	5.60	4.92	4.27	3.30
MANUFACTURING	0.93	0.75	0.58	0.32
<i>Importables</i>	-4.26	-3.67	-3.09	-2.26
<i>Exportables</i>	11.83	10.03	8.26	5.74
INCOME	1.44	1.34	1.24	1.10
<i>Importables</i>	-1.27	-0.79	-0.30	0.38
<i>Exportables</i>	9.51	8.19	6.89	5.06
AGRICULTURE	-0.61	-0.68	-0.76	-0.87
<i>Importables</i>	-5.37	-5.08	-4.80	-4.40
<i>Exportables</i>	5.59	4.92	4.27	3.31
MANUFACTURING	3.25	3.04	2.81	2.51
<i>Importables</i>	-1.29	-0.71	-0.14	0.67
<i>Exportables</i>	11.33	9.70	8.07	5.81
TOTAL CHANGE IN IMPORTS <i>in Billion Pesos</i>	20.63	17.4	14.29	9.80
TOTAL CHANGE IN EXPORTS <i>in Billion Pesos</i>	20.63	17.4	14.29	9.80
CHANGE IN TRADE BALANCE <i>(dX-dM)</i>	0	0	0	0

1/ $(r1/ro)-1$: If $r1 > ro$, the peso depreciates
:if $r1 < ro$, the peso appreciates.

Table 14a
Effects of Different Uniform Tariffs Assuming
Flexible Real Exchange Rate and High Supply Elasticities
(in percent)

	3%	5%	7%	10%
Change in Real Exchange Rate <i>(r1/ro) 1/</i>	0.22	0.11	-0.01	-0.18
OUTPUT	1.30	1.11	0.94	0.68
<i>Importables</i>	-6.37	-5.42	-4.48	-3.16
<i>Exportables</i>	18.68	15.95	13.26	9.43
AGRICULTURE	-1.05	-1.15	-1.25	-1.40
<i>Importables</i>	-8.42	-7.97	-7.53	-6.91
<i>Exportables</i>	9.08	7.99	6.93	5.37
MANUFACTURING	1.99	1.63	1.27	0.77
<i>Importables</i>	-7.77	-6.68	-5.60	-4.08
<i>Exportables</i>	22.44	19.04	15.69	10.93
INCOME	2.75	2.51	2.32	2.06
<i>Importables</i>	-2.08	-1.21	-0.34	0.87
<i>Exportables</i>	17.31	14.92	12.54	9.20
AGRICULTURE	-0.89	-1.02	-1.15	-1.34
<i>Importables</i>	-8.48	-8.03	-7.59	-6.97
<i>Exportables</i>	9.07	7.98	6.92	5.37
MANUFACTURING	6.34	5.91	5.47	4.88
<i>Importables</i>	-2.18	-1.12	-0.07	1.41
<i>Exportables</i>	21.52	18.43	15.35	11.07
TOTAL CHANGE IN IMPORTS <i>in Billion Pesos</i>	38.08	32.16	26.33	18.03
TOTAL CHANGE IN EXPORTS <i>in Billion Pesos</i>	38.08	32.16	26.33	18.03
CHANGE IN TRADE BALANCE <i>(dX-dM)</i>	0	0	0	0

1/ $(r1/ro)-1$: If $r1 > ro$, the peso depreciates
:if $r1 < ro$, the peso appreciates.

V. Conclusion:

The implementation of a uniform tariff will generate substantial benefits for the economy, although some of these benefits are difficult to quantify. Certain realities and conditions may make the achievement of a strictly uniform rate unattainable but this should not deter policy makers from implementing the policy with few exemptions. The strongest argument should obviously be the administrative simplicity, the reduction of corruption and easy tax compliance.

Contrary to usual expectations, the results of the Trade and simulation models show that output can increase from trade reform and the 5% uniform tariff as resource allocation improves within the tradable sectors due to changes in relative prices. The potential output growth rates and effects on the trade deficit are also relatively small. Therefore, the required real exchange rate adjustment appears to very quite small too. Nevertheless, the importance of the real exchange rate adjustment is that it sends signals to economic agents consistent with trade reform. An exchange rate that is not consistent with the direction of trade reform can exacerbate output growth as shown cases E and G.

Although the level of the uniform rate is not central to the paper, it remains to be a very legitimate concern and important policy issue. The additional simulations can point out some policy issues and choices. Apparently, a lower uniform rate translates to a potentially higher growth rate in output and income for the economy. In fact, the growth rate for manufacturing is highest while the decrease in output is least for agriculture when the uniform rate is lowest, i.e., at 3%. The hitch is that the trade deficit increases as the uniform rate drops. Therefore, the required real depreciation will also be greater as the uniform rate drops but the additional gain is that output will even increase by a greater rate. The policy issue or choice is then around adopting a lower uniform rate versus the necessary adjustments in the exchange rate to avert an increase in the trade deficit. An additional insight provided by these results is the effect on the agricultural sector, i.e., the higher the uniform rate, the greater the rate by which the output in agriculture will fall.

However, there are other concerns regarding the level of the uniform rate, given the results mentioned above. Here are some points for consideration: one, the lower the rate, the lower the distortion from possible exemptions and from its effects on the overvaluation of the exchange rate; two, the lower the rate, the easier tax compliance will be. What is not known here is whether the low rate is low enough to increase tax collection due to easier tax compliance that can compensate for the fall in tax collection due to the low rate.

1. A related study in this project " Macroeconomic Impact of A Tariff Reduction: A Three-Gap Analysis with Model Simulations" by J. Yap focuses on the effect of the 5% uniform rate on the Fiscal Deficit.

2. This classification was taken from " Refinements in EPR Estimation Methodology" Revised Final Report prepared by AYC Consultants, Inc.

3. The Trade Model Using the I-O Framework is actually derived from the Chunglee Model (Lee, 1983) with some major revisions on supply and final demand equations. The trade model makes one major revision about prices. Instead of using absolute EPRs, the Trade Model uses relative prices. The Chunglee Model has also been extended to incorporate changes in the exchange rate. This is the simulation model.

4. A previous paper, see (Tan, 1995) shows that agriculture was penalized for the same years. The reasons stems from two sources: one, the said study uses the 1983 I-O table, compared to the 1988 I-O table used in this present study. As a consequence, the classification of the different traded sectors into importables or exportables are different. The method of classification follows certain broad guidelines but cut off levels of imports or exports used depend on the discretion of the researcher. Two, the static nature of I-O tables can't capture the changes in the coefficients. For the same reason, using the 1988 I-O table suffers from the same drawback. A more permanent solution is to use more recent I-O tables to crunch these numbers.

5. The weighted EPRs in Table 10 uses 301 traded sectors. Basically, it follows the classification used in a Revised Final report prepared by AYC consultants, "Refinements of EPR Estimation Methodology". In this said report, there are only 169 tradable sectors, out of which 140 are mixed sectors. Nevertheless, in this study these mixed sectors have to split into anexportable and importable portion to make it suitable for the Trade Model. Hence, there is a difference in the EPR results depending on the size of the matrix. If only 169 sectors are used, the EPR of the manufacturing will be lower than agriculture in Pre-1995. The trend will be the same for the years after and before the Pre-95 year.

6. The EPR for the major manufacturing sectors are in Appendix Table 3.

7. The proof is can be seen from the following equations:

$$Y_j = V_j Q_j, \quad d Y_j = V_j d Q_j, \quad d Y_j / Y_j = V_j d Q_j / Y_j, \quad d Y_j / Y_j = V_j d Q_j / V_j Q_j,$$

Therefore, $d Y_j / Y_j = d Q_j / Q_j$. The percent change in income and output are equal for each j. Therefore, if income grows by more than the output growth rate, it can only be due to the differences in value-added.

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR					Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	Relative Tj				
				2000 end yea	2004(end year)										2004 endyea	5%	3%	7%	10%
					5%	3%	7%	10%											
1	MX	Palay	92000	0.03	0.13	0.15	0.12	0.09	0.8	68	-0.4	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
1	MM		21386960919	0.03	-0.24	-0.24	-0.23	-0.22	0.8	32434998	-0.4	0.5	-0.9	0.03	-0.23	0.01	0.02	0.03	
2	PM	Corn	11930171667	0.10	-0.10	-0.11	-0.09	-0.08	0.8	29680000	-0.4	0.5	-0.9	0.09	-0.10	0.01	0.02	0.03	
3	MX	Other vegetables	74953828	0.03	0.12	0.13	0.10	0.08	0.9	27868120	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
3	MM		9042250170	-0.03	0.02	0.01	0.03	0.04	0.9	6865575255	-0.4	0.5	-0.8	-0.03	0.01	0.01	0.02	0.03	
5	PX	Banana	6866728000	0.04	0.12	0.13	0.10	0.08	0.8	3916301000	-0.3	0.5	-0.6	0.03	0.10	-0.02	-0.04	-0.06	
6	PX	Pineapple	2982808000	0.03	0.12	0.13	0.10	0.08	0.7	1587397000	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
7	PX	Mango	4025230000	0.03	0.11	0.13	0.10	0.08	0.9	2818893000	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
8	MX	Citrus fruits	19799282	0.03	0.12	0.13	0.10	0.08	0.7	9385405	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
8	MM		286791812	-0.11	-0.04	-0.05	-0.03	-0.02	0.6	311623730	-0.4	0.5	-0.8	-0.09	-0.03	0.01	0.02	0.03	
9	MX	Fruits and nuts exc. coconut	115579163	0.03	0.11	0.13	0.10	0.08	0.8	52593368	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
9	MM		5017339626	-0.24	0.05	0.04	0.06	0.07	0.8	5015958685	-0.4	0.5	-0.8	-0.23	0.04	0.01	0.02	0.03	
10	PX	Coconut	13823463000	0.03	0.11	0.13	0.10	0.08	0.9	1224967000	-0.3	0.5	-0.6	0.03	0.10	-0.02	-0.04	-0.06	
13	PX	Abaca	905891000	0.03	0.11	0.13	0.10	0.08	0.8	0	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
14	MX	Other fiber crops	112808174	0.03	0.11	0.13	0.10	0.08	0.8	12188032	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
14	MM		431654253	0.01	0.14	0.13	0.14	0.16	0.8	98579940	-0.4	0.5	-0.8	0.01	0.12	0.01	0.02	0.03	
15	MX	Coffee	1549343464	0.02	0.12	0.14	0.11	0.08	0.9	208360970	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
15	MM		1368317691	0.28	-0.28	-0.29	-0.28	-0.27	0.8	427905353	-0.4	0.5	-0.8	0.19	-0.16	0.01	0.02	0.03	
16	PM	Cacao	139666855	-0.20	0.14	0.13	0.14	0.16	0.8	14603806	-0.4	0.5	-0.8	-0.19	0.12	0.01	0.02	0.03	
17	PX	Rubber	1039590000	0.03	0.11	0.13	0.10	0.08	0.8	38692000	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
18	MX	Other agricultural	470824676	0.03	0.11	0.13	0.10	0.08	0.8	11920073	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
18	MM		1045796352	0.01	-0.07	-0.08	-0.07	-0.06	0.8	265395313	-0.4	0.5	-0.8	0.01	-0.07	0.01	0.02	0.03	
20	MX	Cattle and other livestock	28969807	0.04	0.12	0.14	0.11	0.08	0.7	8358556	-0.8	0.5	-1.6	0.03	0.10	-0.02	-0.04	-0.06	
20	MM		5808288234	-0.04	0.07	0.06	0.08	0.09	0.7	3413314625	-0.8	0.5	-1.6	-0.04	0.05	0.01	0.02	0.03	
23	MX	Other poultry and poultry products	7590507	0.04	0.14	0.17	0.12	0.09	0.7	3197602	-0.8	0.5	-1.6	0.03	0.10	-0.02	-0.04	-0.06	
23	MM		1404067216	0.08	0.00	-0.01	0.00	0.01	0.7	1198269005	-0.8	0.5	-1.6	0.06	-0.01	0.01	0.02	0.03	
25	MX	Ocean, coastal and inland fishing	4860859081	0.03	0.12	0.13	0.10	0.08	0.9	1279716051	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Obj	2000 end year	Relative EPR				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyear	Relative Tj			
					2004(end year)										2004(end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
25	MM		15944306771	-0.11	0.09	0.08	0.10	0.11	0.9	9265113697	-0.4	0.5	-0.8	-0.08	0.08	0.01	0.02	0.03
26	MX	Aquaculture and other fishery activities	11808742619	0.04	0.13	0.14	0.11	0.09	0.7	1414903470	-0.4	0.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06
26	MM		2695196389	-0.09	-0.01	-0.02	0.00	0.01	0.7	976577785	-0.4	0.5	-0.8	-0.02	0.09	0.01	0.02	0.03
27	MX	Forestry	187142710	0.05	0.49	0.51	0.46	0.43	0.8	7840974	-0.5	0.5	-1.0	0.03	0.37	-0.02	-0.04	-0.06
27	MM		15336549872	-0.06	0.13	0.13	0.14	0.15	0.8	1303986443	-0.5	0.5	-1.0	-0.06	0.11	0.01	0.02	0.03
28	PX	Gold and silver mining	15910086000	0.04	0.12	0.13	0.10	0.08	0.6	137946000	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
29	PX	Copper mining	7205014000	0.04	0.12	0.14	0.10	0.08	0.7	140733000	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
30	PX	Nickel mining	156233000	0.04	0.12	0.14	0.10	0.08	0.8	0	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
31	PX	Chromite mining	357893000	0.05	0.12	0.14	0.10	0.07	0.6	132844000	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
32	MX	Other metal mining	56556549	0.03	0.12	0.13	0.10	0.08	0.8	0	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
32	MM		40102228	-0.04	0.14	0.13	0.15	0.16	0.8	0	-0.5	0.5	-1.0	-0.03	0.12	0.01	0.02	0.03
33	PM	Coal mining	1255756483	-0.05	0.13	0.13	0.14	0.16	0.6	0	-0.5	0.5	-1.0	-0.05	0.11	0.01	0.02	0.03
34	MX	Crude petroleum and natural gas	0	0.04	0.13	0.15	0.12	0.09	0.7	0	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
34	MM		275065516	-0.04	0.16	0.15	0.17	0.18	0.7	19604745	-0.5	0.5	-1.0	-0.04	0.12	0.01	0.02	0.03
35	MX	Stone quarrying, clay and sand pits	334158065	0.04	0.13	0.14	0.11	0.08	0.7	6426537	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
35	MM		2119867599	-0.07	0.15	0.14	0.16	0.17	0.7	88933075	-0.5	0.5	-1.0	-0.06	0.12	0.01	0.02	0.03
36	PM	Salt mining	1024042915	-0.02	0.14	0.13	0.15	0.16	0.8	916122058	-0.5	0.5	-1.0	-0.02	0.12	0.01	0.02	0.03
37	MX	Other non-metallic mining and quarrying	51789729	0.03	0.11	0.13	0.10	0.08	0.8	0	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
37	MM		1296103	0.02	0.14	0.13	0.15	0.16	0.8	0	-0.5	0.5	-1.0	0.02	0.12	0.01	0.02	0.03
38	MX	Slaughtering & meat packing	17094551	0.03	0.11	0.13	0.10	0.08	0.4	7439121	-0.8	1.0	-1.6	0.03	0.10	-0.02	-0.04	-0.06
38	MM		35636553382	0.13	-0.15	-0.16	-0.15	-0.14	0.2	31165617093	-0.8	1.0	-1.6	0.12	-0.16	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Obj	2000 end year	Relative EPR				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyear	Relative Tj			
					2004(end year)										2004(end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
39	MX	Meat & meat products processing	3187639	-0.24	0.95	1.02	0.89	0.79	0.4	1557687	-0.8	1.0	-1.6	0.03	0.10	-0.02	-0.04	-0.06
39	MM		4687745877	0.09	-0.19	-0.20	-0.19	-0.18	0.3	4587664295	-0.8	1.0	-1.6	0.13	-0.19	0.01	0.02	0.03
40	MX	Milk processing	110831693	0.06	0.15	0.17	0.12	0.09	0.6	31949896	-0.8	1.0	-1.5	0.03	0.10	-0.02	-0.04	-0.06
40	MM		3027126361	-0.10	0.17	0.16	0.18	0.19	0.6	3297363273	-0.8	1.0	-1.5	-0.08	0.11	0.01	0.02	0.03
41	MX	Butter and cheese manufacturing	3708909	0.07	0.13	0.15	0.11	0.09	0.7	1575264	-0.8	1.0	-1.5	0.03	0.10	-0.02	-0.04	-0.06
41	MM		494079411	-0.13	0.06	0.05	0.06	0.07	0.6	821867999	-0.8	1.0	-1.5	-0.12	0.04	0.01	0.02	0.03
43	MX	Other dairy products	53443643	0.09	0.18	0.20	0.15	0.12	0.6	24302671	-0.8	1.0	-1.5	0.03	0.10	-0.02	-0.04	-0.06
43	MM		1179059589	-0.24	0.06	0.05	0.07	0.08	0.5	1147941960	-0.8	1.0	-1.5	-0.20	0.02	0.01	0.02	0.03
44	MX	Canning & preserving of fruits and vegetables	4504632900	0.11	0.18	0.20	0.15	0.12	0.4	1438948831	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
44	MM		2511339270	-0.15	-0.03	-0.05	-0.02	0.01	0.3	2480849691	-0.5	0.5	-0.9	-0.05	0.06	0.01	0.02	0.03
45	MX	Fish canning	3199492312	0.18	0.15	0.19	0.12	0.06	0.4	1229644084	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
45	MM		1545228121	-0.07	-0.08	-0.09	-0.07	-0.06	0.3	1542330282	-0.5	0.5	-0.9	-0.03	0.06	0.01	0.02	0.03
46	MX	Fish drying, smoking & mfg of other seafood products	8949453262	0.23	0.15	0.19	0.12	0.06	0.3	2640512786	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
46	MM		1807802810	-0.10	-0.09	-0.10	-0.07	-0.05	0.3	1666599354	-0.5	0.5	-0.9	-0.01	0.10	0.01	0.02	0.03
47	MX	Prod'n of crude coconut oil, copra cake and meal	14279687837	0.04	0.12	0.14	0.11	0.08	0.2	850448602	-0.3	1.0	-0.6	0.03	0.10	-0.02	-0.04	-0.06
47	MM		1385785567	-0.35	-0.21	-0.24	-0.18	-0.13	0.2	334199677	-0.3	1.0	-0.6	-0.02	0.11	0.01	0.02	0.03
48	MX	Other crude vegetable oil exc coconut oil, fish and other marine oils and fats	49288581	0.05	0.15	0.17	0.13	0.10	0.4	0	-0.3	1.0	-0.6	0.03	0.10	-0.02	-0.04	-0.06

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR								Relative Tj							
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
48	MM		518074812	-0.11	0.15	0.13	0.18	0.21	0.4		0	-0.3	1.0	-0.6	-0.06	0.10	0.01	0.02	0.03
49	MX	Manufacture of refined coconut and vegetable oil	761282032	0.09	0.33	0.36	0.29	0.24	0.3	213515194	-0.1	0.5	-0.2	0.03	0.10	-0.02	-0.04	-0.06	
49	MM		1228185324	-0.18	0.10	0.08	0.12	0.16	0.3	883907515	-0.1	0.5	-0.2	-0.06	0.06	0.01	0.02	0.03	
50	PM	Rice and corn milling	55723959205	0.13	-0.23	-0.23	-0.22	-0.22	0.4	52947182620	-0.3	0.5	-0.5	0.08	-0.22	0.01	0.02	0.03	
51	MX	Flour, cassava & other grains milling	722055274	0.03	0.12	0.13	0.10	0.08	0.8	68396294	-0.3	0.5	-0.5	0.03	0.10	-0.02	-0.04	-0.06	
51	MM		4154599345	-0.13	0.06	0.06	0.07	0.08	0.8	867062565	-0.3	0.5	-0.5	-0.12	0.06	0.01	0.02	0.03	
52	MX	Mfr of bakery prods exc noodles	741878786	0.16	0.24	0.28	0.21	0.15	0.4	358266547	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
52	MM		12480974921	-0.06	-0.06	-0.07	-0.05	-0.03	0.4	12202458139	-0.5	0.5	-0.9	-0.05	-0.03	0.01	0.02	0.03	
53	MX	Noodles mfg	58548250	0.14	0.24	0.27	0.20	0.15	0.4	28044767	-0.3	0.5	-0.5	0.03	0.10	-0.02	-0.04	-0.06	
53	MM		1050953834	-0.11	0.01	0.00	0.02	0.03	0.4	1065506822	-0.3	0.5	-0.5	-0.08	0.00	0.01	0.02	0.03	
54	PM	Sugar milling and refining	9554217957	0.13	-0.31	-0.31	-0.30	-0.29	0.4	5363918756	-0.2	0.5	-0.4	0.12	-0.29	0.01	0.02	0.03	
55	MX	Mfr of cocoa, chocolate and sugar confectionery	417492576	0.14	0.32	0.36	0.28	0.23	0.3	162951193	-0.2	0.5	-0.4	0.03	0.10	-0.02	-0.04	-0.06	
55	MM		1677022376	-0.32	-0.01	-0.04	0.01	0.04	0.3	1528747676	-0.2	0.5	-0.4	-0.15	0.01	0.01	0.02	0.03	
56	PX	Mfr of desiccated coconut	2514154000	0.03	0.12	0.13	0.10	0.08	0.4	1170888000	-0.3	0.5	-0.6	0.03	0.10	-0.02	-0.04	-0.06	
58	MX	Coffee roasting and processing	36441696	-0.24	1.44	1.55	1.33	1.16	0.2	14459919	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
58	MM		1201968203	0.26	-0.51	-0.52	-0.50	-0.49	0.1	958724054	-0.5	0.5	-0.9	0.16	-0.29	0.01	0.02	0.03	
59	MX	Mfr of animal feeds	77501953	0.05	0.26	0.30	0.23	0.18	0.4	0	-0.3	0.5	-0.5	0.03	0.10	-0.02	-0.04	-0.06	
59	MM		6672269023	0.10	-0.14	-0.14	-0.13	-0.12	0.4	0	-0.3	0.5	-0.5	0.06	-0.09	0.01	0.02	0.03	
60	MX	Mfr of starch & starch prods	831731	0.03	0.19	0.22	0.17	0.13	0.5	246355	-0.3	0.5	-0.5	0.03	0.10	-0.02	-0.04	-0.06	
60	MM		512646542	-0.12	0.10	0.09	0.11	0.12	0.5	362883346	-0.3	0.5	-0.5	-0.07	0.04	0.01	0.02	0.03	

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Obj	2000 end year	Relative EPR				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyear	Relative Tj			
					2004 (end year)										2004 (end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
61	MX	Mfr of flavoring extracts, mayonnaise and food coloring products	63321541	0.06	0.21	0.24	0.19	0.15	0.5	18069484	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
61	MM		1727381832	-0.16	0.17	0.16	0.18	0.20	0.5	1000602073	-0.5	0.5	-0.9	-0.11	0.08	0.01	0.02	0.03
62	MX	Miscellaneous food prods	80893888	0.04	0.35	0.39	0.31	0.25	0.4	36416926	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
62	MM		1886494247	-0.24	0.17	0.15	0.18	0.20	0.3	1832688122	-0.5	0.5	-0.9	-0.11	0.05	0.01	0.02	0.03
63	MX	Alcoholic liquors and wine	105634104	0.24	0.44	0.48	0.39	0.33	0.4	16908875	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
63	MM		1568367264	-0.29	0.07	0.06	0.08	0.09	0.3	626627417	-0.5	0.5	-0.9	-0.18	-0.02	0.01	0.02	0.03
64	MX	Malt and malt liquors	462065780	0.10	0.16	0.18	0.14	0.11	0.6	228257956	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
64	MM		6728420084	-0.20	-0.03	-0.03	-0.02	-0.01	0.6	6725174868	-0.5	0.5	-0.9	-0.17	-0.03	0.01	0.02	0.03
65	MX	Softdrinks & carbonated water	25633492	0.08	0.47	0.51	0.42	0.36	0.4	11180173	-0.5	0.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
65	MM		5331458339	-0.10	0.06	0.05	0.07	0.08	0.3	4667688551	-0.5	0.5	-0.9	-0.05	-0.04	0.01	0.02	0.03
66	MX	Cigarette mfg	304768433	0.12	0.15	0.18	0.13	0.10	0.6	151619928	-0.2	1.0	-0.4	0.03	0.10	-0.02	-0.04	-0.06
66	MM		10046129044	-0.19	-0.04	-0.05	-0.04	-0.03	0.6	10170989381	-0.2	1.0	-0.4	-0.18	-0.04	0.01	0.02	0.03
67	MX	Cigar, chewing & smoking tobacco	185696212	0.11	0.16	0.18	0.14	0.10	0.6	72638212	-0.2	1.0	-0.4	0.03	0.10	-0.02	-0.04	-0.06
67	MM		87168952	-0.23	0.01	0.00	0.02	0.03	0.6	92907750	-0.2	1.0	-0.4	-0.10	0.07	0.01	0.02	0.03
68	MX	Tobacco leaf flue curing and redrying	402320634	0.03	0.11	0.13	0.10	0.08	0.5	2702108	-0.2	1.0	-0.4	0.03	0.10	-0.02	-0.04	-0.06
68	MM		1485279421	-0.19	-0.02	-0.03	-0.01	0.00	0.3	39888693	-0.2	1.0	-0.4	-0.17	-0.02	0.01	0.02	0.03
69	MX	Textile, spinning, weaving, texturizing and finishing	3380723957	0.05	0.12	0.14	0.10	0.07	0.6	93831783	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
69	MM		3180437518	-0.06	0.11	0.10	0.12	0.14	0.5	422981804	-0.4	1.0	-0.8	-0.03	0.11	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model(301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR							Relative Tj							
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
70	MX	Fabric knitting mills	6657673740	0.06	0.12	0.14	0.10	0.07	0.6	967788136	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
70	MM		2466204918	-0.07	0.05	0.04	0.06	0.07	0.5	4935593094	-0.4	1.0	-0.8	-0.04	0.07	0.01	0.02	0.03
71	MX	Hosiery, underwear & outerwear knitting	3130677102	0.03	0.11	0.13	0.10	0.08	0.7	470815820	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
71	MM		79182563	-0.16	0.05	0.04	0.06	0.07	0.6	90946845	-0.4	1.0	-0.8	0.01	0.14	0.01	0.02	0.03
72	MX	Mfr of made-up textile goods exc. wearing apparel	775729472	0.03	0.11	0.13	0.10	0.08	0.7	31809082	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
72	MM		257843264	-0.14	0.06	0.05	0.07	0.08	0.6	78299845	-0.4	1.0	-0.8	-0.08	0.08	0.01	0.02	0.03
73	MX	Mfr of carpets and rugs	19715603	0.03	0.11	0.13	0.10	0.08	0.4	8654236	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
73	MM		103727600	-0.20	0.04	0.03	0.05	0.07	0.4	101358925	-0.4	1.0	-0.8	-0.12	0.06	0.01	0.02	0.03
74	MX	Cordage, rope, twine and net mfg	254879901	0.03	0.11	0.13	0.10	0.08	0.2	10557293	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
74	MM		501596804	-0.15	-0.02	-0.05	0.01	0.05	0.2	47222496	-0.4	1.0	-0.8	-0.05	0.07	0.01	0.02	0.03
75	MX	Mfr of articles made of native materials	589121101	0.03	0.09	0.11	0.08	0.06	0.5	26371896	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
75	MM		3438889	-0.13	-0.07	-0.08	-0.06	-0.05	0.4	1809201	-0.4	1.0	-0.8	0.02	0.15	0.01	0.02	0.03
76	MX	Mfr of artificial leather and impregnated & coated fabrics	1724907	0.03	0.11	0.13	0.10	0.08	0.4	0	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
76	MM		34998231	-0.21	0.06	0.04	0.07	0.09	0.4	0	-0.4	1.0	-0.8	-0.12	0.05	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR						Relative Tj								
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
77	MX	Mfr of fiber batting, padding, upholstery fillings incl. coir, linoleum and other hard surfaced floor coverings	1849367	0.03	0.11	0.12	0.09	0.08	0.6	255395	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
77	MM		111922366	0.03	0.14	0.13	0.15	0.17	0.5	34429063	-0.4	1.0	-0.8	0.01	0.11	0.01	0.02	0.03
78	MX	Custom tailoring & dressmaking shops	589882504	0.03	0.11	0.13	0.10	0.08	0.7	180483505	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
78	MM		695230997	-0.14	0.06	0.05	0.07	0.08	0.6	478879663	-0.4	1.0	-0.8	-0.09	0.08	0.01	0.02	0.03
79	MX	Mfr of ready-made clothing	18254719832	0.03	0.11	0.13	0.10	0.08	0.7	4632294383	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
79	MM		1596672112	-0.15	0.06	0.05	0.06	0.08	0.7	7765771745	-0.4	1.0	-0.8	-0.06	0.10	0.01	0.02	0.03
80	MX	Embroidery establishments	284528825	0.03	0.11	0.13	0.10	0.08	0.8	27874706	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
80	MM		4030783	-0.13	0.06	0.05	0.07	0.08	0.7	8214863	-0.4	1.0	-0.8	0.01	0.14	0.01	0.02	0.03
81	MX	Mfr of other wearing apparel exc footwear	695153663	0.03	0.11	0.13	0.10	0.08	0.8	117560698	-0.4	1.0	-0.8	0.03	0.10	-0.02	-0.04	-0.06
81	MM		20129538	-0.17	0.01	0.00	0.02	0.03	0.8	94432574	-0.4	1.0	-0.8	-0.03	0.11	0.01	0.02	0.03
82	MX	Tanneries and leather finishing	24822037	0.04	0.12	0.13	0.10	0.08	0.7	347107	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
82	MM		66002543	-0.06	0.07	0.06	0.07	0.08	0.7	16704324	-0.5	0.5	-1.0	-0.05	0.06	0.01	0.02	0.03
83	MX	Mfr of prods of leather and leather substitutes,	167303465	0.05	0.12	0.14	0.11	0.08	0.7	57936546	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
83	MM		239156555	-0.20	-0.04	-0.05	-0.04	-0.03	0.6	216989601	-0.5	0.5	-1.0	-0.14	0.00	0.01	0.02	0.03
84	MX	Mfr of leather footwear & footwear parts	1913995801	0.05	0.12	0.14	0.11	0.08	0.8	162906428	-0.5	1.0	-1.0	0.03	0.10	-0.02	-0.04	-0.06

Appendix Table 1
Data for the Trade Model(301 Traded Sectors)

IO	Typ	Sectors	Obj	Relative EPR								Relative Tj							
				2000 end year	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyear	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
84	MM		23374340	-0.19	-0.02	-0.03	-0.02	0.00	0.7	304671964	-0.5	1.0	-1.0	-0.07	0.07	0.01	0.02	0.03	
85	MX	Sawmills and planing mills	1842236312	0.26	0.09	0.15	0.03	-0.06	0.2	52251097	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
85	MM		4291509743	-0.13	-0.09	-0.10	-0.08	-0.07	0.2	264915049	-0.5	1.5	-1.0	-0.07	0.05	0.01	0.02	0.03	
86	MX	Mfr of veneer and plywood	3249380815	0.21	0.11	0.16	0.06	-0.01	0.3	132248926	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
86	MM		1794153849	-0.14	-0.06	-0.07	-0.06	-0.05	0.2	183332629	-0.5	1.5	-1.0	-0.05	0.08	0.01	0.02	0.03	
87	PM	Mfr of hardboard and particle board	248276434	-0.06	-0.09	-0.10	-0.08	-0.07	0.4	12728753	-0.5	1.5	-1.0	-0.05	-0.04	0.01	0.02	0.03	
88	MX	Wood drying and preserving plants	146523421	0.10	0.16	0.19	0.14	0.10	0.4	3951720	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
88	MM		387697467	0.02	0.11	0.10	0.13	0.14	0.4	22395954	-0.5	1.5	-1.0	-0.01	0.09	0.01	0.02	0.03	
89	MX	Millwork plants	787711775	0.12	0.17	0.20	0.14	0.10	0.4	27602566	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
89	MM		115406818	-0.05	-0.08	-0.08	-0.07	-0.05	0.4	14035612	-0.5	1.5	-1.0	0.00	0.09	0.01	0.02	0.03	
90	MX	Mfr of wooden and cane containers and small cane wares	1045370070	0.09	0.13	0.16	0.11	0.07	0.4	41630162	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
90	MM		25469287	-0.05	-0.09	-0.09	-0.08	-0.07	0.3	6427892	-0.5	1.5	-1.0	0.02	0.13	0.01	0.02	0.03	
91	MX	Mfr of wood carvings	904099011	0.09	0.15	0.17	0.12	0.09	0.5	36785558	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
91	MM		6109992	-0.05	-0.07	-0.07	-0.06	-0.05	0.4	3020961	-0.5	1.5	-1.0	0.02	0.14	0.01	0.02	0.03	
92	MX	Mfr of misc wood, cork & cane prods.	555306599	0.10	0.12	0.15	0.09	0.04	0.4	17269147	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
92	MM		134203578	-0.04	-0.05	-0.05	-0.04	-0.02	0.4	14305234	-0.5	1.5	-1.0	0.00	0.09	0.01	0.02	0.03	
93	MX	Mfr and repair of wooden furniture incl upholstery	1088340618	0.14	0.17	0.21	0.14	0.09	0.4	470362762	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
93	MM		1204857953	-0.06	-0.11	-0.12	-0.10	-0.08	0.3	1185452604	-0.5	1.5	-0.9	-0.03	0.02	0.01	0.02	0.03	

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR								Relative Tj							
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
94	MX	Mfr and repair of rattan furniture incl upholstery	3511264553	0.11	0.14	0.17	0.11	0.06	0.5	1020294940	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
94	MM		581686298	-0.05	-0.10	-0.11	-0.09	-0.08	0.4	547934707	-0.5	1.5	-0.9	0.00	0.09	0.01	0.02	0.03	
95	MX	Mfr and repair of other furnitures and fixtures	11246249	0.14	0.17	0.21	0.13	0.07	0.3	3302221	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
95	MM		181854703	-0.08	-0.09	-0.10	-0.08	-0.06	0.3	107925517	-0.5	1.5	-0.9	-0.05	-0.01	0.01	0.02	0.03	
96	MX	Pulp, paper and paperboard	664658061	0.08	0.14	0.17	0.11	0.08	0.5	8365262	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
96	MM		3415400594	-0.07	0.09	0.08	0.10	0.12	0.5	165113413	-0.5	1.5	-0.9	-0.05	0.07	0.01	0.02	0.03	
97	MX	Paper and paperboard containers	24161396	0.06	0.12	0.14	0.10	0.07	0.6	248253	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
97	MM		2230181006	-0.11	0.05	0.04	0.06	0.07	0.6	49612753	-0.5	1.5	-0.9	-0.10	0.05	0.01	0.02	0.03	
98	MX	Mfr of articles of paper and paperboard	679391418	0.08	0.13	0.15	0.10	0.07	0.5	9493301	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
98	MM		1208631574	-0.07	-0.02	-0.03	-0.01	0.00	0.5	51815570	-0.5	1.5	-0.9	-0.05	0.03	0.01	0.02	0.03	
99	MX	Newspapers and periodicals	89606160	0.09	0.14	0.16	0.11	0.07	0.5	33775865	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
99	MM		1009722582	0.08	0.05	0.04	0.06	0.07	0.5	954103759	-0.5	1.5	-0.9	0.03	0.05	0.01	0.02	0.03	
100	MX	Printing and publishing of books and pamphlets	48560783	0.08	0.14	0.16	0.11	0.08	0.5	16690038	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
100	MM		1332257169	0.07	0.06	0.05	0.07	0.08	0.5	1205977047	-0.5	1.5	-0.9	0.03	0.05	0.01	0.02	0.03	
101	MX	Commercial & job printing & other allied industries	434528395	0.09	0.13	0.16	0.11	0.07	0.5	23060104	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
101	MM		2505775919	-0.07	-0.05	-0.06	-0.05	-0.04	0.4	279399997	-0.5	1.5	-0.9	-0.06	-0.01	0.01	0.02	0.03	
102	MX	Mfr of basic ind'l chemicals	2966514376	0.04	0.12	0.14	0.10	0.08	0.7	0	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	

Appendix Table 1
Data for the Trade Model(301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR								Relative Tj							
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
102	MM		2392807664	-0.04	0.14	0.13	0.15	0.17	0.6		0	-0.5	0.5	-1.0	-0.03	0.12	0.01	0.02	0.03
103	MX	Mfr of fertilizer	2122289885	0.03	0.11	0.13	0.10	0.08	0.9	98790122	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
103	MM		1771140175	0.01	0.13	0.13	0.14	0.15	0.9	513045592	-0.5	0.5	-1.0	0.01	0.12	0.01	0.02	0.03	
104	MX	Mfr of synthetic resins , plastic materials	963769864	0.05	0.11	0.13	0.10	0.07	0.7	6329412	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
104	MM		1630402609	-0.03	0.12	0.11	0.13	0.14	0.7	85077262	-0.5	0.5	-1.0	-0.03	0.11	0.01	0.02	0.03	
105	MX	Mfr of pesticides, insecticides, etc	13230864	0.05	0.11	0.13	0.09	0.06	0.6	175113	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
105	MM		967670653	-0.04	0.13	0.12	0.14	0.15	0.6	40406734	-0.5	0.5	-1.0	-0.04	0.11	0.01	0.02	0.03	
106	MX	Mfr. of paints, varnish & lacquers	34327031	0.05	0.12	0.14	0.10	0.07	0.7	2393535	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
106	MM		1278714136	-0.15	0.06	0.05	0.07	0.08	0.6	207411524	-0.5	0.5	-1.0	-0.13	0.05	0.01	0.02	0.03	
107	MX	Mfr of drugs and medicines	154425317	0.05	0.12	0.14	0.10	0.08	0.7	26021379	-0.4	1.5	-0.8	0.03	0.10	-0.02	-0.04	-0.06	
107	MM		8127496252	-0.02	0.14	0.13	0.15	0.16	0.6	3517228097	-0.4	1.5	-0.8	-0.03	0.11	0.01	0.02	0.03	
108	MX	Mfr of soap and detergents	441013708	0.13	0.16	0.19	0.13	0.09	0.3	182572270	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
108	MM		2880206237	-0.09	-0.15	-0.18	-0.13	-0.10	0.2	2630858195	-0.5	0.5	-1.0	-0.05	-0.02	0.01	0.02	0.03	
109	MX	Mfr of perfumes, cosmetics & other toilet preparations	263178503	0.10	0.14	0.17	0.12	0.09	0.5	93118353	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
109	MM		2197247706	-0.19	-0.02	-0.03	-0.01	0.01	0.4	1683644969	-0.5	0.5	-1.0	-0.14	0.01	0.01	0.02	0.03	
110	MX	Mfr of misc chemical products	1823601138	0.05	0.12	0.14	0.09	0.06	0.6	129907799	-0.5	0.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
110	MM		1277113618	-0.13	0.13	0.12	0.13	0.15	0.6	642744490	-0.5	0.5	-1.0	-0.08	0.11	0.01	0.02	0.03	
111	MX	Petroleum refineries	3834564692	0.03	0.11	0.13	0.10	0.08	0.9	313227004	-0.1	1.5	-0.3	0.03	0.10	-0.02	-0.04	-0.06	

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR								Relative Tj							
				2000 end year	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyear	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
111	MM		36471302851	-0.06	0.11	0.10	0.12	0.13	0.9	6390311132	-0.1	1.5	-0.3	-0.06	0.10	0.01	0.02	0.03	
112	MX	Mfr of asphalt, lubricants and misc prods of petroleum and coal	2691278813	0.06	0.10	0.13	0.08	0.05	0.7	7965651	-0.1	1.5	-0.3	0.03	0.10	-0.02	-0.04	-0.06	
112	MM		919871013	-0.03	0.12	0.11	0.13	0.14	0.6	12815120	-0.1	1.5	-0.3	-0.01	0.13	0.01	0.02	0.03	
113	MX	Rubber tire & tube mfg	1361552169	0.05	0.12	0.14	0.10	0.08	0.5	211323337	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
113	MM		2794126024	-0.11	-0.04	-0.05	-0.03	-0.01	0.5	1094500510	-0.6	1.5	-1.1	-0.06	0.01	0.01	0.02	0.03	
114	MX	Mfr of rubber footwear	1311249795	0.05	0.12	0.14	0.11	0.08	0.7	493532884	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
114	MM		515717943	-0.15	-0.01	-0.01	0.00	0.01	0.6	707365412	-0.6	1.5	-1.1	-0.07	0.06	0.01	0.02	0.03	
115	MX	Mfr of other rubber products, n.e.c	85847027	0.06	0.12	0.14	0.10	0.07	0.6	0	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
115	MM		446720837	-0.13	0.05	0.04	0.06	0.08	0.5	0	-0.6	1.5	-1.1	-0.10	0.05	0.01	0.02	0.03	
116	MX	Mfr of plastic furniture,plastic footwear	1573716979	0.04	0.11	0.13	0.10	0.07	0.7	116482077	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
116	MM		2744605093	-0.06	0.02	0.01	0.03	0.04	0.7	515709852	-0.6	1.5	-1.1	-0.05	0.05	0.01	0.02	0.03	
117	MX	Manufacture of pottery, china & earthenware	386931389	0.04	0.12	0.14	0.11	0.08	0.7	148410200	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
117	MM		263216317	-0.14	-0.01	-0.02	0.00	0.01	0.7	273541613	-0.5	1.5	-1.0	-0.08	0.05	0.01	0.02	0.03	
118	MX	Mfr of flat glass	99668236	0.06	0.13	0.16	0.11	0.08	0.5	1143618	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
118	MM		404507176	-0.07	-0.08	-0.09	-0.07	-0.05	0.5	10874255	-0.5	1.5	-1.0	-0.05	-0.02	0.01	0.02	0.03	
119	MX	Mfr of glass container	97042427	0.08	0.17	0.20	0.14	0.10	0.5	8807058	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
119	MM		1534454782	-0.09	0.13	0.12	0.14	0.16	0.5	316084940	-0.5	1.5	-1.0	-0.07	0.08	0.01	0.02	0.03	
120	MX	Mfr of other glass and glass products	3472426	0.08	0.16	0.19	0.14	0.10	0.6	241836	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06	
120	MM		168499097	-0.08	0.11	0.10	0.12	0.13	0.5	57066947	-0.5	1.5	-1.0	-0.07	0.07	0.01	0.02	0.03	
121	PM	Cement mfr	4163309780	0.11	0.20	0.19	0.21	0.23	0.2	235685949	-0.5	1.5	-1.0	0.02	0.12	0.01	0.02	0.03	

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR						Relative Tj								
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
122	MX	Mfr of structural clay products	29097066	0.04	0.12	0.14	0.10	0.08	0.7	992337	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
122	MM		366064069	-0.01	0.06	0.05	0.07	0.08	0.7	47117635	-0.5	1.5	-1.0	-0.01	0.05	0.01	0.02	0.03
123	MX	Mfr of structural concrete prods	315975	0.09	0.08	0.14	0.02	-0.07	0.3	5739	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
123	MM		704427466	-0.29	-0.05	-0.06	-0.04	-0.03	0.3	25613107	-0.5	1.5	-1.0	-0.13	0.05	0.01	0.02	0.03
124	MX	Mfr of other non- metallic mineral prods	358425563	0.04	0.12	0.13	0.10	0.08	0.7	1139584	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
124	MM		605653464	-0.10	0.07	0.06	0.08	0.09	0.7	12157883	-0.5	1.5	-1.0	-0.08	0.06	0.01	0.02	0.03
125	MX	Blast furnace and steel making furnace,	2633578222	0.05	0.11	0.13	0.09	0.06	0.6	32742699	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
125	MM		5793525570	-0.05	0.12	0.11	0.13	0.14	0.6	373205112	-0.5	1.5	-1.0	-0.04	0.10	0.01	0.02	0.03
126	MX	Iron and steel foundries	2706649606	0.07	0.12	0.14	0.09	0.06	0.5	53665227	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
126	MM		5682830394	-0.08	0.11	0.10	0.12	0.13	0.5	322311171	-0.5	1.5	-1.0	-0.05	0.10	0.01	0.02	0.03
127	MX	Non-ferrous smelting & refining plants,	4354863666	0.03	0.11	0.13	0.10	0.08	0.3	58638	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
127	MM		1182495391	-0.35	0.18	0.13	0.23	0.30	0.2	47149	-0.5	1.5	-1.0	-0.04	0.14	0.01	0.02	0.03
128	MX	Non-ferrous foundries	169061684	0.07	0.11	0.13	0.09	0.06	0.5	341965	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
128	MM		100482896	0.00	0.11	0.10	0.12	0.14	0.5	9957729	-0.5	1.5	-1.0	-0.01	0.10	0.01	0.02	0.03
129	MX	Cutlery, handtools, gen. hardware	107454323	0.05	0.11	0.13	0.09	0.07	0.7	8037123	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
129	MM		2334693927	-0.08	0.01	0.01	0.02	0.03	0.7	465268515	-0.5	1.5	-1.0	-0.07	0.02	0.01	0.02	0.03
130	MX	Structural metal prods	269104299	0.05	0.12	0.14	0.10	0.07	0.7	1196334	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
130	MM		879815972	-0.04	-0.03	-0.04	-0.02	-0.01	0.6	12093281	-0.5	1.5	-1.0	-0.03	0.00	0.01	0.02	0.03
131	MX	Mfr of metal containers	357255090	0.14	0.12	0.15	0.08	0.03	0.4	8727625	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
131	MM		1568679860	-0.06	-0.12	-0.13	-0.11	-0.10	0.3	88864906	-0.5	1.5	-1.0	-0.05	-0.01	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	2000 end yea	Relative EPR				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	Relative Tj			
					2004 (end year)										2004 (end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
132	MX	Metal stamping, coating, engraving mills	71500117	0.07	0.11	0.14	0.09	0.06	0.6	1025847	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
132	MM		3027119006	-0.15	0.03	0.02	0.03	0.05	0.6	91487059	-0.5	1.5	-1.0	-0.12	0.04	0.01	0.02	0.03
133	MX	Mfr of Wire nails	2000	0.13	0.11	0.15	0.07	0.02	0.4	29	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
133	MM		269013059	-0.07	-0.15	-0.16	-0.14	-0.13	0.3	8683965	-0.5	1.5	-1.0	-0.05	-0.04	0.01	0.02	0.03
134	MX	Mfr of other fabricated wire & cable prods	28414041	0.08	0.11	0.14	0.09	0.05	0.4	343320	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
134	MM		331306214	-0.09	-0.04	-0.05	-0.04	-0.02	0.4	15143676	-0.5	1.5	-1.0	-0.07	0.00	0.01	0.02	0.03
135	MX	Mfr of non- electric lighting and heating fixtures	150956762	0.10	0.14	0.16	0.11	0.07	0.5	49933047	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
135	MM		130960892	-0.04	0.00	-0.01	0.01	0.02	0.4	150676351	-0.5	1.5	-1.0	-0.03	0.05	0.01	0.02	0.03
136	MX	Mfr of fabricated metal prods exc mach'y & equip	21381350	0.07	0.12	0.14	0.10	0.06	0.5	8775662	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
136	MM		60751106	-0.12	0.03	0.02	0.04	0.05	0.5	1566197033	-0.5	1.5	-1.0	-0.09	0.04	0.01	0.02	0.03
137	MX	Mfr of agricultural machinery and equipment	12096469	0.11	0.12	0.15	0.09	0.05	0.4	4222352	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
137	MM		136242676	0.04	0.11	0.10	0.12	0.13	0.4	202671667	-0.5	1.5	-1.0	0.00	0.09	0.01	0.02	0.03
138	MX	Mfr of metal and wood-working mach'y	109522210	0.05	0.12	0.13	0.10	0.07	0.7	24459640	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
138	MM		11098220	0.03	0.14	0.13	0.15	0.16	0.7	1608036445	-0.5	1.5	-1.0	0.01	0.12	0.01	0.02	0.03
139	MX	Mfr of engines nd turbines	220011288	0.07	0.13	0.15	0.11	0.08	0.6	80452565	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
139	MM		114725615	0.06	0.15	0.15	0.16	0.18	0.6	5033944612	-0.5	1.5	-1.0	0.02	0.11	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR					Vj	Fbj	Gjj1	Kj	Gjj2	Relative Tj				
				2000 end yea	2004 (end year)									2000 endyea	2004 (end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
140	MX	Mfr, assembly & repair of office, computing and acctg machines	492994840	0.03	0.11	0.13	0.10	0.07	0.7	121881850	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
140	MM		137217563	0.03	0.13	0.13	0.14	0.16	0.7	1489181728	-0.5	1.5	-1.0	0.02	0.12	0.01	0.02	0.03
141	MX	Mfr of pumps, compressors, blowers and airconditioners	4537375	0.07	0.12	0.15	0.10	0.07	0.6	2119198	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
141	MM		185681257	-0.02	0.11	0.10	0.12	0.13	0.6	1064027622	-0.5	1.5	-1.0	-0.04	0.09	0.01	0.02	0.03
142	MX	Machine shops & mfr of non-electrical mach'y and eq. n.e.c.	624240374	0.07	0.12	0.14	0.10	0.07	0.6	136958011	-0.5	1.5	-1.0	0.03	0.10	-0.02	-0.04	-0.06
142	MM		244447090	0.04	0.14	0.13	0.14	0.16	0.6	1197568705	-0.5	1.5	-1.0	0.01	0.11	0.01	0.02	0.03
143	MX	Mfr of electrical ind'l mach'y and apparatus	273492720	0.07	0.12	0.15	0.10	0.07	0.6	98413591	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
143	MM		233896436	-0.04	0.09	0.08	0.10	0.11	0.6	3301359394	-0.5	1.5	-0.9	-0.04	0.07	0.01	0.02	0.03
144	MX	Mfr of radio and TV receiving sets, sound recording & reproducing eq. incl records and tapes	1517728435	0.07	0.12	0.15	0.10	0.07	0.5	640582611	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
144	MM		1179890140	-0.03	-0.08	-0.08	-0.07	-0.06	0.5	3707023428	-0.5	1.5	-0.9	-0.03	-0.01	0.01	0.02	0.03
145	MX	Mfr of communication and detection equipment	547419137	0.03	0.12	0.13	0.10	0.08	0.7	78771371	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06
145	MM		19394523	-0.03	0.12	0.11	0.13	0.14	0.7	314771691	-0.5	1.5	-0.9	-0.01	0.12	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model(201 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR								Relative Tj							
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
146	MX	Mfr of parts and supplies for radio, TV & communication (semi-conductors)	16257854937	0.03	0.11	0.13	0.09	0.08	0.9	57571720	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
146	MM		126383220	-0.04	0.12	0.11	0.12	0.14	0.8	379025146	-0.5	1.5	-0.9	-0.02	0.12	0.01	0.02	0.03	
147	MX	Mfr of appliances and housewares	532600658	0.12	0.14	0.17	0.11	0.07	0.5	248560123	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
147	MM		1697530483	-0.03	-0.03	-0.04	-0.02	-0.01	0.4	2235842280	-0.5	1.5	-0.9	-0.04	0.01	0.01	0.02	0.03	
148	MX	Mfr of primary cells and batteries and electric accumulators	338229683	0.06	0.13	0.15	0.10	0.07	0.6	81139172	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
148	MM		973163367	-0.03	0.04	0.03	0.05	0.06	0.6	515086167	-0.5	1.5	-0.9	-0.03	0.05	0.01	0.02	0.03	
149	MX	Insulated wires and cables	1262240715	0.05	0.12	0.14	0.11	0.08	0.7	11960798	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
149	MM		125065733	-0.06	0.04	0.03	0.05	0.06	0.7	24228502	-0.5	1.5	-0.9	-0.02	0.08	0.01	0.02	0.03	
150	MX	Mfr of current-carrying wiring devices, conduits & fittings	45470836	0.08	0.13	0.15	0.10	0.07	0.5	504894	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
150	MM		1469733268	-0.05	0.06	0.05	0.06	0.08	0.5	45291699	-0.5	1.5	-0.9	-0.05	0.05	0.01	0.02	0.03	

Appendix Table 1
Data for the Trade Model(301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR								Relative Tj							
				2000 end yea	2004(end year)				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	2004(end year)				
					5%	3%	7%	10%							5%	3%	7%	10%	
151	MX	Mfr of electrical lamps, fluorescent tubes and other electrical apparatus & supplies, n.e.c.	86388060	0.06	0.13	0.15	0.11	0.07	0.6	12123834	-0.5	1.5	-0.9	0.03	0.10	-0.02	-0.04	-0.06	
151	MM		354689054	-0.07	0.03	0.03	0.04	0.05	0.6	129003976	-0.5	1.5	-0.9	-0.05	0.04	0.01	0.02	0.03	
152	MX	Shipyards and boatyards	7962636	0.06	0.12	0.14	0.10	0.07	0.6	3256615	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
152	MM		729711471	0.01	0.10	0.09	0.11	0.12	0.5	830125704	-0.6	1.5	-1.1	-0.01	0.09	0.01	0.02	0.03	
153	MX	Mfr and assembly of motor vehicles	1054246230	0.04	0.12	0.13	0.10	0.08	0.8	483253008	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
153	MM		2691618539	-0.05	-0.01	-0.01	0.00	0.01	0.8	3347027682	-0.6	1.5	-1.1	-0.04	0.01	0.01	0.02	0.03	
154	MX	Rebuilding & major alteration of motor vehicles	0	0.09	0.13	0.15	0.10	0.07	0.6	0	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
154	MM		205336382	-0.07	0.01	0.00	0.02	0.04	0.6	6130044	-0.6	1.5	-1.1	-0.06	0.02	0.01	0.02	0.03	
155	MX	Mfr of motor vehicles parts and accessories	373143169	0.05	0.12	0.13	0.10	0.08	0.7	1101985	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
155	MM		122549870	-0.10	0.07	0.06	0.08	0.09	0.7	59621426	-0.6	1.5	-1.1	-0.09	0.06	0.01	0.02	0.03	
156	MX	Mfr, assembly of motorcycles & bicycles	28366568	0.05	0.12	0.14	0.11	0.08	0.7	13857288	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06	
156	MM		370284721	0.01	-0.05	-0.05	-0.04	-0.03	0.7	677168199	-0.6	1.5	-1.1	0.00	-0.04	0.01	0.02	0.03	

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	2000 end yea	Relative EPR				Vj	Fbj	Gjj1	Kj	Gjj2	2000 endyea	Relative Tj			
					2004(end year)										2004(end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
157	MX	Mfr, assembly, rebuilding & major alteration of railroad equipment, aircraft, and animal and hand-drawn vehicle	34552859	0.04	0.12	0.13	0.10	0.08	0.8	9386978	-0.6	1.5	-1.1	0.03	0.10	-0.02	-0.04	-0.06
157	MM		63959455	-0.03	0.14	0.13	0.15	0.16	0.8	2259957966	-0.6	1.5	-1.1	-0.04	0.12	0.01	0.02	0.03
158	MX	Mfr of professional, scientific measuring a & controlling eq	14086480	0.05	0.12	0.14	0.10	0.07	0.7	6125596	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
158	MM		159876763	-0.04	0.12	0.11	0.13	0.14	0.6	936406856	-0.7	1.5	-1.5	-0.04	0.10	0.01	0.02	0.03
159	MX	Mfr of photographic and optical instruments	28694000	0.03	0.12	0.13	0.10	0.08	0.8	-54341412	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
159	MM		0	-0.04	0.14	0.13	0.14	0.16	0.8	501387898	-0.7	1.5	-1.5	-0.05	0.11	0.01	0.02	0.03
160	MX	Mfr of watches and clocks	20870341	0.05	0.12	0.14	0.10	0.08	0.8	10003040	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
160	MM		273397135	-0.14	0.09	0.08	0.10	0.11	0.7	1598916639	-0.7	1.5	-1.5	-0.13	0.07	0.01	0.02	0.03
161	MX	Mfr & repair of furniture & fixtures, made primarily of metal	24153515	0.14	0.14	0.17	0.11	0.06	0.4	11492515	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
161	MM		75756306	-0.05	-0.10	-0.11	-0.10	-0.08	0.4	90052580	-0.7	1.5	-1.5	-0.05	-0.02	0.01	0.02	0.03
162	MX	Mfr of jewelry & related articles	484473128	0.04	0.12	0.13	0.10	0.08	0.5	103086656	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
162	MM		39090423	-0.12	0.11	0.09	0.12	0.14	0.4	106166810	-0.7	1.5	-1.5	-0.03	0.13	0.01	0.02	0.03
163	MX	Mfr of musical instruments	87956678	0.06	0.13	0.15	0.11	0.08	0.6	25160516	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
163	MM		21934641	-0.07	0.06	0.05	0.07	0.08	0.5	96838845	-0.7	1.5	-1.5	-0.04	0.08	0.01	0.02	0.03

Appendix Table 1
Data for the Trade Model (301 Traded Sectors)

IO	Typ	Sectors	Qbj	Relative EPR					Vj	Fbj	Gjj1	Kj	Gjj2	Relative Tj				
				2000 end yea	2004 (end year)									2000 end yea	2004 (end year)			
					5%	3%	7%	10%							5%	3%	7%	10%
164	MX	Mfr of sporting and athletic goods	149316293	0.11	0.13	0.16	0.11	0.07	0.5	68818255	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
164	MM		348152344	-0.09	0.03	0.02	0.04	0.05	0.5	442671180	-0.7	1.5	-1.5	-0.08	0.05	0.01	0.02	0.03
165	MX	Mfr of surgical, dental, medical and orthopedic supplies	18283971	0.10	0.13	0.16	0.10	0.07	0.5	6932328	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
165	MM		136979637	-0.15	0.08	0.07	0.09	0.10	0.4	343299280	-0.7	1.5	-1.5	-0.12	0.07	0.01	0.02	0.03
166	MX	Mfr of optalmic goods	0	0.11	0.21	0.24	0.18	0.13	0.5	0	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
166	MM		133091446	-0.05	0.00	-0.01	0.00	0.01	0.5	25426348	-0.7	1.5	-1.5	-0.05	-0.02	0.01	0.02	0.03
167	MX	Mfr of toys and dolls exc. rubber and plastic toys	837398323	0.06	0.12	0.14	0.10	0.08	0.6	288269227	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
167	MM		251217118	-0.08	-0.03	-0.03	-0.02	-0.01	0.6	307075849	-0.7	1.5	-1.5	-0.02	0.07	0.01	0.02	0.03
168	MX	Mfr of stationers', artists' and office supplies	48454030	0.09	0.13	0.15	0.10	0.07	0.5	1096399	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
168	MM		261376881	-0.12	0.08	0.07	0.08	0.10	0.5	17999373	-0.7	1.5	-1.5	-0.09	0.07	0.01	0.02	0.03
169	MX	Misc. mfg	3816719918	0.04	0.12	0.13	0.10	0.07	0.6	903505877	-0.7	1.5	-1.5	0.03	0.10	-0.02	-0.04	-0.06
169	MM		751642368	-0.08	0.02	0.01	0.03	0.05	0.6	774342437	-0.7	1.5	-1.5	-0.01	0.10	0.01	0.02	0.03

Qbj = 1988 output in peso border prices

PM = purely importable

PX = purely exportable

MM = importable component of a mixed sector

MX = exportable component of a mixed sector

relative epr = $(1+E^j)/(1+E^{\wedge})$

E^j = jth EPR

E[^] = weighted EPR

APPENDIX TABLE 1
DATA FOR TRADE MODEL
Weighted EPR & Tj
(used in computing relative EPR)

	PRE95	YR2000	YR2004			
			3%	5%	7%	10%
Tj all sectors	16.0	13.1	1.9	3.2	4.4	6.3
E all sectors	17.7	14.6	1.9	3.1	4.3	6.2

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
35	MX	Stone quarrying, clay and sand pits	334,158,065	57,947,236	232,010,691	314,629,363	6,426,537	321,055,900	172308000	0
35	MM		2,119,867,599	367,611,863	1,423,828,716	1,995,979,340	88,933,075	2,084,912,415	0	119880508
36	PM	Salt mining	1,024,042,915	281,795,346	833,668,454	160,561,357	916,122,058	1,076,683,415	11000	52649916
37	MX	Other non-metallic mining and quarrying	51,789,729	13,673,727	41,111,104	1,548,025,216	-	1,548,025,216	44588000	0
37	MM		1,296,103	342,202	1,013,832	38,741,274	-	38,741,274	0	1577481515
38	MX	Slaughtering & meat packing	17,094,551	1,025,973	7,481,088	2,225,013	7,439,121	9,664,134	8548000	0
38	MM		35,636,553,382	2,138,818,624	8,079,249,480	4,638,425,834	31,165,617,093	35,804,042,927	0	168553345
39	MX	Meat & meat products processing	3,187,639	237,678	1,148,130	71,977	1,557,687	1,629,664	1594000	0
39	MM		4,687,745,877	349,529,249	1,430,063,726	105,849,315	4,587,664,295	4,693,513,610	0	5801771
40	MX	Milk processing	110,831,693	11,984,860	69,932,285	84,807,905	31,949,896	116,757,801	55847000	0
40	MM		3,027,126,361	327,340,349	1,865,599,375	2,316,343,272	3,297,363,273	5,613,706,544	0	2647524640
41	MX	Butter and cheese manufacturing	3,708,909	405,212	2,446,818	1,077,619	1,575,264	2,652,883	1857000	0
41	MM		494,079,411	53,980,045	303,992,250	143,554,141	821,867,999	965,422,140	0	472123783
42	NT	Ice cream, sherberts & other flavored ices	2,183,436,948	101,832,129	542,565,234	3,404,819	2,180,032,129	2,183,436,948	0	0
43	MX	Other dairy products	53,443,643	5,589,062	30,336,951	4,642,312	24,302,671	28,944,982	26924000	0
43	MM		1,179,059,589	123,304,411	586,078,663	102,417,460	1,147,941,960	1,250,359,420	0	73601557
44	MX	Canning & preserving of fruits and vegetables	4,504,632,900	520,648,429	1,754,975,326	655,020,979	1,438,948,831	2,093,969,810	2700532000	0
44	MM		2,511,339,270	290,262,242	873,379,837	365,175,130	2,480,849,691	2,846,024,821	0	599058448
45	MX	Fish canning	3,199,492,312	146,438,075	1,203,979,434	26,257,755	1,229,644,084	1,255,901,839	1952971000	0
45	MM		1,545,228,121	70,723,793	507,702,779	12,681,456	1,542,338,282	1,555,011,738	0	18271099
46	MX	Fish drying, smoking & mfg of other seafood products	8,949,453,262	1,208,287,585	3,098,866,536	374,394,641	2,640,512,786	3,014,907,427	6041923000	0
46	MM		1,807,802,810	244,075,881	565,965,406	75,628,272	1,666,599,354	1,742,227,626	0	27328639
47	MX	Prod'n of crude coconut oil, copra cake and meal	14,279,687,837	1,137,502,876	3,491,648,638	3,491,894,978	850,448,602	4,342,343,580	10753235000	0
47	MM		1,385,785,567	110,390,023	314,811,189	338,874,191	334,199,677	673,073,868	0	0
48	MX	Other crude vegetable oil exc coconut oil, fish and other marine oils and fats	49,288,581	4,731,884	20,605,433	124,315,849	-	124,315,849	25141000	0
48	MM		518,074,812	49,737,078	210,157,831	1,306,690,290	-	1,306,690,290	0	870551969
49	MX	Manufacture of refined coconut and vegetable oil	761,282,032	67,654,718	237,186,501	261,185,409	213,515,194	474,700,603	417222000	0
49	MM		1,228,185,324	109,148,158	349,410,522	421,373,516	883,907,515	1,305,281,031	0	196150070
50	PM	Rice and corn milling	55,723,959,205	5,242,074,108	22,530,731,136	2,917,136,100	52,947,182,620	55,864,318,720	4874000	143839816
51	MX	Flour, cassava & other grains milling	722,055,274	56,984,235	596,756,787	572,820,685	68,396,294	641,216,979	372400000	0
51	MM		4,154,599,345	327,878,868	3,290,996,860	3,295,925,572	867,062,565	4,162,988,138	0	277994577
52	MX	Mfr of bakery prods exc noodles	741,878,786	88,947,035	309,280,085	11,927,101	358,266,547	370,193,647	374734000	0
52	MM		12,480,974,921	1,496,397,698	4,736,599,497	200,655,213	12,202,458,139	12,403,113,352	0	23873564
53	MX	Noodles mfg	58,548,250	8,882,080	24,024,746	1,986,416	28,044,767	30,031,182	29541000	0
53	MM		1,050,953,834	159,435,280	368,963,764	35,656,591	1,065,506,822	1,101,163,413	0	51120667
54	PM	Sugar milling and refining	9,554,217,957	791,379,877	3,417,735,282	3,022,660,811	5,363,918,756	8,386,579,567	1953117000	135855578

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
55	MX	Mfr of cocoa, chocolate and sugar confectionery	417,492,576	39,022,657	127,176,433	79,068,977	162,951,193	242,020,169	216776000	0
55	MM		1,677,022,376	156,749,778	447,128,970	317,611,499	1,528,747,676	1,846,359,176	0	206026126
56	PX	Mfr of desiccated coconut	2,514,154,000	391,025,000	1,062,198,863	751,605,000	117,088,000	868,693,000	1646000000	432932
57	NT	Mfr of ice exc dry ice	579,879,518	88,134,137	256,013,647	298,673,092	281,206,426	579,879,518	0	0
58	MX	Coffee roasting and processing	36,441,696	3,799,446	6,478,509	7,274,983	14,459,919	21,734,903	18312000	0
58	MM		1,201,968,203	125,318,369	134,528,421	239,953,120	958,724,054	1,198,677,174	0	70000
59	MX	Mfr of animal feeds	77,501,953	7,589,770	34,550,673	89,489,647	-	89,489,647	38841000	0
59	MM		6,672,269,023	653,415,592	2,858,662,341	7,704,309,056	-	7,704,309,056	0	900062901
60	MX	Mfr of starch & starch prods	831,731	101,867	450,271	404,427	246,355	650,781	416000	0
60	MM		512,646,542	62,786,743	261,976,021	249,272,654	362,883,346	612,156,000	0	99730458
61	MX	Mfr of flavoring extracts, mayonnaise and food coloring products	63,321,541	3,999,969	33,611,625	26,681,734	18,069,484	44,751,218	31879000	0
61	MM		1,727,381,832	109,117,276	848,972,188	727,865,144	1,000,602,073	1,728,467,216	0	13756525
62	MX	Miscellaneous food prods	80,893,888	8,010,643	29,946,396	7,879,059	36,416,926	44,295,985	40748000	0
62	MM		1,886,494,247	186,813,023	623,476,062	183,744,400	1,832,688,122	2,016,432,522	0	133854518
63	MX	Alcoholic liquors and wine	105,634,104	6,748,428	40,615,386	85,028,282	16,908,875	101,937,156	53397000	0
63	MM		1,568,367,264	100,195,048	500,882,600	1,262,429,169	626,627,417	1,889,056,586	0	167492000
64	MX	Malt and malt liquors	462,065,780	26,527,329	297,489,696	335,116	228,257,956	228,593,072	233637000	0
64	MM		6,728,420,084	386,280,535	4,008,003,232	4,879,821	6,725,174,868	6,730,054,690	0	1787759
65	MX	Softdrinks & carbonated water	25,633,492	2,359,749	10,415,566	3,257,212	11,180,173	14,437,385	12827000	0
65	MM		5,331,458,339	490,799,500	1,835,248,651	677,460,984	4,667,688,551	5,345,149,535	0	15213333
66	MX	Cigarette mfg	304,768,433	19,549,098	192,351,403	3,023	151,619,928	151,622,951	153147000	0
66	MM		10,046,129,044	644,399,935	5,898,354,811	99,648	10,170,989,381	10,171,089,030	0	124961333
67	MX	Cigar, chewing & smoking tobacco	185,696,212	13,975,631	117,554,936	-	72,638,212	72,638,212	113058000	0
67	MM		87,168,952	6,560,399	50,318,216	-	92,907,750	92,907,750	0	5738798
68	MX	Tobacco leaf flue-curing and redrying	402,320,634	76,671,206	214,356,980	645,027,991	2,702,108	647,730,099	209773000	0
68	MM		1,485,279,421	283,053,253	502,180,550	2,381,301,677	39,888,693	2,421,190,370	0	1357120726
69	MX	Textile, spinning, weaving, texturizing and finishing	3,380,723,957	330,707,381	1,974,426,468	3,887,174,223	93,831,783	3,981,006,006	1937122000	0
69	MM		3,180,437,518	311,115,067	1,746,048,955	3,656,883,819	422,981,804	4,079,865,623	0	3327137431
70	MX	Fabric knitting mills	6,657,673,740	584,915,527	3,898,896,483	6,852,546,970	967,788,136	7,820,335,106	4187254000	0
70	MM		2,466,204,918	216,670,508	1,334,063,915	2,538,391,891	4,935,593,094	7,473,984,985	0	10132613099
71	MX	Hosiery, underwear & outerwear knitting	3,130,677,102	413,032,216	2,068,375,052	38,229,590	470,815,820	509,045,410	2628204000	0
71	MM		79,182,563	10,446,606	48,749,778	966,921	90,946,845	91,913,766	0	17879476
72	MX	Mfr of made-up textile goods exc. wearing apparel	775,729,472	110,962,181	530,465,613	666,524,742	31,809,082	698,333,824	492719000	0
72	MM		257,843,264	36,882,511	163,797,451	221,544,909	78,299,845	299,844,754	0	438802947
73	MX	Mfr of carpets and rugs	19,715,603	2,878,454	8,543,964	1,855,592	8,654,236	10,509,828	10152000	0
73	MM		103,727,600	15,144,103	39,768,082	9,762,626	101,358,925	111,121,551	0	8281878

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
74	MX	Cordage, rope, twine and net mfg	254,879,901	41,367,122	62,755,769	200,743,415	10,557,293	211,300,708	136720000	0
74	MM		501,596,804	81,409,385	95,426,080	395,057,653	47,222,496	442,280,149	0	26929337
75	MX	Mfr of articles made of native materials	589,121,101	88,596,124	286,896,080	25,751,450	26,371,896	52,123,346	538994000	0
75	MM		3,438,889	517,164	1,335,420	150,319	1,809,201	1,959,521	0	0
76	MX	Mfr of artificial leather and impregnated & coated fabrics	1,724,907	214,151	665,148	21,088,581	-	21,088,581	870000	0
76	MM		34,998,231	4,345,118	12,694,845	427,885,779	-	427,885,779	0	125150073
77	MX	Mfr of fiber batting, padding, upholstery fillings incl. coir, linoleum and other hard surfaced floor coverings	1,849,367	155,383	1,020,117	1,470,472	255,395	1,725,867	928000	0
77	MM		111,922,366	9,403,654	59,418,112	88,991,875	34,429,063	123,420,938	0	12284475
78	MX	Custom tailoring & dressmaking shops	589,882,504	106,008,244	410,974,059	139,098,839	180,483,505	319,582,344	327859000	0
78	MM		695,230,997	124,940,504	422,950,552	163,940,825	478,879,663	642,820,489	0	0
79	MX	Mfr of ready-made clothing	18,254,719,832	1,788,872,954	13,459,769,422	13,636,584	4,632,294,383	4,645,930,967	13617213000	0
79	MM		1,596,672,112	156,466,031	1,087,191,375	1,192,741	7,765,771,745	7,766,964,486	0	6177838000
80	MX	Embroidery establishments	284,528,825	90,710,424	219,691,107	10,836,082	27,874,706	38,710,788	248660000	0
80	MM		4,030,783	1,285,051	3,001,652	153,510	8,214,863	8,368,372	0	6540000
81	MX	Mfr of other wearing apparel exc footwear	695,153,663	118,115,327	587,782,518	244,917	117,560,698	117,805,615	577464000	0
81	MM		20,129,538	3,420,261	16,410,977	7,092	94,432,574	94,439,666	0	74406628
82	MX	Tanneries and leather finishing	24,822,037	3,325,556	17,449,369	151,520,194	347,107	151,867,302	13208000	0
82	MM		66,002,543	8,842,755	43,690,586	402,896,750	16,704,324	419,601,074	0	492916124
83	MX	Mfr of prods of leather and leather substitutes, exc footwear and wearing apparel	167,303,465	28,306,481	116,660,748	35,054,234	57,936,546	92,990,781	91652000	0
83	MM		239,156,555	40,463,481	153,565,922	50,109,243	216,989,601	267,098,843	0	44180685
84	MX	Mfr of leather footwear & footwear parts	1,913,995,801	373,520,842	1,447,314,693	191,022,806	162,906,428	353,929,234	1689549000	0
84	MM		23,374,340	4,561,558	16,686,415	2,332,833	304,671,964	307,004,796	0	396392077
85	MX	Sawmills and planing mills	1,842,236,312	137,289,040	446,398,881	1,482,057,402	52,251,097	1,534,308,499	982793000	0
85	MM		4,291,509,743	319,816,328	882,873,620	3,452,469,012	264,915,049	3,717,384,061	0	65900549
86	MX	Mfr of veneer and plywood	3,249,380,815	207,574,056	920,046,227	1,825,028,612	132,248,926	1,957,277,538	1948039000	0
86	MM		1,794,153,849	114,612,541	430,870,903	1,007,694,172	183,332,629	1,191,026,801	0	9856391
87	PM	Mfr of hardboard and particle board	248,276,434	24,450,803	89,539,402	193,746,060	12,728,753	206,474,813	55251000	689849
88	MX	Wood drying and preserving plants	146,523,421	20,260,914	62,289,474	118,263,241	3,951,720	122,214,961	78115000	0
88	MM		387,697,467	53,609,895	149,807,716	312,921,705	22,395,954	335,317,659	0	0
89	MX	Millwork plants	787,711,775	111,329,723	339,964,999	279,009,204	27,602,566	306,611,770	553265000	0
89	MM		115,406,818	16,310,800	42,676,442	40,877,343	14,035,612	54,912,955	0	3806881

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
90	MX	Mfr of wooden and cane containers and small cane wares	1,045,370,070	82,909,985	431,842,489	140,940,097	41,630,162	182,570,259	880112000	0
90	MM		25,469,287	2,020,010	7,952,639	3,433,850	6,427,892	9,861,742	0	47333
91	MX	Mfr of wood carvings	904,099,011	119,874,811	444,779,958	49,721,639	36,785,558	86,507,198	821776000	0
91	MM		6,109,992	810,126	2,533,018	336,024	3,020,961	3,356,985	0	650667
92	MX	Mfr of misc wood, cork & cane prods.	555,306,599	85,428,896	224,511,158	252,547,441	17,269,147	269,816,588	370477000	0
92	MM		134,203,578	20,646,006	47,385,289	61,034,337	14,305,234	75,339,571	0	18903617
93	MX	Mfr and repair of wooden furniture incl upholstery	1,088,340,618	181,416,765	395,864,506	16,714,553	470,362,762	487,077,315	608120000	0
93	MM		1,204,857,953	200,839,175	371,983,701	18,504,007	1,185,452,604	1,203,956,611	0	5439351
94	MX	Mfr and repair of rattan furniture incl upholstery	3,511,264,553	468,502,716	1,615,292,242	85,233,022	1,020,294,940	1,105,527,961	2428036000	0
94	MM		581,686,298	77,613,523	238,411,161	14,119,950	547,934,707	562,054,657	0	46000
95	MX	Mfr and repair of other furnitures and fixtures	11,246,249	1,884,752	3,649,845	4,442,196	3,302,221	7,744,417	5682000	0
95	MM		181,854,703	30,476,923	51,914,049	71,831,434	107,925,517	179,756,951	0	0
96	MX	Pulp, paper and paperboard	664,658,061	39,553,191	334,321,616	1,059,749,355	8,365,262	1,068,114,617	343742000	0
96	MM		3,415,400,594	203,247,353	1,620,692,163	5,445,609,987	165,113,413	5,610,723,400	0	2918835761
97	MX	Paper and paperboard containers	24,161,396	1,842,881	15,113,130	25,428,427	248,253	25,676,680	12104000	0
97	MM		2,230,181,006	170,104,329	1,285,341,019	2,347,132,435	49,612,753	2,396,745,188	0	179464042
98	MX	Mfr of articles of paper and paperboard	679,391,418	54,300,967	354,113,428	706,971,164	9,493,301	716,464,464	368944000	0
98	MM		1,208,631,574	96,600,960	571,152,380	1,257,695,708	51,815,570	1,309,511,277	0	485827502
99	MX	Newspapers and periodicals	89,606,160	16,821,652	42,759,021	24,233,689	33,775,865	58,009,553	45672000	0
99	MM		1,009,722,582	189,553,953	467,141,896	273,076,126	954,103,759	1,227,179,885	0	231333636
100	MX	Printing and publishing of books and pamphlets	48,560,783	7,083,220	25,940,582	19,051,589	16,690,038	35,741,627	24478000	0
100	MM		1,332,257,169	194,326,975	693,825,349	522,677,242	1,205,977,047	1,728,654,289	0	407899687
101	MX	Commercial & job printing & other allied industries	434,528,395	58,630,227	212,413,802	366,408,448	23,060,104	389,468,553	223319000	0
101	MM		2,505,775,919	338,100,368	1,048,796,708	2,112,951,600	279,399,997	2,392,351,597	0	53271664
102	MX	Mfr of basic ind'l chemicals	2,966,514,376	278,380,107	1,942,599,748	8,135,771,673	-	8,135,771,673	1751720000	0
102	MM		2,392,807,664	224,543,006	1,518,498,806	6,562,360,516	-	6,562,360,516	0	10871354785
103	MX	Mfr of fertilizer	2,122,289,885	162,170,383	1,841,947,733	2,584,423,427	98,790,122	2,683,213,549	1260063000	0
103	MM		1,771,140,175	135,338,006	1,529,545,688	2,156,810,054	513,045,592	2,669,855,646	0	2706652690
104	MX	Mfr of synthetic resins, plastic materials & other man-made fibers exc glass	963,769,864	94,547,144	672,177,451	2,310,370,163	6,329,412	2,316,699,575	528750000	0
104	MM		1,630,402,609	159,944,729	1,089,131,862	3,908,436,735	85,077,262	3,993,513,997	0	4216949224
105	MX	Mfr of pesticides, insecticides, etc	13,230,864	928,171	7,776,113	20,062,602	175,113	20,237,715	6634000	0
105	MM		967,670,653	67,883,966	541,890,226	1,467,326,108	40,406,734	1,507,732,841	0	554536275

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	QbJ	LbJ	YbJ	IbJ	FbJ	TbJ	XbJ	MbJ
106	MX	Mfr. of paints, varnish & lacquers	34,327,031	1,999,155	22,681,073	33,681,769	2,393,535	36,075,304	17246000	0
106	MM		1,278,714,136	74,470,388	785,876,134	1,254,677,512	207,411,524	1,462,089,036	0	201440534
107	MX	Mfr of drugs and medicines	154,425,317	14,145,565	102,188,817	129,169,596	26,021,379	155,190,975	77539000	0
107	MM		8,127,496,252	744,489,511	5,242,891,478	6,798,272,622	3,517,228,097	10,315,500,719	0	2264985810
108	MX	Mfr of soap and detergents	441,013,708	41,683,379	115,936,192	66,872,576	182,572,270	249,444,846	225905000	0
108	MM		2,880,206,237	272,229,020	604,127,097	436,736,564	2,630,858,195	3,067,594,759	0	219500566
109	MX	Mfr of perfumes, cosmetics & other toilet preparations	263,178,503	22,950,602	124,327,825	73,432,492	93,110,353	166,550,845	134204000	0
109	MM		2,197,247,706	191,611,990	921,589,370	613,079,616	1,683,644,969	2,296,724,585	0	134701536
110	MX	Mfr of misc chemical products	1,823,601,138	188,659,995	1,142,568,048	2,166,379,508	129,907,799	2,296,287,308	1082012000	0
110	MM		1,277,113,618	132,123,327	763,489,075	1,517,169,909	642,744,490	2,159,914,399	0	2392045084
111	MX	Petroleum refineries	3,834,564,692	59,592,576	3,358,691,323	3,189,420,330	313,227,004	3,502,647,334	1958006000	0
111	MM		36,471,302,851	566,796,770	31,429,634,903	30,335,207,282	6,390,311,132	36,725,518,414	0	1813371628
112	MX	Mfr of asphalt, lubricants and misc prods of petroleum and coal	2,691,278,813	75,844,135	1,762,673,919	1,845,834,715	7,965,651	1,853,800,366	1751164000	0
112	MM		919,871,013	25,923,297	594,362,164	630,900,760	12,815,120	643,715,880	0	592583354
113	MX	Rubber tire & tube mfg	1,361,552,169	105,011,409	742,814,572	845,911,002	211,323,337	1,057,234,339	734841000	0
113	MM		2,794,126,024	215,500,454	1,436,297,003	1,735,946,664	1,094,500,510	2,830,447,174	0	451780000
114	MX	Mfr of rubber footwear	1,311,249,795	165,494,017	898,792,106	125,291	493,532,884	493,658,175	817647000	0
114	MM		515,717,943	65,089,226	328,397,239	49,277	707,365,412	707,414,689	0	191747671
115	MX	Mfr of other rubber products, n.e.c	85,847,027	9,256,702	48,156,347	234,256,749	-	234,256,749	44357000	0
115	MM		446,720,837	48,168,954	233,122,158	1,218,998,197	-	1,218,998,197	0	916360605
116	MX	Mfr of plastic furniture, plastic footwear & other fabricated plastic products	1,573,716,979	81,606,080	1,119,616,456	1,202,215,594	116,482,077	1,318,697,672	855067000	0
116	MM		2,744,605,093	142,323,216	1,820,679,184	2,096,696,603	515,709,852	2,612,406,454	0	437127950
117	MX	Manufacture of pottery, china & earthenware	386,931,389	47,393,886	288,665,605	20,460,693	148,410,200	168,870,893	226664000	0
117	MM		263,216,317	32,240,455	182,873,024	13,918,716	273,541,613	287,460,329	0	32179821
118	MX	Mfr of flat glass	99,668,236	12,785,341	53,839,044	97,806,605	1,143,618	98,950,223	51728000	0
118	MM		404,507,176	51,889,773	201,291,070	396,951,676	10,874,255	407,825,931	0	51339333
119	MX	Mfr of glass container	97,042,427	7,340,294	48,331,095	86,108,915	8,807,058	94,915,973	49059000	0
119	MM		1,534,454,782	116,066,236	692,051,436	1,361,571,842	316,084,940	1,677,656,782	0	187668402
120	MX	Mfr of other glass and glass products	3,472,426	431,708	1,961,182	7,120,344	241,836	7,362,181	1743000	0
120	MM		168,499,097	20,948,610	91,807,812	345,513,976	57,066,947	402,580,923	0	239599132
121	PM	Cement mfr	4,163,309,780	217,544,061	933,799,939	4,027,089,874	235,685,949	4,262,775,823	2293000	101104200
122	MX	Mfr of structural clay products	29,097,066	4,621,420	19,899,175	47,580,605	992,337	48,572,942	14786000	0
122	MM		366,064,069	58,141,117	241,283,913	598,601,584	47,117,635	645,719,218	0	313446312
123	MX	Mfr of structural concrete prods	315,975	43,897	88,806	304,687	5,739	310,426	158000	0

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Obj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
123	MM		704,427,466	97,863,428	183,180,470	679,262,423	25,613,107	704,875,529	0	599254
124	MX	Mfr of other non-metallic mineral prods	358,425,563	58,812,580	255,222,343	703,072,716	1,138,584	704,211,300	196202000	0
124	MM		605,653,464	99,379,192	404,772,469	1,188,024,712	12,157,883	1,200,182,595	0	1126581824
125	MX	Blast furnace and steel making furnace, steel works and rolling mills	2,633,578,222	116,333,631	1,705,865,682	4,566,140,321	32,742,699	4,598,883,019	1426585000	0
125	MM		5,793,525,570	255,918,681	3,673,281,399	10,044,907,909	373,205,112	10,418,113,021	0	7963924461
126	MX	Iron and steel foundries	2,706,649,606	109,634,456	1,461,211,819	2,684,905,527	53,665,227	2,738,570,754	1469396000	0
126	MM		5,682,830,394	230,186,433	2,974,419,437	5,637,176,937	322,311,171	5,959,488,108	0	1748064448
127	MX	Non-ferrous smelting & refining plants, rolling, drawing and extrusion mills	4,354,863,666	207,296,158	1,091,464,462	2,167,257,103	58,638	2,167,315,740	2864989000	0
127	MM		1,182,495,391	56,288,042	271,272,497	588,484,906	47,149	588,532,055	0	15464917
128	MX	Non-ferrous foundries	169,061,684	14,754,423	89,991,260	1,241,468,487	341,965	1,241,810,452	103178000	0
128	MM		100,482,896	8,769,386	51,623,246	737,874,757	9,957,729	747,832,487	0	1817996565
129	MX	Cutlery, handtools, gen. hardware	107,454,323	16,204,453	75,260,063	117,290,515	8,037,123	125,327,638	54192000	0
129	MM		2,334,693,927	352,079,246	1,583,957,829	2,548,407,962	465,268,515	3,013,676,476	0	748658514
130	MX	Structural metal prods	269,104,299	34,443,246	177,563,381	329,809,028	1,196,334	331,005,362	141734000	0
130	MM		879,815,972	112,609,565	559,925,852	1,078,285,453	12,093,281	1,090,378,734	0	407721756
131	MX	Mfr of metal containers	357,255,090	22,944,942	133,421,792	339,131,589	8,727,625	347,859,213	185740000	0
131	MM		1,568,679,860	100,749,489	536,950,251	1,489,100,949	88,864,906	1,577,965,855	0	177691315
132	MX	Metal stamping, coating, engraving mills	71,500,117	4,004,156	41,599,053	71,957,690	1,025,847	72,983,538	35912000	0
132	MM		3,027,119,006	169,524,989	1,683,965,073	3,046,491,407	91,487,059	3,137,978,466	0	146698661
133	MX	Mfr of Wire nails	2,000	125	732	2,175	29	2,204	1000	0
133	MM		269,013,059	16,803,933	90,904,777	292,597,008	8,683,965	301,280,973	0	32269069
134	MX	Mfr of other fabricated wire & cable prods exc insulated wire & cable	28,414,041	2,192,519	12,546,203	48,637,654	343,320	48,980,974	14440000	0
134	MM		331,306,214	25,564,654	133,830,840	567,112,486	15,143,676	582,256,161	0	285082321
135	MX	Mfr of non-electric lighting and heating fixtures	150,956,762	17,840,586	72,380,614	31,465,659	49,933,047	81,398,706	86660000	0
135	MM		130,960,892	15,477,406	56,207,913	27,297,690	150,676,351	177,974,040	0	63058941
136	MX	Mfr of fabricated metal prods exc mach'y & equipment	21,381,350	4,033,598	10,626,510	59,405,119	8,775,662	68,180,781	11335000	0
136	MM		60,751,106	11,460,714	27,732,831	168,788,528	1,566,197,033	1,734,985,561	0	1732226388
137	MX	Mfr of agricultural machinery and equipment	12,096,469	1,955,180	5,047,983	6,879,957	4,222,352	11,102,309	6154000	0
137	MM		136,242,676	22,021,217	53,212,356	77,489,040	202,671,667	280,160,707	0	148994116
138	MX	Mfr of metal and wood working mach'y	109,522,210	18,041,900	76,175,434	178,662,741	24,459,640	203,122,381	82122000	0
138	MM		11,098,220	1,828,241	7,370,917	18,104,441	1,608,036,445	1,626,140,886	0	1790258448

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
139	MX	Mfr of engines and turbines exc. for transport eq. & special ind. mach'y and equipment	220,011,288	36,213,767	132,892,975	145,928,558	80,452,565	226,381,123	136071000	0
139	MM		114,725,615	18,883,789	67,402,355	76,094,930	5,033,944,612	5,110,039,542	0	5137447067
140	MX	Mfr, assembly & repair of office, computing and acctg machines	492,994,840	59,045,943	351,708,423	429,798,144	121,881,850	551,679,994	329823000	0
140	MM		137,217,563	16,434,534	95,256,034	119,627,731	1,489,181,728	1,608,809,459	0	1856455184
141	MX	Mfr of pumps, compressors, blowers and airconditioners	4,537,375	777,531	2,747,176	1,658,434	2,119,198	3,777,632	2280000	0
141	MM		185,681,257	31,818,581	107,745,480	67,867,461	1,064,027,622	1,131,895,083	0	947723814
142	MX	Machine shops & mfr of non-electrical mach'y and eq. n.e.c.	624,240,374	97,892,913	399,538,844	633,202,105	136,958,011	770,160,116	397731000	0
142	MM		244,447,090	38,334,012	152,388,985	247,956,426	1,197,568,705	1,445,525,131	0	1736163865
143	MX	Mfr of electrical ind'l mach'y and apparatus	273,492,720	35,800,250	159,399,083	300,077,851	98,413,591	398,491,442	159012000	0
143	MM		233,896,436	30,617,089	128,926,666	256,632,571	3,301,359,394	3,557,991,965	0	3606447133
144	MX	Mfr of radio and TV receiving sets, sound recording & reproducing eq. incl records and tapes	1,517,728,435	129,639,529	823,659,766	5,026,948	640,582,611	645,609,559	875839000	0
144	MM		1,179,890,140	100,782,458	571,427,636	3,907,976	3,707,023,428	3,710,931,404	0	2534695818
145	MX	Mfr of communication and detection equipment	547,419,137	32,508,937	407,042,721	68,104,976	78,771,371	146,876,347	454997000	0
145	MM		19,394,523	1,151,760	13,635,405	2,412,892	314,771,691	317,184,583	0	349925854
146	MX	Mfr. of parts and supplies for radio, TV & communication (semi-conductors)	16,257,854,937	1,854,904,231	14,022,413,541	11,079,474,766	57,571,720	11,137,046,486	14800133000	0
146	MM		126,383,220	14,419,416	106,781,319	86,128,195	379,025,146	465,153,341	0	9470572938
147	MX	Mfr of appliances and housewares	532,600,658	39,054,345	246,422,460	11,267,031	248,560,123	259,827,154	279354000	0
147	MM		1,697,530,483	124,475,892	690,906,909	35,910,823	2,235,842,280	2,271,753,104	0	580468006
148	MX	Mfr of primary cells and batteries and electric accumulators	338,229,683	23,727,592	209,057,376	148,072,791	81,139,172	229,211,963	178722000	0
148	MM		973,163,367	68,269,654	561,561,977	426,038,940	515,086,167	941,125,108	0	39420312
149	MX	Insulated wires and cables	1,262,240,715	109,882,824	872,197,986	872,112,614	11,960,798	884,073,412	944745000	0
149	MM		125,065,733	10,887,445	81,910,189	86,410,937	24,228,502	110,639,439	0	518072403
150	MX	Mfr of current-carrying wiring devices, conduits & fittings	45,470,836	5,162,707	24,353,458	60,175,583	504,894	60,680,477	22872000	0
150	MM		1,469,733,268	166,871,856	735,174,252	1,945,028,165	45,291,699	1,990,319,864	0	557504149

Appendix Table 4
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
151	MX	Mfr of electrical lamps, fluorescent tubes and other electrical apparatus & supplies, n.e.c.	86,388,060	10,025,153	54,553,264	67,081,323	12,123,834	79,205,157	44993000	0
151	MM		354,689,054	41,160,918	211,893,142	275,420,131	129,003,976	404,424,107	0	85776167
152	MX	Shipyards and boatyards	7,962,636	1,055,290	4,448,552	1,975,248	3,256,615	5,231,863	3991000	0
152	MM		729,711,471	96,708,877	394,397,348	181,015,541	830,125,704	1,011,141,245	0	282676052
153	MX	Mfr and assembly of motor vehicles	1,054,246,230	70,499,796	862,915,533	23,058,458	483,253,008	506,311,465	560722000	0
153	MM		2,691,618,539	179,994,532	2,120,756,771	58,871,040	3,347,027,682	3,405,898,722	0	726547995
154	MX	Rebuilding & major alteration of motor vehicles	0	0	0	-	-	-	0	0
154	MM		205,336,382	38,396,649	113,563,640	199,225,664	6,130,044	205,355,708	0	19325
155	MX	Mfr of motor vehicles parts and accessories	373,143,169	42,810,357	258,715,039	5,385,765,000	1,101,985	5,386,866,984	242454000	0
155	MM		122,549,870	14,060,029	81,484,081	1,768,824,550	59,621,426	1,828,445,976	0	6948215935
156	MX	Mfr, assembly of motorcycles & bicycles	28,366,568	2,399,655	20,477,592	477,157	13,857,288	14,334,444	14375000	0
156	MM		370,284,721	31,324,047	253,313,331	6,228,592	677,168,199	683,396,791	0	313445388
157	MX	Mfr, assembly, rebuilding & major alteration of railroad equipment, aircraft, and animal and hand-drawn vehicle	34,552,859	4,195,817	27,234,256	524,026,546	9,386,978	533,413,524	18987000	0
157	MM		63,959,455	7,766,713	49,516,966	970,005,185	2,259,957,966	3,229,963,151	0	3683592350
158	MX	Mfr of professional, scientific measuring a & controlling eq	14,086,480	2,072,705	9,388,245	9,806,718	6,125,596	15,932,315	7174000	0
158	MM		159,876,763	23,524,502	103,223,090	111,302,918	936,406,856	1,047,709,774	0	896819375
159	MX	Mfr of photographic and optical instruments	28,694,000	3,888,000	22,429,703	35,623,178	(54,341,412)	(18,718,234)	87357000	0
159	MM		0	0	0	-	501,387,898	501,387,898	0	541261573
160	MX	Mfr of watches and clocks	20,870,341	5,136,038	15,779,894	3,199,025	10,003,040	13,202,066	10587000	0
160	MM		273,397,135	67,281,028	199,443,701	41,906,570	1,598,916,639	1,640,823,209	0	1370323585
161	MX	Mfr & repair of furniture & fixtures, made primarily of metal	24,153,515	4,392,941	9,850,500	-	11,492,515	11,492,515	12661000	0
161	MM		75,756,306	13,778,241	26,625,919	-	90,052,580	90,052,580	0	14296275
162	MX	Mfr of jewelry & related articles	484,473,128	113,368,194	235,124,507	21,728,313	103,086,656	124,814,969	370203000	0
162	MM		39,090,423	9,147,279	16,288,312	1,753,181	106,166,810	107,919,991	0	78594014
163	MX	Mfr of musical instruments	87,956,678	20,459,620	50,399,430	14,813,997	25,160,516	39,974,513	59044000	0
163	MM		21,934,641	5,102,221	11,630,450	3,694,315	96,838,845	100,533,161	0	89345683
164	MX	Mfr of sporting and athletic goods	149,316,293	21,509,729	80,314,977	926,406	68,818,255	69,744,661	80085000	0
164	MM		348,152,344	50,153,017	175,950,260	2,160,048	442,671,180	444,831,228	0	97175689

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Tbj	Fbj	Tbj	Xbj	Mbj
165	MX	Mfr of surgical, dental, medical and orthopedic supplies	18,283,971	3,425,458	8,535,554	11,867,944	6,932,328	18,800,272	9360000	0
165	MM		136,979,637	25,662,804	58,065,008	88,912,126	343,299,280	432,211,406	0	304948804
166	MX	Mfr of optalmic goods	0	0	0	-	-	-	0	0
166	MM		133,091,446	19,874,310	60,349,751	629,814,038	25,426,348	655,240,386	0	522148941
167	MX	Mfr of toys and dolls exc. rubber and plastic toys	837,398,323	111,889,294	532,056,658	18,536,331	288,269,227	306,805,558	537799000	0
167	MM		251,217,118	33,566,470	144,286,047	5,560,847	307,075,849	312,636,695	0	67928000
168	MX	Mfr of stationers', artists' and office supplies	48,454,030	5,330,192	26,479,211	61,020,101	1,096,399	62,116,499	25023000	0
168	MM		261,376,881	28,752,799	134,061,406	329,162,376	17,999,373	347,161,749	0	123285916
169	MX	Misc. mfg	3,816,719,918	589,937,584	2,323,034,688	503,830,137	903,505,877	1,407,336,013	2597677000	0
169	MM		751,642,368	116,178,837	420,609,172	99,221,343	774,342,437	873,563,780	0	293128549
170	NTD	Construction	67,273,563,052	13,064,428,112	34,747,347,777	8,482,728,514	58,740,135,743	67,222,864,257	438751000	301711647
171	NTD	Electricity	22,648,677,912	2,522,519,679	13,466,775,504	17,383,922,088	5,264,755,823	22,648,677,912	0	0
172	NTD	Gas	106,153,414	61,781,395,733	26,182,343	96,612,048	9,541,365	106,153,414	0	0
173	NTD	Water	1,992,558,233	347,250,602	1,441,657,383	1,326,480,321	666,077,912	1,992,558,233	0	0
174	NTD	Wholesale trade & retail trade	120,259,378,313	28,600,280,321	93,445,671,512	39,526,660,241	63,799,438,554	103,326,098,795	21081933000	0
175	NTD	Railway transport services	353,987,149	93,555,823	145,272,466	180,939,759	199,247,390	380,187,149	0	26200000
176	NTD	Busline operators	9,396,277,108	1,728,960,643	3,899,549,445	1,324,498,795	8,071,778,313	9,396,277,108	0	0
177	NTD	Public utility cars and taxicab operation	2,322,857,028	589,620,080	1,195,324,106	515,556,627	2,073,918,876	2,589,475,502	205812000	431929317
178	NTD	Jeepney and autocalesa operation, tricycle and other road transport eq.	9,221,325,000	203,513,789,377	4,382,349,766	843,800,803	8,377,524,498	9,221,325,301	0	0
179	NTD	Operation of tourist bus and cars and rent a-car services	574,884,337	72,509,237	258,380,162	257,886,747	136,301,205	394,187,952	387435000	130496386
180	NTD	Road freight transport & supporting services to land transport	10,653,078,715	2,676,130,120	5,414,918,226	5,670,063,454	3,078,225,703	8,748,289,157	2371463000	0
181	NTD	Ocean passenger and freight transport	1,996,155,823	261,747,791	794,542,106	2,319,617,671	690,032,932	3,009,650,602	232532000	1200267470
182	NTD	Interisland shipping including inland water	4,905,154,217	680,302,008	2,156,671,874	3,101,699,598	1,573,169,478	4,674,869,076	336874000	40296386
183	NTD	Stevedoring & other supporting services to water transport	2,599,951,004	770,419,277	1,671,943,770	2,555,251,406	40,562,249	2,595,813,655	128159000	98801606
184	NTD	Air transport	14,855,343,775	456,828,916	2,827,365,212	7,080,494,779	6,629,893,976	13,710,388,755	2577581000	925391165
185	NTD	Tour and travel agencies	685,368,675	152,626,506	334,194,104	135,432,932	10,265,060	145,697,992	671890000	0
186	NTD	Customs brokers and other services allied to transport	1,995,637,751	514,357,430	1,165,862,774	1,210,432,129	17,038,554	1,227,470,683	1018158000	49630522
187	NTD	Storage & warehousing	797,411,245	159,191,968	589,000,888	547,700,402	185,172,691	732,873,092	80350000	0
188	NTD	Telephone	6,434,069,880	651,291,566	4,537,532,631	3,248,627,309	1,504,729,317	4,753,356,627	2151196000	47155020
189	NTD	Telegraph service	1,803,692,000	66,718,056,092	1,197,684,383	943,437,751	223,724,498	1,167,162,249	1018266000	181354217

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IC	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
190	NTD	Postal, Messengerial and other comm services, n.e.c.	1,967,967,068	241,953,414	1,334,425,769	1,002,470,683	949,702,811	1,952,173,494	65927000	37159839
191	NTD	Banking institutions	18,441,664,257	3,936,253,815	14,178,257,045	5,049,462,651	6,407,279,518	11,456,742,169	14281487000	4486151807
192	NTD	Investment, financing cos. & other non-banking inst'n exc. pawnshops	4,689,547,791	960,084,337	3,184,923,670	3,574,833,735	1,114,714,056	4,689,547,791	0	0
193	NTD	Pawnshops	475,019,277	120,966,265	315,933,497	-	475,019,277	475,019,277	0	0
194	NTD	Life insurance	1,866,380,723	365,327,711	1,484,957,873	-	1,866,380,723	1,866,380,723	0	0
195	NTD	Non-life and other insurance activities	3,739,280,000	162,675,718,062	2,606,661,462	3,954,024,096	21,232,932	3,975,257,028	309659000	484699598
196	NTD	Real estate development	3,361,673,896	512,666,667	2,570,352,473	952,211,245	2,409,462,651	3,361,673,896	0	0
197	NTD	Letting, operating real estate, residential or non-residential, other real estate activities	7,547,267,470	1,257,751,807	4,894,488,940	5,492,673,092	1,611,889,157	7,104,562,249	629492000	62910843
198	NTD	Ownership of dwellings	32,417,930,924	0	29,391,216,064	-	32,417,930,924	32,417,930,924	0	0
199	NTD	Legal services	774,971,888	201,509,311	482,513,943	514,783,936	96,989,558	611,773,494	208115000	3962249
200	NTD	Bookkeeping, acctg., and auditing services	648,824,900	191,379,920	459,295,607	578,297,189	4,056,225	582,353,414	92523000	7844177
201	NTD	Engineering, architectural & technical services	790,496,386	136,737,527	423,349,594	1,184,357,430	-	1,184,357,430	162016000	523994378
202	NTD	Advertising services	1,450,708,434	307,714,859	699,023,893	1,455,287,550	-	1,455,287,550	25671000	25198394
203	NTD	Machinery and equipment renting and leasing	2,462,863,000	121,502,506,699	1,106,129,278	2,432,240,964	30,621,687	2,462,862,651	0	0
204	NTD	Employment/recruitment agencies	1,389,532,530	300,228,112	783,141,633	674,900,402	714,632,129	1,389,532,530	0	0
205	NTD	Business mgt & consultancy and market research services	1,317,389,558	275,819,277	848,379,307	1,244,776,707	-	1,244,776,707	678963000	472738956
206	NTD	Detective & protective services	2,113,853,815	583,429,719	1,490,682,261	1,983,497,992	46,202,410	2,029,700,402	112171000	5943775
207	NTD	Other business services	1,054,483,534	216,400,000	619,496,170	899,621,687	7,759,036	907,380,723	220000000	29604016
208	NTD	Sanitary and similar services	697,715,663	168,835,341	406,206,071	328,899,598	63,111,647	392,011,245	378018000	7924498
209	NTD	Private education services	7,543,538,956	2,371,310,040	5,228,943,521	574,922,088	6,921,215,261	7,496,137,349	59015000	0
210	NTD	Private hospitals, sanitarium & similar institutions	2,524,128,514	502,853,012	1,185,537,630	179,356,627	2,344,771,888	2,524,128,514	0	0
211	NTD	Private medical, dental, veterinary & other health clinics and laboratories	6,776,657,028	1,244,377,510	3,931,809,713	469,987,952	6,260,118,072	6,730,106,024	57956000	0

Appendix Table 2
Data for the Trade Model: 371 Traded and Nontraded Sectors
(Actual Values in Border Prices)

IO	Type	Sector	Qbj	Lbj	Ybj	Ibj	Fbj	Tbj	Xbj	Mbj
212	NTD	Other social and related community services	2,708,986,345	987,794,378	1,545,432,836	203,828,112	2,505,158,233	2,708,986,345	0	0
213	NTD	Motion picture production	487,347,000	134,363,473,568	244,561,490	487,346,988	-	487,346,988	0	0
214	NTD	Motion picture distribution and projection	1,571,604,819	257,833,735	820,145,052	49,303,614	1,608,263,454	1,657,567,068	11774000	95419277
215	NTD	Radio and TV programming	622,444,177	149,165,462	407,207,190	738,792,771	4,133,333	742,926,104	0	120481928
216	NTD	Theatrical production and entertainment	438,536,546	102,662,651	250,932,692	11,595,984	224,000,803	235,596,787	498147000	197178313
217	NTD	Other recreational and cultural services	4,723,873,896	988,339,759	3,879,652,899	85,159,036	1,953,838,554	2,038,997,590	4437710000	879549398
218	NTD	Repair shops for motor vehicles	7,271,097,992	1,826,060,241	4,763,390,783	6,522,343,775	748,754,217	7,271,097,992	0	0
219	NTD	Other repair shops, n.e.c.	3,349,672,289	918,011,245	2,127,551,710	386,379,920	2,963,292,369	3,349,672,289	0	0
220	NTD	Laundry, dry cleaning and dyeing plants	1,653,706,827	448,299,598	1,093,154,479	53,463,454	1,553,253,012	1,606,716,466	58503000	0
221	NTD	Barber and beauty shops	4,293,464,257	967,798,394	2,959,836,367	-	4,186,633,735	4,186,633,735	133004000	0
222	NTD	Photographic studios including commercial photography and related services	1,360,783,936	256,967,068	858,846,080	3,757,430	1,357,026,506	1,360,783,936	0	0
223	NTD	Other personal services, n.e.c.	1,687,887,550	526,085,944	1,169,352,039	236,093,976	1,309,589,558	1,545,683,534	177044000	0
224	NTD	Restaurants, cafes & other eating and drinking places	17,463,801,606	2,975,976,895	8,270,990,274	8,100,140,562	4,883,649,799	12,983,790,361	12473474000	5538843373
225	NTD	Hotels and motels	5,231,534,137	912,765,462	2,609,667,282	673,991,165	2,442,334,940	3,116,326,104	5109938000	1989159839
226	NTD	Other lodging places	251,351,004	142,317,269	191,210,591	-	251,351,004	251,351,004	0	0
227	NTD	Public education services	14,462,777,510	12,575,343,775	12,705,823,123	-	14,462,777,510	14,462,777,510	0	0
228	NTD	Public health services	5,553,518,876	2,769,094,779	2,893,645,112	-	5,553,518,876	5,553,518,876	0	0
229	NTD	Public administration and defense	38,036,366,265	23,217,549,398	24,597,691,133	7,848,193	38,028,518,072	38,036,366,265	0	0
230	NTD	Unclassified	14,068,417,671	1,633,480,350	6,015,586,287	9,547,836,145	14,339,176,707	23,887,012,851	15043875000	21902028916
		01 - 169	1,198,607,846,786	970,602,334,636	730,141,967,699	556,423,928,227	630,496,590,527	1,186,920,518,754	226,430,797,000	193,729,135,502
		Importable	412,153,007,161	52,193,338,261	228,133,357,950	250,400,859,458	254,082,749,282	504,483,608,740	2,055,530,000	153,102,076,064
		Exportable	223,747,614,552	35,270,298,142	141,510,402,894	114,965,973,990	34,942,644,458	149,908,618,448	136,401,401,000	144,253,012
		01 - 27	190,507,088,800	55,945,615,870	144,606,958,452	123,023,604,372	57,421,664,779	180,445,269,151	16,619,459,000	6,401,650,994
		Importable	91,837,357,826	26,553,975,647	72,914,128,594	65,282,940,412	29,219,018,635	94,501,959,048	39,671,000	6,206,483,926
		Exportable	48,880,415,311	15,891,012,914	40,721,831,151	23,391,977,213	12,622,582,689	36,014,559,903	16,530,804,000	16,387,952
		01 - 23	144,535,150,439	48,933,781,036	108,880,952,792	97,977,038,667	44,453,242,409	142,430,281,075	8,646,967,000	5,529,996,986
		Importable	57,861,304,794	21,404,654,005	45,772,782,731	43,900,714,346	17,673,340,710	61,574,055,056	39,671,000	5,334,829,918
		Exportable	36,884,529,982	14,028,499,721	32,137,171,354	19,727,637,573	11,199,838,245	30,927,475,818	8,558,312,000	16,387,952
		25 - 26	35,309,104,861	6,022,787,834	28,315,525,254	12,695,350,759	12,936,311,004	25,631,661,763	10,462,916,000	678,896,766
		Importable	18,639,503,160	3,303,656,763	15,630,125,749	7,239,484,399	10,241,691,482	17,481,175,881	0	678,896,766
		Exportable	16,669,601,701	2,719,131,071	12,685,399,505	5,455,866,360	2,694,619,521	8,150,485,882	10,462,916,000	0
		27	15,523,692,582	1,868,186,419	11,654,989,759	14,315,317,052	1,311,827,418	15,627,144,470	75,011,000	192,757,242
		Importable	15,336,549,872	1,845,664,878	11,511,220,114	14,142,741,667	1,303,986,443	15,446,728,111	0	192,757,242
		Exportable	187,142,710	22,521,540	143,769,645	172,575,385	7,840,974	180,416,359	75,011,000	0

