Reconciling Trade Statistics from China, Hong Kong and Their Major Trading Partners -- A Mathematical Programming Approach[1]

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ABSTRACT

JEL Classification Numbers

TABLE OF CONTENTS

LIST OF TABLES

I. Introduction

World Trade Analyzer

cif/fob

Hong Kong Monthly Digest of Statistics

cif/fob *ad hoc,*

fas *fob*

cif/fob

cif/fob

II. The Mathematical Programming Model

2.1 Reconciling international trade statistics via optimization

entrepot

2.2 General Assumptions and Mathematical Notation

entrepot

entrepot

DX_{it}^{sr} *i* *s* *r* *t*
s,

r

RX_{it}^{sr} *i* *s*
r *t*

TX_{it}^{sr} *i* *s* *r* *t* *s*

DM_{it}^{sr} *i* *r* *s* *t*
r *s*

TM_{it}^{sr} *i* *s* *r* *t*

RXM_{it}^{sr} *i*
s *r* *t*

WEX $^{s}_{it}$ i s t

WMX $^{r}_{it}$ i r

t

XER $^{r}_{it}$ i

r t

MER $^{r}_{it}$ i

$$TX_{it}^{CH\ r} = DX_{it}^{CH\ r} + \frac{RX_{it}^{CH\ r} - RXM_{it}^{CH\ r}}{cif_{it}^{CH\ HK}}$$

cif/fob

$$DX_{it}^{HK\ r} = TX_{it}^{HK\ r} - \sum_{s} RX_{it}^{sr} - RXM_{it}^{sr}$$

$$TM_{it}^{HK\ r} = DM_{it}^{HK\ r} + cif_{it}^{HK\ r} \sum_{s} RX_{it}^{sr} - RXM_{it}^{sr}$$

cif/fob

$$DM_{it}^{CH\ r} = TM_{it}^{CH\ r} - cif_{it}^{HK\ r}\ RX_{it}^{CH\ r} - RXM_{it}^{CH\ r}$$

cif/fob

2.4 Westbound flows: China and Hong Kong imports, partner exports

∈ ∈

$$DM_{it}^{s\ CH} + TM_{it}^{s\ HK} - MER_{it}^{s} = cif_{it}^{s\ CH} DX_{it}^{s\ CH} + cif_{it}^{s\ HK} TX_{it}^{s\ HK}$$

cif/fob

$$DM_{it}^{s\ HK} = TM_{it}^{s\ HK} - \sum_{r} RX_{it}^{sr} - RXM_{it}^{sr}$$

$$DM_{it}^{s\ CH} = TM_{it}^{s\ CH} - cif_{it}^{HK\ CH}\ \ RX_{it}^{s\ CH} - RXM_{it}^{s\ CH}$$

cif/fob

$$TX_{it}^{s\ CH} = DX_{it}^{s\ CH} + \frac{RX_{it}^{s\ CH} - RXM_{it}^{s\ CH}}{cif_{it}^{s\ HK}}$$

cif/fob

$$DX_{it}^{s\ HK} = TX_{it}^{s\ HK} - \frac{\sum_r RX_{it}^{sr} - RXM_{it}^{sr}}{cif_{it}^{s\ HK}}$$

cif/fob

2.5 China-Hong Kong bilateral trade

cif/fob

$$TX_{it}^{CH\ HK} = DX_{it}^{CH\ HK} - \frac{\sum_r RX_{it}^{CH\ r} - RXM_{it}^{CH\ r}}{cif_{it}^{CH\ HK}}$$

$$DM_{it}^{CH\ HK} = TM_{it}^{CH\ HK} - \sum_r RX_{it}^{CH\ r} - RXM_{it}^{CH\ r}$$

$$DX_{it}^{HK\ CH} = TX_{it}^{HK\ CH} - \sum_r RX_{it}^{s\ CH} - RXM_{it}^{s\ CH}$$

$$TM_{it}^{HK\ CH} = DM_{it}^{HK\ CH} + cif_{it}^{HK\ CH} \sum_r RX_{it}^{s\ CH} - RXM_{it}^{s\ CH}$$

cif/fob

2.6 Global balance and objective function

$\in$

$$\sum_r DX_{it}^{CH\ r} + \sum_s \sum_r RX_{it}^{sr} - RXM_{it}^{sr} + \sum_r DX_{it}^{HK\ r} = WEX_{it}^{HK} + WEX_{it}^{CH}$$

$$\sum_s TM_{it}^{s\ CH} + \sum_s \sum_r RX_{it}^{sr} - RXM_{it}^{sr} + \sum_s DM_{it}^{s\ HK} = WMX_{it}^{HK} + WMX_{it}^{CH}$$

cif/fob

$$\sum_s cif_{it}^{r} WEX_{it}^{s} = \sum_r WMX_{it}^{r}$$

$$Min \qquad S = \frac{1}{2}\left\{\begin{array}{l} \sum_t \sum_{i\in M} \sum_{s\in W} \sum_{r\in W} \frac{(DX_{it}^{sr} - DX_{it}^{sr})^2}{wdx_{it}^{sr}} + \sum_t \sum_{i\in ms\in W} \sum_{r\in W} \frac{(DM_{it}^{sr} - DM_{it}^{sr})^2}{wdm_{it}^{sr}} \\ + \sum_t \sum_{i\in M} \sum_{s\in W} \sum_{r\in W} \frac{(TX_{it}^{sr} - TX_{it}^{sr})^2}{wtx_{it}^{sr}} + \sum_t \sum_{i\in ms\in W} \sum_{r\in W} \frac{(TM_{it}^{sr} - TM_{it}^{sr})^2}{wtm_{it}^{sr}} \\ + \sum_t \sum_{i\in ms\in W} \sum_{r\in W} \frac{(RXM_{it}^{sr} - RXM_{it}^{sr})^2}{wrxm_{it}^{sr}} + \sum_t \sum_{i\in M} xer_{it} + mer_{it} \end{array}\right\}$$

2.7 Properties of the reconciliation model

W **$\overline{\mathbf{D}}$ R**

$\overline{\mathbf{D}}$ D **R•D 0**

D I WR RWR R $\overline{\mathbf{D}}$

D I WR AWA R W W WR RWR R W

WR RWR R W

R•D 0 *This is the fundamental reason why such a reconciliation framework will provide improved trade statistics.*

$wdx_{it}^{sr}\ wtx_{it}^{sr}\ wdm_{it}^{sr}\ wtm_{it}^{sr}\ wrxm_{it}^{sr}\ )$

Econometric Methods, second edition

III. Linking the Model with Trade Statistics

cif/fob

3.1 Obtaining initial estimates for all bilateral trade variables in the model from observed or derived trade statistics

$DX_{it}^{CH\,r}$ $TX_{it}^{HK\,r}$

$TM_{it}^{CH\,r}$

$DM_{it}^{HK\,r}$

$TX_{it}^{s\,HK}$ $DX_{it}^{s\,CH}$

$TM_{it}^{s\,CH}$ $TM_{it}^{s\,HK}$

RX_{it}^{sr}

RXM_{it}^{sr} RXM_{it}^{sr}

cif/fob

$TX_{it}^{Ch\,r}$ $DX_{it}^{HK\,r}$

$DM_{it}^{CH\,r}$

$TM_{it}^{HK\,r}$

$DM_{it}^{s\ HK}$

$DM_{it}^{s\ CH}$

$TX_{it}^{s\ CH}$ $DX_{it}^{s\ HK}$

$DX_{it}^{CH\ HK}$ $TX_{it}^{HK\ CH}$

$TM_{it}^{CH\ HK}$ $DM_{it}^{HK\ CH}$ $TX_{it}^{CH\ HK}$

RXM_{it}^{sr} *cif/fob*

cif_{it}^{sr}

3.2 Calculate initial Hong Kong re-export markup rates

et al

et al

et al

Method A

Method B

Method C

PM_i VM_i VM_i QM_i

PX_i VX_i QX_i

VX_i QX_i

$RXMR$ $RXMR_i$

$$RXMR = \frac{\sum_i \left(PX_i QX_i - PM_i QX_i\right)}{\sum_j PX_j QX_j} = \sum_i \left(-\frac{PM_i}{PX_i} \right) \left(\frac{PX_i QX_i}{\sum_j PX_j QX_j} \right)$$

$$= \sum_i RXMR_i \left(\frac{PX_i QX_i}{\sum_j PX_j QX_j} \right) = \sum_i RXMR_i \frac{RX_i}{\sum_j RX_j}$$

$$Var\ \ RXMR_i\ \ = \frac{\sum_k RX_k\ \ RXMR_k - \overline{RXMR}_i}{\sum_j RX_j} \qquad STD\ \ RXMR_i\ \ = \sqrt{Var\ \ RXMR_i}$$

j k i

3.3 Bilateral trade cost and estimates of cif/fob margins

cif/fob

cif/fob

Table 2. Bilateral transport margins on selected U.S. import flows for other manufacturers

	High unit value (HV)	*Lower unit value (LV)*	*Traded content*	*Aggregate*
HS category	7101-7118	9501-9508	Ratio	Other manufacturers
	cif/fob	cif/fob	LV / HV	cif/fob
Canada	1.006	1.056	1.27	1.034
Mexico	1.003	1.063	1.67	1.051
Costa Rica	1.002	1.000	0.67	1.043
Brazil	1.014	1.176	0.17	1.038
United Kingdom	1.004	1.044	0.50	1.014
Germany	1.008	1.045	1.43	1.034
India	1.004	1.093	0.01	1.005
China	**1.039**	**1.088**	**9.63**	**1.086**
Hong Kong	1.008	1.101	0.33	1.036
South Korea	1.027	1.037	1.37	1.049
Taiwan	1.052	1.073	17.37	1.093
Japan	1.005	1.020	5.58	1.039
Australia	1.002	1.029	0.63	1.022
South Africa	1.000	1.078	0.01	1.005
World	**1.006**	**1.079**	**0.89**	

Source:
Note:

cif/fob

Table 3. Transport margins on selected U.S. import flows for electronic equipment sector

HS	*8471*	*8518*	*8517*	*Aggregate*
	Computer/parts	Microphones/parts	Telephone/parts	Electronic equip.
Canada	**1.006**	**1.004**	**1.005**	**1.004**
Mexico	**1.002**	**1.003**	**1.002**	**1.003**
Costa Rica	0.996	1.020	1.017	1.012
Brazil	1.026	1.077	1.022	1.019
United Kingdom	1.017	1.022	1.016	1.022
Germany	1.020	1.026	1.011	1.020
India	1.039	1.093	1.057	1.026
China	**1.024**	**1.067**	**1.022**	**1.023**
Hong Kong	**1.029**	**1.078**	**1.018**	**1.022**
South Korea	1.025	1.043	1.028	1.016
Taiwan	1.022	1.053	1.028	1.019
Japan	1.018	1.034	1.018	1.022
Australia	1.018	1.018	1.015	1.020
South Africa	1.023	1.029	1.015	1.031
World	1.019	1.047	1.013	

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cif/fob

cif/fob

Table 4. Bilateral aggregate transport margins for China's exports to its major trading partners

	Footwear	*Chemicals, Rubber, plastics*	*Electronic equipment*	*Machinery & equip.*
Canada	1.076	1.085	1.024	1.065
Mexico	1.109	1.084	1.025	1.048
United States	**1.072**	**1.093**	**1.023**	**1.066**
Costa Rica	1.080	1.080	1.028	1.067
Brazil	1.091	1.062	1.028	1.041
United Kingdom	1.091	1.095	1.026	1.066
Germany	1.094	1.082	1.022	1.054
India	1.080	1.054	1.020	1.046
Hong Kong	**1.020**	**1.019**	**1.007**	**1.016**
Taiwan	1.074	1.080	1.021	1.040
Japan	1.084	1.089	1.023	1.048
Korea	1.072	1.092	1.024	1.039
Australia	1.079	1.091	1.024	1.064
South Africa	1.075	1.084	1.029	1.059

Source:

3.4 Determine appropriate country and commodity aggregation level based on the issue at hand and data availability

cif/fob

Table 5. Initial Estimates of Bilateral Trade Between China, Hong Kong and their Partner Countries, Eastbound Flows, 2004, in Millions of U.S. Dollars

Country Name	China actual exports to partners	China direct exports to Partners	Hong Kong total exports to partner	Hong Kong domestic export to partner	China re-exports to partner via Hong kong	Hong Kong re-export markup	Partners total imports from Hong Kong	Partners actual imports from China	Partner imports of Hong Kong domestic products	Partner direct import from China	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	China reported balance of trade with partners	Partner reported balance of trade with China	Partners balance of trade with Hong Kong after adjustment	Hong Kong reported balance of trade with partners	Partner reported balance of trade with Hong Kong	cif/fob ratio, China to partner	cif/fob ratio, Hong Kong to partner
Variable in the model	TX0(CH,r)	DX0(CH,r)	TX0(HK,r)	DX0(HK,r)	RX0(s,CH)	RXM0(CH,r)	TM0(HK,r)	TM0(CH,r)	DM0(HK,r)	DM0(CH,r)	(RX0(CH,r)-RXM0(CH,r))/TX0(CH,r)	SDX(r)	RXM0(CH,r)/RX0(CH,r)	TX0(CH,r)-TX0(r,CH)	TX0(CH,r)-TM0(r,CH)	TX0(r,CH)-TM0(CH,r)	TX0(HK,r)-TX0(r,HK)	TX0(HK,r)-TM0(r,HK)	TX0(r,HK)-TM0(HK,r)	cif(CH,r)	cif(HK,r)
United States	148,395	125,118	43,924	17,680	35,587	11,743	37,044	208,153	9,141	182,798	15.7	18.0	33.0	109,345	80,396	-174,095	8,745	29,467	-21,535	1.056	1.064
Canada	10,060	8,161	3,132	1,100	2,761	819	2,689	18,526	552	16,484	18.9	35.8	29.7	4,514	816	-13,460	568	1,927	-1,622	1.072	1.052
Mexico	5,658	4,973	938	219	808	110	1,158	14,003	406	13,273	12.1	56.4	13.6	4,923	2,831	-13,529	15	542	-625	1.060	1.048
Australia	10,499	8,838	3,190	1,098	2,493	798	3,126	13,064	933	11,283	15.8	10.6	32.0	3,676	-2,702	-6,755	-177	1,334	-1,109	1.068	1.049
New Zealand	1,315	1,077	413	138	355	113	393	2,180	104	1,925	18.1	30.1	31.8	113	-336	-1,080	-121	84	-20	1.074	1.053
Japan	81,678	73,222	13,799	4,141	11,977	3,348	11,373	93,589	1,322	84,605	10.4	3.5	28.0	-6,444	-21,036	-22,981	-7,923	-19,126	21,608	1.065	1.041
Korea Rep	29,199	27,810	5,653	2,287	2,832	1,423	6,719	29,585	3,268	28,135	4.8	-2.2	50.3	-26,694	-34,350	20,173	-8,694	-7,244	11,408	1.068	1.025
Taiwan China	15,351	13,489	6,298	2,215	2,487	598	6,270	16,625	2,072	14,679	12.1	1.0	24.1	-31,093	-51,289	17,373	-13,793	-13,724	23,458	1.053	1.029
Singapore	14,969	12,684	5,588	1,908	3,456	1,140	7,411	16,139	3,627	13,752	15.3	9.8	33.0	-2,309	-1,281	-1,016	-12,577	-8,655	9,788	1.040	1.027
Macao	1,778	1,604	1,242	344	256	78	1,325	1,531	368	1,341	9.8	-14.5	30.5	1,376	1,387	-1,140	199	944	-1,015	1.074	1.067
Indonesia	6,912	6,256	1,104	281	851	184	1,134	3,770	266	3,065	9.5	-80.5	21.6	1,780	-942	668	-302	-665	260	1.070	1.059
Malaysia	9,036	8,087	2,288	1,028	1,625	662	4,072	10,100	2,766	9,103	10.5	16.6	40.8	-2,630	-10,072	-1,704	-2,357	-4,377	3,399	1.055	1.033
Philippines	5,296	4,268	2,514	1,055	1,679	633	3,347	2,841	1,823	1,748	19.4	-35.1	37.7	1,077	-4,807	-188	2	-1,821	-128	1.061	1.042
Thailand	6,808	5,786	2,639	1,085	1,838	801	2,943	8,184	1,327	7,102	15.0	10.9	43.6	-2,216	-5,757	-1,158	-1,134	-2,210	1,771	1.060	1.040
Vietnam	4,833	4,259	1,218	328	746	160	2,160	2,922	1,217	2,300	11.9	-30.6	21.5	3,418	1,777	-1,602	-15	770	-1,664	1.084	1.058
Cambodia	768	452	451	110	393	71	781	414	410	64	41.1	-11.7	18.1	754	422	-402	-505	443	-164	1.085	1.086
Bangladesh	2,195	1,895	506	173	418	111	777	1,587	419	1,258	13.7	-24.3	26.5	2,127	1,825	-1,556	119	419	-683	1.073	1.074
India	6,610	5,925	2,096	389	813	118	3,418	6,687	1,683	5,973	10.4	9.9	14.6	797	-1,776	-1,403	-1,636	-1,686	231	1.060	1.019
Sri Lanka	905	694	428	179	355	140	890	475	620	242	23.3	-6.4	39.5	878	668	-458	132	363	-822	1.084	1.081
Pakistan	2,293	2,230	126	37	84	20	188	1,486	95	1,420	2.8	-58.1	23.8	1,610	1,635	-1,186	-155	-476	402	1.068	1.052
Austria	1,122	781	583	206	513	167	589	2,609	199	2,250	30.4	46.8	32.5	-142	-731	-1,454	-126	71	-120	1.051	1.039
Belgium	6,577	5,860	1,610	504	1,047	315	1,933	8,286	798	7,528	10.9	15.8	30.1	3,549	2,327	-5,548	-779	-187	-10	1.070	1.026
Germany	28,633	23,753	8,071	2,753	6,905	1,942	7,959	40,261	2,420	35,091	17.0	21.0	28.1	1,177	-6,624	-15,415	569	2,940	-2,706	1.052	1.045
Denmark	2,304	1,946	807	392	578	214	788	2,677	354	2,296	15.5	4.6	37.0	920	392	-1,890	158	39	50	1.073	1.044
Spain	6,669	5,477	1,880	561	1,637	421	1,740	10,609	358	9,335	17.9	27.7	25.7	5,155	3,715	-9,256	243	1,411	-1,230	1.075	1.049
Finland	2,971	2,495	907	392	818	336	679	2,444	146	1,947	16.0	-30.3	41.1	315	-602	-14	209	460	-175	1.040	1.033
France	12,080	9,922	3,409	1,062	2,981	782	3,199	20,367	743	18,066	17.9	32.5	26.2	5,227	2,252	-14,025	-689	1,016	-596	1.056	1.048
United Kingdom	19,438	14,952	8,450	3,503	6,849	2,271	8,550	26,206	3,371	21,406	23.1	15.6	33.2	14,500	10,141	-22,087	578	4,385	-3,635	1.068	1.049
Greece	1,557	1,381	262	72	228	47	283	1,765	84	1,575	11.3	4.7	20.8	1,479	1,293	-1,692	20	215	-221	1.080	1.050
Ireland	2,343	2,138	419	190	328	119	845	3,518	605	3,299	8.8	35.5	36.2	1,316	946	-2,748	-501	-596	186	1.038	1.043
Italy	11,042	9,224	3,001	993	2,654	798	2,783	14,696	695	12,764	16.5	15.4	30.1	4,297	2,731	-9,246	-1,151	-336	874	1.071	1.042
Luxembourg	945	918	73	13	35	8	120	76	58	47	2.9	-458.3	21.4	818	788	40	2	45	-95	1.036	1.028
Netherlands	20,893	18,519	4,253	1,652	3,555	1,149	4,687	17,826	1,981	15,322	11.4	-17.9	32.3	17,874	15,534	-15,077	916	2,702	-3,628	1.048	1.041
Portugal	685	588	150	46	135	36	146	570	37	466	14.2	-27.0	26.5	552	307	-453	-3	83	-70	1.075	1.052
Sweden	2,303	1,860	767	304	652	201	1,433	2,396	944	1,920	19.2	15.4	30.9	-426	-1,481	105	-14	260	-852	1.070	1.057
Switzerland	1,851	1,506	1,199	663	812	459	1,214	2,274	661	1,909	18.7	8.7	56.6	-1,079	-1,663	200	-1,477	-2,298	2,063	1.060	1.031
Norway	1,214	1,029	338	145	319	130	433	2,406	229	2,206	15.3	44.1	40.8	393	-371	-1,630	-111	158	-125	1.072	1.059
Cyprus	207	185	31	7	27	5	62	233	36	209	10.5	14.0	17.7	203	183	-230	1	24	-55	1.077	1.053
Czech Republic	1,512	1,351	274	103	252	88	340	3,512	162	3,341	10.7	53.9	34.9	1,193	909	-3,241	-4	128	-158	1.046	1.041
Estonia	246	202	73	26	64	20	83	379	34	333	17.8	29.0	31.2	209	181	-344	20	67	-75	1.051	1.041
Hungary	3,156	2,652	775	253	747	237	1,199	2,871	660	2,345	16.0	0.0	31.7	2,698	2,174	-2,484	246	625	-1,055	1.036	1.031
Lithuania	290	274	26	7	22	5	27	294	8	277	5.5	-4.6	24.6	278	260	-283	3	23	-24	1.065	1.050
Latvia	196	179	28	9	26	8	28	92	9	73	8.8	-109.8	31.5	185	159	-80	7	28	-26	1.081	1.052
Malta	288	273	21	5	20	5	32	77	15	61	5.2	-208.9	23.0	225	21	-58	-25	-61	48	1.045	1.061
Poland	2,033	1,844	290	88	264	72	264	4,065	53	3,863	9.3	45.4	27.2	1,463	1,353	-3,509	62	250	-222	1.068	1.045
Slovak Republic	195	160	44	8	43	7	81	797	43	760	18.1	75.2	16.8	115	31	-719	-9	32	-61	1.059	1.046
Slovenia	235	207	39	10	36	8	40	186	9	157	11.8	-31.0	22.0	195	165	-152	-2	25	-23	1.070	1.055
Albania	64	63	1	0	1	0	1	101	1	100	0.9	34.8	38.1	63	57	-100	0	1	-1	1.065	1.042
Bulgaria	370	338	45	8	38	6	60	464	22	431	8.6	16.9	14.9	330	270	-427	5	37	-53	1.066	1.036
Croatia	365	345	35	12	30	9	53	636	28	614	5.6	40.3	30.1	357	323	-628	9	33	-50	1.069	1.052
Romania	1,087	1,057	43	10	37	7	57	1,060	23	1,028	2.8	-9.1	18.1	884	730	-865	-9	19	-20	1.074	1.038
Yugoslavia	172	163	13	3	12	3	14	541	4	532	5.0	68.8	26.5	170	150	-540	3	10	-11	1.075	1.048

Country Name	China actual exports to partners	China direct exports to Partners	Hong Kong total exports to partner	Hong Kong domestic export to partner	China re-exports to partner via Hong kong	Hong Kong re-export markup	Partners total imports from Hong Kong	Partners actual imports from China	Partner imports of Hong Kong domestic products	Partner direct import from China	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	China reported balance of trade with partners	Partner reported balance of trade with China	Partners balance of trade with Hong Kong after adjustment	Hong Kong reported balance of trade with partners	Partner reported balance of trade with Hong Kong	cif/fob ratio, China to partner	cif/fob ratio, Hong Kong to partner
Ukraine	1,488	1,444	62	13	57	12	56	731	6	685	3.0	-119.1	20.8	812	403	-69	-89	42	61	1.073	1.049
Russian Federation	9,371	9,103	427	113	361	88	337	4,734	10	4,450	2.9	-117.5	24.3	828	-3,009	3,635	14	-125	8	1.078	1.041
Kazakhstan	2,217	2,212	10	5	10	5	7	758	2	753	0.2	-232.3	51.3	449	-74	1,006	5	7	-4	1.078	1.082
Kyrgyz Republic	492	492	1	0	1	0	0	80	0	80	0.1	-608.5	16.3	451	381	-41	0	-1	1	1.075	1.077
Argentina	982	852	174	32	151	19	176	1,401	28	1,263	13.2	23.8	12.9	-1,774	-2,407	1,229	-2	-50	-11	1.057	1.045
Brazil	4,338	3,675	833	129	778	105	1,103	4,049	369	3,348	15.3	-6.7	13.5	-1,420	-5,030	1,388	-263	-61	-329	1.061	1.041
Chile	1,956	1,689	313	35	303	30	293	1,847	0	1,558	13.7	-13.8	9.8	-1,354	-1,989	1,363	-6	121	-155	1.067	1.057
Colombia	702	629	91	15	86	13	103	1,234	23	1,156	10.3	39.0	14.6	559	453	-1,096	6	71	-83	1.068	1.054
Ecuador	370	344	36	8	34																

Table 6. Initial Estimates of Bilateral Trade Between China, Hong Kong and their Partner Countries, Westbound Flows, 2004, in Millions of U.S. Dollars

Country Name	Partner actual exports to China	Partner direct exports to China	Partner total exports to Hong Kong	Partner exports remain in Hong Kong	Partner re-exports to China via Hong kong	Hong Kong re-export markup	Hong Kong total imports from partners	China actual imports from partners	Hong Kong retained imports from partner	China direct import from partner	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	Partners balance of trade with Hong Kong after adjustment	cif/fob ratio, partner to China	cif/fob ratio, partner to Hong Kong
Variable in the model	TX0(s,CH)	DX0(s,CH)	TX0(s,Hk)	DX0(s,Hk)	RX0(s,CH)	RXM0(s,CH)	TM0(s,HK)	TM0(s,CH)	DM0(s,HK)	DM0(s,CH)	(RX0(r,CH)-RXM0(r,CH))/TX0(r,CH)	SDX(s)	RXM0(CH,r)/RX0(CH,r)	TX0(CH,r)-TX0(r,CH)	TX0(HK,r)-TX0(r,HK)	cif(s,CH)	cif(s,HK)
United States	39,049	34,058	15,509	8,935	5,795	674	14,457	44,722	7,716	39,510	12.9	5.4	11.6	-109,345	-8,745	1.027	1.023
Canada	5,546	5,066	1,067	531	585	78	1,205	7,346	640	6,829	9.0	17.3	13.3	-4,514	-568	1.089	1.054
Mexico	734	474	533	203	309	39	396	2,142	52	1,869	36.4	49.8	12.7	-4,923	-15	1.046	1.059
Australia	6,823	6,309	2,017	1,276	581	31	1,856	11,540	1,061	10,979	7.9	30.4	5.3	-3,676	177	1.090	1.082
New Zealand	1,202	1,100	373	259	131	19	329	1,413	203	1,298	9.0	2.6	14.6	-113	121	1.069	1.089
Japan	88,122	70,608	32,981	12,064	20,625	2,459	32,925	94,258	11,235	75,851	20.4	0.3	11.9	6,444	7,923	1.045	1.040
Korea Rep	55,894	49,757	18,127	10,981	6,730	345	12,897	62,160	5,478	55,676	11.3	-4.3	5.1	26,694	8,694	1.059	1.033
Taiwan China	46,444	33,997	29,728	16,007	14,773	1,828	20,022	64,778	5,741	51,642	27.5	5.7	12.4	31,093	13,793	1.053	1.043
Singapore	17,277	15,122	17,199	14,485	2,471	233	14,243	13,965	11,428	11,693	12.8	-27.8	9.4	2,309	12,577	1.039	1.033
Macao	402	391	310	145	12	1	299	216	122	205	2.7	-48.8	10.2	-1,376	-199	1.062	1.050
Indonesia	5,132	4,438	1,394	582	826	77	1,769	7,198	890	6,433	14.3	21.0	9.3	-1,780	302	1.113	1.083
Malaysia	11,667	8,395	7,471	3,385	4,169	797	6,666	18,159	2,463	14,754	28.6	20.0	19.1	2,630	2,357	1.050	1.033
Philippines	4,219	2,653	3,219	1,053	1,879	284	4,335	9,075	2,126	7,469	37.5	44.0	15.1	-1,077	-2	1.019	1.023
Thailand	9,024	7,025	4,715	2,218	2,447	299	4,849	11,543	2,186	9,353	23.4	9.5	12.2	2,216	1,134	1.086	1.066
Vietnam	1,414	1,320	496	343	111	11	448	2,482	284	2,380	6.9	28.5	10.1	-3,418	15	1.117	1.112
Cambodia	14	13	616	615	1	0	8	30	6	29	8.2	-1784.6	10.4	-754	505	1.094	1.010
Bangladesh	68	31	94	53	45	7	88	70	45	31	54.3	-11.7	15.4	-2,127	-119	1.094	1.046
India	5,813	5,285	3,649	2,025	621	66	3,782	7,701	2,116	7,128	9.2	12.0	10.7	-797	1,636	1.113	1.015
Sri Lanka	27	17	68	46	12	1	65	27	41	16	38.0	-12.5	9.9	-878	-132	1.133	1.053
Pakistan	684	300	590	192	428	15	602	595	173	171	59.1	-17.0	3.4	-1,610	155	1.081	1.077
Austria	1,264	1,155	469	332	134	20	511	1,511	367	1,395	8.9	10.7	15.1	142	126	1.037	1.068
Belgium	3,028	2,739	1,922	1,283	387	84	1,796	3,533	1,122	3,223	9.8	2.2	21.8	-3,549	779	1.053	1.051
Germany	27,456	24,847	5,253	2,184	2,923	228	5,131	30,378	1,962	27,643	9.7	4.9	7.8	-1,177	-569	1.033	1.034
Denmark	1,383	787	837	233	677	59	767	1,554	127	925	43.9	0.2	8.8	-920	-158	1.040	1.041
Spain	1,513	1,353	510	318	180	12	469	1,762	267	1,590	10.9	5.1	6.7	-5,155	-243	1.044	1.052
Finland	2,655	2,430	504	183	253	19	448	3,097	113	2,858	8.6	7.9	7.5	-315	-209	1.034	1.042
France	6,852	6,342	2,603	1,752	592	61	2,393	7,670	1,504	7,128	7.6	2.7	10.2	-5,227	689	1.033	1.040
United Kingdom	4,938	4,119	4,916	2,925	970	118	4,065	4,812	1,994	3,943	17.0	-15.6	12.1	-14,500	-578	1.036	1.033
Greece	78	73	61	52	11	5	47	87	37	81	7.1	-10.0	48.9	-1,479	-20	1.057	1.043
Ireland	1,027	770	1,031	691	484	222	1,015	1,192	662	928	25.3	4.6	45.8	-1,316	501	1.025	1.021
Italy	6,745	5,450	3,657	2,144	1,537	173	3,337	6,493	1,745	5,098	19.8	-11.4	11.3	-4,297	1,151	1.042	1.051
Luxembourg	127	115	25	11	13	1	28	129	13	117	9.3	-1.2	9.1	-818	-2	1.044	1.033
Netherlands	3,019	2,749	1,059	736	301	21	1,550	2,985	1,214	2,699	9.1	6.8	7.0	-17,874	-916	1.038	1.038
Portugal	133	117	75	49	21	4	66	281	39	263	12.9	38.2	17.2	-552	3	1.055	1.042
Sweden	2,728	2,501	581	318	286	52	507	3,341	236	3,103	8.5	11.4	18.1	426	14	1.033	1.033
Switzerland	2,931	2,473	3,277	2,140	516	42	3,497	3,169	2,318	2,686	15.9	3.7	8.1	1,079	1,477	1.035	1.034
Norway	821	775	308	256	70	23	180	1,400	126	1,352	5.7	26.9	32.3	-393	111	1.042	1.028
Cyprus	4	3	7	6	1	0	7	2	5	1	28.0	-37.1	24.9	-203	-1	1.062	1.127
Czech Republic	320	270	182	107	56	5	146	442	68	391	15.7	11.5	9.1	-1,193	4	1.037	1.050
Estonia	37	36	7	6	2	0	5	21	4	19	3.5	-86.0	15.0	-209	-20	1.065	1.066
Hungary	459	387	144	6	94	20	150	477	9	404	15.8	1.7	21.8	-2,698	-246	1.023	1.019
Lithuania	12	12	4	3	0	0	3	14	2	13	1.6	-4.8	31.6	-278	-3	1.089	1.086
Latvia	11	11	2	2	0	0	0	20	0	20	0.9	31.5	12.2	-185	-7	1.057	1.031
Malta	63	19	80	30	53	9	82	252	31	208	69.6	57.0	16.6	-225	25	1.010	1.013
Poland	570	556	41	27	17	2	40	490	24	476	2.5	-20.0	14.6	-1,463	-62	1.034	1.044
Slovak Republic	81	78	20	17	3	1	12	129	9	126	3.6	25.8	14.6	-115	9	1.053	1.048
Slovenia	39	34	17	12	6	1	13	42	8	37	12.9	-7.7	17.1	-195	2	1.054	1.050
Albania	1	1	0	0	0	0	0	6	0	6	5.1	96.8	7.9	-63	0	1.089	1.021
Bulgaria	40	37	7	3	4	1	8	68	3	65	7.7	35.5	14.5	-330	-5	1.072	1.040
Croatia	7	7	3	2	0	0	2	22	2	22	3.8	58.8	32.4	-357	-9	1.087	1.048
Romania	203	195	37	19	21	12	24	327	5	318	3.9	28.1	60.3	-884	9	1.086	1.056
Yugoslavia	2	1	3	1	1	0	3	13	0	12	56.6	71.7	10.5	-170	-3	1.051	1.051

Country Name	Partner actual exports to China	Partner direct exports to China	Partner total exports to Hong Kong	Partner exports remain in Hong Kong	Partner re-exports to China via Hong kong	Hong Kong re-export markup	Hong Kong total imports from partners	China actual imports from partners	Hong Kong retained imports from partner	China direct import from partner	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	Partners balance of trade with Hong Kong after adjustment	cif/fob ratio, partner to China	cif/fob ratio, partner to Hong Kong
Ukraine	676	663	117	102	16	1	20	1,041	4	1,026	2.1	20.8	8.9	-812	89	1.085	1.058
Russian Federation	8,543	8,369	345	99	195	8	552	12,111	286	11,917	2.1	26.2	4.0	-828	-14	1.077	1.068
Kazakhstan	1,767	1,764	3	0	4	0	4	2,286	0	2,282	0.2	19.2	2.5	-449	-5	1.058	1.067
Kyrgyz Republic	41	39	1	0	1	0	1	111	0	110	2.9	64.1	16.6	-451	0	1.051	1.020
Argentina	2,755	2,630	165	34	149	20	224	3,259	88	3,126	4.6	3.3	13.2	1,774	2	1.148	1.046
Brazil	5,758	5,437	773	392	352	13	894	8,704	489	8,357	5.7	24.9	3.8	1,420	263	1.150	1.058
Chile	3,309	3,210	138	41	108	3	191	3,677	84	3,570	3.1	7.1	2.9	1,354	6	1.043	1.087
Colombia	143	138	20	9	7	1	20	177	9	171	3.9	14.6	14.5	-559	-6	1.035	1.055
Ecuador	51	50	7	5	2	0	12	93	9	91	3.6	43.0	10.1	-318	-3	1.065	1.083
Peru	1,250	1,236	31	15	18	1	37	1,527	19	1,510	1.3	12.2	6.7	786	3	1.079	1.134
Paraguay	49	44	10	5	6	0	19	60	14	54	10.8	18.8	1.5	-291	-12	1.084	1.133
Venezuela	230	224	10	1	6	0	15	742	5	736	2.3	72.4	8.3	-423	-15	1.075	1.076
Uruguay	122	112	19	8	11	0	30	110	18	99	8.7	-6.5	3.9	-106	4	1.047	1.058
Costa Rica	246	163	137	9	118	33	273	644	142	558	34.3	58.1	28.0	74	1	1.010	1.024
Guatemala	20	19	1	0	1	0	3	43	2	43	2.8	54.1	3.6	-459	-26	1.105	1.051
Panama	12	11	8	7	1	0	16	15	14	14	8.4	33.7	9.2	-2,644	-82	1.072	1.065
Cuba	81	80	10	3	1	0	12	195	4	194	0.9	55.8	31.7	-254	2	1.070	1.029
Algeria	249	249	0	0	0	0	0	259	0	259	0.0	-0.7	9.8	-727	-3	1.050	1.066
Egypt Arab Rep	126	117	20	11	10	1	64	194	55	185	7.1	39.9	10.4	-1,309	-21	1.157	1.052
Iran Islamic Rep	238	210	108	74	31	2	128	4,497	92	4,467	11.9	97.4	6.2	-2,270	65	1.116	1.049
Israel	960	780	1,911	1,380	216	34	1,125	982	591	794	18.4	-39.2	15.7	-918	1,145	1.031	1.005
Jordan	40	39	2	1	1	0	6	89	5	88	1.9	60.0	13.7	-727	-50	1.054	1.059
Lebanon	16	12	12	8	4	0	8	13	4	9	22.9	-40.8	6.7	-493	-6	1.072	1.034
Morocco	118	50	88	1	82	13	115	215	26	146	58.3	36.1	16.1	-837	-8	1.054	1.017
Nigeria	83	76	7	0	8	1	20	466	12	459	8.0	84.5	8.8	-1,708	-33	1.050	1.047
Saudi Arabia	7,617	7,447	371	200	195	9	371	7,525	184	7,334	2.4	-8.9	4.8	4,624	144	1.068	1.086
Syrian Arab Republic	22	21	1	0	1	0	1	28	0	28	2.5	17.0	2.2	-698	-8	1.099	1.068
Tunisia	30	26	7	1	6	1	8	34	1	29	16.7	-2.1	11.4	-225	-3	1.160	1.093
Turkey	363	323	144	100	47	5	155	599	107	555	11.4	28.1	10.6	-2,792	6	1.110	1.085
Yemen	1,171	1,169	9	6	2	0	16	1,459	12	1,457	0.2	16.6	6.4	716	3	1.051	1.086
Benin	93	93	0	0	0	0	0	111	0	111	0.0	10.1	9.7	-487	-1	1.086	1.058
Ghana	20	20	83	1	0	0	110	80	0	80	1.7	40.4	6.4	-505	-6	1.111	1.271
Kenya	33	11	25	2	24	1	51	34	26	10	68.1	30.1	4.0	-364	-13	1.073	1.074
Mozambique	27	21	6	0	7	1	13	45	6	38	21.9	37.6	12.5	-51	-1	1.157	1.113
Malawi	0	0	0	0	0	0	0	0	0	0	42.8	-83.9	9.9	-20	0	1.103	1.064
Madagascar	13	9	8	4	4	0	9	18	4	14	30.3	12.8	8.5	-214	-18	1.114	1.080
Sudan	2,317	2,312	7	2	5	0	8	1,710	3	1,705	0.2	-43.4	5.9	1,586	-1	1.045	1.078
Togo	18	17	1	0	1	0	4	47	3	46	3.9	64.3	1.0	-406	-4	1.104	1.057
Tanzania	86	71	27	4	16	1	31	80	5	65	17.4	-6.4	4.6	-142	1	1.037	1.077
Uganda	20	5	24	8	17	1	18	26	0	10	78.2	-8.2	6.6	-53	7	1.071	1.076
South Africa	1,221	1,054	564	282	184	10	696	2,541	397	2,363	13.8	43.8	5.6	-2,202	150	1.076	1.053
Zambia	31	29	11	1	1	0	12	171	1	170	4.5	78.3	0.4	-22	1	1.021	1.017
Zimbabwe	113	110	9	3	3	0	10	141	4	138	2.2	15.0	0.6	33	2	1.071	1.048
Other reporting countries	2,039	1,944	265	105	111	10	274	7,827	102	7,724	4.8	73.6	9.4	-2,077	-53	1.079	1.061
No reporting partner countries	173	0	7,944	7,691	191	18	1,868	16,568	1,594	16,391	97.3	58.3	9.4	-12,191	7,287	1.082	1.041
Partner Total	410,388	347,209	181,251	101,863	74,329	8,652	154,984	515,696	72,445	449,000	16.0	5.4	11.6	-156,164	50,243	1.257	0.711
Hong Kong, China	13,312	78,989	0	0	0	0	0	11,539	0	78,235	0.0	-2.6	0.0	-21,121	0	1.015	na
China	0		100,215	34,433	0	0	82,410	0	12,650	0	0.0	-2.4	0.0	0	21,121	na	1.017
World Total	423,699	426,198	281,466	136,296	74,329	8,652	237,394	527,235	85,095	527,235	13.2	5.6	11.6	-177,285	71,364	1.244	0.624

cif/fob

$$wdx_{it}^{sr}\ wtx_{it}^{sr}\ wdm_{it}^{sr}\ wtm_{it}^{sr}\ wrxm_{it}^{sr}$$

3.5 The choice and estimation of reliability weights

Auto regression with dummy variables

$$e_{it} = a_i\, e_{it-}\ + b_i\ + \sum_{k=}^{n} b_i^k D^k + \mu_{it}$$

$$e_{it}$$

$$V\ e_{it}\ = V\ a_i e_{it-}\ + b_i\ + \sum_{k=}^{n} b_i^k D^k + \mu_{it}\ = V\ a_i e_{it-}\ + V\ \mu_{it}\ = a_i V\ e_{it-}\ + V\ \mu$$

$$V\ \ e_{it}\ \ - a_i V\ \ e_{it}\ \ = V\ \ \mu$$

$$V\ e_{it}\ = V\ \mu \Big/ - a_i$$

e_{it}

Route Reliability Indexes

$$PDX_{it}^{cs} = PDM_{it}^{cs} = \times \frac{\left| cif_{it}^{cs} DM_{it}^{cs} - DX_{it}^{cs} \right|}{DX_{it}^{cs} + cif_{it}^{cs} DM_{it}^{cs}}$$

$$PTX_{it}^{cs} = PTM_{it}^{cs} = \times \frac{\left| cif_{it}^{cs} TM_{it}^{cs} - TX_{it}^{cs} \right|}{TX_{it}^{cs} + cif_{it}^{cs} TM_{it}^{cs}}$$

$$PDX_{it}^{sc} = PDM_{it}^{sc} = \times \frac{\left| cif_{it}^{sc} DM_{it}^{sc} - DX_{it}^{sc} \right|}{DX_{it}^{sc} + cif_{it}^{sc} DM_{it}^{sc}}$$

$$PTX_{it}^{sc} = PTM_{it}^{sc} = \times \frac{\left| cif_{it}^{sc} TM_{it}^{sc} - TX_{it}^{sc} \right|}{TX_{it}^{sc} + cif_{it}^{sc} TM_{it}^{sc}}$$

$$wtx_{it}^{sr} = PTX_{it}^{sr} \times TX_{it}^{sr}$$

Reporter reliability indexes

$$RIM_{it}^{r} = \frac{MA_{it}^{r}}{\sum_{s} M_{it}^{sr}} \qquad where \qquad MA_{it}^{r} = \sum_{s \in AL_{it}^{sr} \leq} M_{it}^{sr} \qquad AL_{it}^{sr} = \frac{\left| M_{it}^{sr} - X_{it}^{sr} \right|}{M_{it}^{sr}}$$

$$RIX_{it}^{r} = \frac{XA_{it}^{r}}{\sum_{s} X_{it}^{rs}} \qquad where \qquad XA_{it}^{r} = \sum_{s \in AL_{it}^{sr} \leq} X_{it}^{rs} \qquad AL_{it}^{rs} = \frac{\left| M_{it}^{rs} - X_{it}^{rs} \right|}{M_{it}^{rs}}$$

M_{it}^{sr} X_{it}^{sr} i r s t

$$wtx_{it}^{sr} = -RIX_{it}^{s}\ PTX_{it}^{sr} \times TX_{it}^{sr}$$

$$wtm_{it}^{sr} = -RIM_{it}^{r}\ PTX_{it}^{sr} \times TM_{it}^{sr}$$

$$wdx_{it}^{sr} = -RIX_{it}^{s}\ PDX_{it}^{sr} \times DX_{it}^{sr}$$

$$wdm_{it}^{sr} = -RIM_{it}^{r}\ PDX_{it}^{sr} \times DM_{it}^{sr}$$

$$wrxm_{it}^{sr} = \lambda_{it}^{sr} \frac{STD\ RXMR_{it}^{sr}}{RXMR_{it}^{sr}} RXM_{it}^{sr}$$

λ_{it}^{sr} $wrxm_{it}^{sr}$

$STD\ RXMR_{it}^{sr}$

IV. Results from the Model

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Table 7. Initial and Adjusted Estimates of Bilateral Trade Between China, Hong Kong and their Partner Countries, Eastbound Flows, 2004, in Millions of U.S. Dollars

Country Name	China actual exports to partners	China direct exports to Partners	Hong Kong total exports to partner	Hong Kong domestic export to partner	China re-exports to partner via Hong kong	Hong Kong re-export markup	Partners total imports from Hong Kong	Partners actual imports from China	Partner imports of Hong Kong domestic products	Partner direct import from China	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	China reported balance of trade with partners	Partner reported balance of trade with China	Partners balance of trade with Hong Kong after adjustment	Hong Kong reported balance of trade with partners	Partner reported balance of trade with Hong Kong	cif/fob ratio, China to partner	cif/fob ratio, Hong Kong to partner
Variable in the model	TX0(CH,r)	DX0(CH,r)	TX0(HK,r)	DX0(HK,r)	RX0(s,CH)	RXM0(CH,r)	TM0(HK,r)	TM0(CH,r)	DM0(HK,r)	DM0(CH,r)	(RX0(CH,r)-RXM0(CH,r))/TX0(CH	SDX(r)	RXM0(CH,r)/RX0(CH,r)	TX0(CH,r)-TX0(r,CH)	TX0(CH,r)-TM0(r,CH)	TX0(r,CH)-TM0(CH,r)	TX0(HK,r)-TX0(r,HK)	TX0(HK,r)-TM0(r,HK)	TX0(r,HK)-TM0(HK,r)	cif(CH,r)	cif(HK,r)
Initial Estimates																					
United States	148,395	125,118	43,924	17,680	35,587	11,743	37,044	208,153	9,141	182,798	15.8	17.9	33.0	109,345	80,396	-174,095	8,745	29,467	-28,110	1.056	1.064
Canada	10,060	8,161	3,132	1,100	2,761	819	2,689	18,526	552	16,484	19.0	35.9	29.7	4,514	816	-13,460	568	1,927	-2,157	1.072	1.052
Mexico	5,658	4,973	938	219	808	110	1,158	14,003	406	13,273	12.1	57.1	13.6	4,923	2,831	-13,529	15	542	-955	1.060	1.048
Australia & New Zealand	11,814	9,916	3,603	1,237	2,847	910	3,519	15,244	1,037	13,208	16.1	13.3	32.0	3,789	-3,038	-7,835	-298	1,418	-1,984	1.069	1.049
Japan	81,678	73,222	13,799	4,141	11,977	3,348	11,373	93,589	1,322	84,605	10.4	3.5	28.0	-6,444	-21,036	-22,981	-7,923	-19,126	690	1.065	1.041
Korea Rep	29,199	27,810	5,653	2,287	2,832	1,423	6,719	29,585	3,268	28,135	4.7	-2.2	50.3	-26,694	-34,350	20,173	-8,694	-7,244	4,262	1.068	1.025
Taiwan China	15,351	13,489	6,298	2,215	2,487	598	6,270	16,625	2,072	14,679	12.1	1.0	24.1	-31,093	-51,289	17,373	-13,793	-13,724	9,738	1.053	1.029
India	6,610	5,925	2,096	389	813	118	3,418	6,687	1,683	5,973	10.3	9.9	14.6	797	-1,776	-1,403	-1,636	-1,686	-1,393	1.060	1.019
Russia	9,371	9,103	427	113	361	88	337	4,734	10	4,450	2.9	-116.6	24.3	828	-3,009	3,635	14	-125	-237	1.078	1.041
Brazil	4,338	3,675	833	129	778	105	1,103	4,049	369	3,348	15.3	-6.7	13.5	-1,420	-5,030	1,388	-263	-61	-711	1.061	1.041
South Africa	3,423	2,952	745	132	581	101	1,061	3,578	419	3,072	13.8	4.5	17.4	2,202	411	-2,524	-150	50	-779	1.069	1.048
EU 15	119,561	99,815	34,640	12,642	28,914	8,805	35,732	154,305	12,793	133,311	16.5	15.1	30.5	56,614	30,990	-98,759	-570	12,510	-22,520	1.060	1.045
European FT	3,065	2,534	1,537	808	1,131	590	1,648	4,679	890	4,114	17.4	24.6	52.1	-687	-2,034	-1,431	-1,588	-2,140	748	1.066	1.038
EU 10	8,357	7,325	1,600	516	1,501	454	2,155	12,505	1,029	11,418	12.3	30.2	30.3	6,763	5,437	-11,099	301	1,142	-1,940	1.053	1.037
Rest of Europe	3,545	3,410	199	47	174	37	241	3,533	83	3,390	3.8	-6.7	21.0	2,616	1,933	-2,630	-80	142	-114	1.072	1.044
ASEAN	48,621	41,793	15,803	5,793	10,588	3,652	21,848	44,369	11,437	37,134	14.0	-2.7	34.5	-125	-20,659	-5,402	-16,887	-16,515	832	1.054	1.039
Rest of Asia	9,880	9,126	2,313	738	1,124	354	3,188	5,918	1,505	5,093	7.7	-47.2	31.5	6,892	5,822	-3,374	300	1,255	-2,750	1.073	1.072
Rest of Latin America	9,336	8,036	1,638	265	1,537	212	1,769	8,620	322	7,223	14.0	-13.4	13.8	1,067	-2,507	-703	127	787	-1,630	1.066	1.055
Midest and North Africa	16,602	15,342	2,210	519	1,641	353	3,308	15,259	1,551	13,912	7.6	-9.0	21.5	5,654	-553	-4,816	-1,264	213	-1,526	1.072	1.034
Rest of Africa	5,208	4,943	389	90	334	64	566	2,597	247	2,308	5.1	-96.4	19.1	2,353	2,012	178	65	103	-540	1.073	1.066
Other reporting countries	4,115	3,517	806	159	724	113	1,193	3,940	497	3,282	14.6	-4.0	15.6	2,077	-4,310	-1,996	53	532	-1,088	1.081	1.075
No reporting partner countries	12,364	11,256	2,403	404	1,363	235	39,743	1,179	37,678	0	9.0	63.7	17.2	12,191	-5,312	-1,179	-7,287	535	-32,052	1.073	1.035
Partner Total	566,552	491,440	144,986	51,620	110,863	34,233	186,080	671,679	88,310	591,213	13.5	6.0	30.9	156,164	-24,256	-324,470	-50,243	-9,997	-84,217	1.186	1.711
Hong Kong, China	34,433	100,215	0	0	0	0	0	12,650	0	82,410	0.0	-27.6	0.0	21,121	21,980	21,980	0	0	21,980	1.017	an
China	0	0	78,989	13,312	0	0	78,235	0	11,539	0	0.0	-25.4	0.0	0	0	0	-21,121	-3,422	21,980	na	1.015
World Total	600,985	591,656	223,975	64,931	110,863	34,233	264,315	684,329	99,849	673,623	12.5	6.1	30.9	177,285	-2,276	-302,490	-71,364	-13,419	-40,257	1.139	1.538
Adjusted Estimates																					
United States	179,178	154,628	37,707	10,190	35,587	10,444	40,971	188,361	11,708	161,619	13.8	0.0	29.4	137,570	80,396	-174,095	2,144	29,467	-28,104	1.056	1.064
Canada	13,695	11,625	2,837	637	2,761	646	3,004	14,618	692	12,395	15.2	0.0	23.4	7,588	816	-13,460	64	1,927	-2,154	1.072	1.052
Mexico	8,543	7,834	1,011	268	808	86	1,070	8,974	293	8,219	8.3	0.0	10.6	7,096	2,831	-13,529	208	543	-954	1.060	1.048
Australia & New Zealand	13,407	11,466	3,423	1,030	2,847	867	3,609	14,296	1,100	12,215	14.5	0.0	30.4	3,688	-3,038	-7,835	-408	1,418	-1,978	1.069	1.049
Japan	86,217	77,259	11,912	1,769	11,977	2,839	12,479	91,755	1,924	82,239	10.4	0.0	23.7	-4,883	-21,036	-22,981	-10,690	-19,126	695	1.065	1.041
Korea Rep	28,024	26,546	5,814	2,361	2,832	1,333	5,953	29,912	2,414	28,369	5.3	0.0	47.1	-38,437	-34,350	20,173	-4,196	-7,244	4,266	1.068	1.025
Taiwan China	15,878	13,943	6,327	2,198	2,486	525	6,516	16,688	2,273	14,668	12.2	0.0	21.1	-54,248	-51,289	17,373	-9,457	-13,723	9,744	1.053	1.029
India	6,940	6,227	2,589	862	813	90	2,641	7,356	884	6,613	10.2	0.0	11.1	189	-1,776	-1,403	-1,173	-1,686	-1,390	1.060	1.019
Russia	5,741	5,450	376	40	361	65	392	6,237	42	5,928	5.1	0.0	18.0	-3,688	-3,009	3,635	-63	-124	-237	1.078	1.041
Brazil	4,101	3,415	978	252	778	82	1,035	4,336	280	3,611	16.7	0.0	10.6	-2,999	-5,030	1,388	-72	-61	-709	1.061	1.041
South Africa	3,694	3,203	824	192	580	81	874	3,931	212	3,403	13.3	0.0	13.9	2,019	411	-2,524	-90	50	-777	1.069	1.048
EU 15	136,433	116,038	33,383	10,761	28,914	8,145	35,031	144,438	11,446	122,760	15.0	0.0	28.2	71,165	30,991	-98,759	-1,538	12,511	-22,490	1.060	1.045
European FT	3,521	2,956	1,386	626	1,131	555	1,439	3,744	648	3,144	16.1	0.0	49.1	-620	-2,034	-1,431	-1,778	-2,140	752	1.066	1.038
EU 10	9,946	8,861	1,729	594	1,500	401	1,807	10,433	629	9,291	10.9	0.0	26.7	8,273	5,437	-11,099	423	1,143	-1,935	1.053	1.037
Rest of Europe	2,906	2,767	205	50	174	32	215	3,111	54	2,963	4.8	0.0	18.3	2,408	1,933	-2,630	-406	144	-112	1.072	1.044
ASEAN	46,453	39,217	17,943	7,546	10,587	3,239	18,739	48,854	7,927	41,191	15.6	0.0	30.6	-23,286	-20,659	-5,402	-13,048	-16,514	858	1.054	1.039
Rest of Asia	7,883	7,110	2,509	936	1,123	334	2,706	8,453	1,027	7,607	9.9	0.0	29.7	5,523	5,822	-3,374	529	1,256	-2,740	1.073	1.072
Rest of Latin America	8,707	7,369	1,630	220	1,536	171	1,740	9,249	255	7,811	15.4	0.0	11.1	-1,069	-2,507	-703	25	788	-1,626	1.066	1.055
Midest and North Africa	15,875	14,561	2,556	815	1,640	298	2,669	16,988	860	15,585	8.3	0.0	18.2	652	-553	-4,816	-680	214	-1,519	1.072	1.034
Rest of Africa	3,693	3,416	420	111	334	51	454	3,954	125	3,652	7.5	0.0	15.4	642	2,012	178	13	104	-537	1.073	1.066
Other reporting countries	4,139	3,512	942	267	723	84	1,030	4,458	305	3,769	15.2	0.0	11.6	1,418	-4,310	-1,996	211	534	-1,085	1.081	1.075
No reporting partner countries	6,742	5,571	2,905	854	1,363	170	3,015	7,183	895	5,936	17.4	0.0	12.5	5,770	-5,307	-1,179	-330	535	-32,050	1.073	1.035
Partner Total	611,714	532,973	139,405	42,577	110,856	30,536	147,388	647,328	45,993	562,991	13.1		27.5	124,774	-24,249	-324,470	-40,312	-9,984	-84,079	1.059	1.063
Hong Kong, China	19,758	98,499	0	0	0	0	0	20,173	0	100,494	0.0	0.0	0.0	2,862	21,986	21,986	0	0	21,986	1.017	na
China	0	0	83,653	16,896	0	0	84,903	0	17,133	0	0.0	0.0	0.0	0	0	0	-2,862	-3,422	21,986	na	1.015
World Total	631,472	631,472	223,057	59,473	110,856	30,536	232,292	667,502	63,126	663,485	12.5	0.0	27.5	127,636	-2,263	-302,484	-43,174	-13,405	-40,108	1.058	1.055

Table 8. Initial and Adjusted Estimates of Bilateral Trade Between China, Hong Kong and their Partner Countries, Westbound Flows, 2004, in Millions of U.S. Dollars

Country Name	Partner actual exports to China	Partner direct exports to China	Partner total exports to Hong Kong	Partner exports remain in Hong Kong	Partner re-exports to China via Hong kong	Hong Kong re-export markup	Hong Kong total imports from partners	China actual imports from partners	Hong Kong retained imports from partner	China direct import from partner	Re-exports as percent of partner total exports to China (RX0(r,CH)-RXM0(r,CH))/TX0(r,CH)	Statistical discrepancies	Hong Kong re-export markup rate RXM0(CH,r)/RX0(CH,r)	Partners balance of trade with China after adjustment TX0(CH,r)-TX0(r,CH)	Partners balance of trade with Hong Kong after adjustment TX0(HK,r)-TX0(r,HK)	cif/fob ratio, partner to China	fob/cif ratio, partner to Hong Kong
Variable in the model	TX0(s,CH)	DX0(s,CH)	TX0(s,Hk)	DX0(s,Hk)	RX0(s,CH)	RXM0(s,CH	TM0(s,HK)	TM0(s,CH)	DM0(s,HK)	DM0(s,CH)		SDX(s)				cif(s,CH)	cif(s,HK)
Initial Estimates																	
United States	39,049	34,058	15,509	8,935	5,795	674	14,457	44,722	7,716	39,510	12.9	5.4	11.6	-109,345	-8,745	1.027	1.023
Canada	5,546	5,066	1,067	531	585	78	1,205	7,346	640	6,829	9.0	17.1	13.3	-4,514	-568	1.089	1.054
Mexico	734	474	533	203	309	39	396	2,142	52	1,869	36.2	49.5	12.7	-4,923	-15	1.046	1.059
Australia & New Zealand	8,025	7,409	2,390	1,535	711	50	2,185	12,954	1,263	12,278	8.1	27.1	7.0	-3,789	298	1.088	1.083
Japan	88,122	70,608	32,981	12,064	20,625	2,459	32,925	94,258	11,235	75,851	20.3	0.3	11.9	6,444	7,923	1.045	1.040
Korea Rep	55,894	49,757	18,127	10,981	6,730	345	12,897	62,160	5,478	55,676	11.3	-4.3	5.1	26,694	8,694	1.059	1.033
Taiwan China	46,444	33,997	29,728	16,007	14,773	1,828	20,022	64,778	5,741	51,642	27.5	5.7	12.4	31,093	13,793	1.053	1.043
India	5,813	5,285	3,649	2,025	621	66	3,782	7,701	2,116	7,128	9.4	12.0	10.7	-797	1,636	1.113	1.015
Russia	8,543	8,369	345	99	195	8	552	12,111	286	11,917	2.2	26.1	4.0	-828	-14	1.077	1.068
Brazil	5,758	5,437	773	392	352	13	894	8,704	489	8,357	5.8	24.8	3.8	1,420	263	1.150	1.058
South Africa	1,221	1,054	564	282	184	10	696	2,541	397	2,363	14.0	43.7	5.6	-2,202	150	1.076	1.053
EU 15	62,947	55,546	23,503	13,211	8,771	1,079	22,130	68,824	11,403	60,994	12.0	1.3	12.3	-56,614	570	1.036	1.040
European FT	3,752	3,249	3,585	2,396	586	64	3,677	4,569	2,444	4,037	13.7	8.1	11.0	687	1,588	1.037	1.034
EU 10	1,594	1,406	504	215	232	39	458	1,889	160	1,694	11.9	7.6	16.8	-6,763	-301	1.031	1.034
Rest of Europe	929	904	167	127	42	15	57	1,477	14	1,449	2.9	24.6	35.2	-2,616	80	1.084	1.054
ASEAN	48,746	38,967	35,109	22,680	11,904	1,700	32,318	62,452	19,382	52,111	20.6	7.1	14.3	125	16,887	1.059	1.040
Rest of Asia	2,988	2,544	1,066	437	502	24	1,058	3,305	382	2,815	15.7	0.7	4.8	-6,892	-300	1.063	1.065
Rest of Latin America	8,269	7,917	558	138	428	60	851	10,543	408	10,167	4.4	16.8	13.9	-1,067	-127	1.080	1.055
Midest and North Africa	10,947	10,442	2,673	1,782	596	66	1,997	15,895	1,078	15,351	4.8	20.8	11.1	-5,654	1,264	1.079	1.031
Rest of Africa	2,855	2,776	210	25	87	5	285	2,931	65	2,847	2.8	-0.7	5.9	-2,353	-65	1.052	1.139
Other reporting countries	2,039	1,944	265	105	111	10	274	7,827	102	7,724	4.9	74.7	9.4	-2,077	-53	1.079	1.061
No reporting partner countries	173	0	7,944	7,691	191	18	1,868	16,568	1,594	16,391	98.5	58.4	9.4	-12,191	7,287	1.082	1.041
Partner Total	410,388	347,209	181,251	101,863	74,329	8,652	154,984	515,696	72,445	449,000	16.0	5.4	11.6	-156,164	50,243	1.257	0.711
Hong Kong, China	13,312	78,989	0	0	0	0	0	11,539	0	78,235	0.0	-2.6	0.0	-21,121	0	1.015	na
China	0	0	100,215	34,433	0	0	82,410	0	12,650	0	0.0	-2.4	0.0	0	21,121	na	1.017
World Total	423,699	426,198	281,466	136,296	74,329	8,652	237,394	527,235	85,095	527,235	13.2	5.6	11.6	-177,285	71,364	1.244	0.624
Adjusted Estimates																	
United States	41,608	36,530	14,696	8,046	5,795	587	15,231	42,644	8,415	37,345	12.3	0.0	10.1	-137,570	-2,144	1.027	1.023
Canada	6,106	5,625	1,103	573	585	78	1,180	6,738	621	6,222	8.2	0.0	13.3	-7,588	-64	1.089	1.054
Mexico																	

4.1 Adjusted trade flow and balance of trade between China and its major trading partners

4.2 Adjusted Hong Kong re-export markup rates

Figure 1. Hong Kong markup rates for re-export Chinese goods to the US and to the rest of the world, 1995 ~ 2005

Table 9. Initial and Adjusted Estimates of Hong Kong's Re-export Rate by GTAP sectors, 2004, in percent

		Eastbound Trade						West Bound Trade					
		Initial Estimates			*Adjusted Estimates*			*Initial Estimates*			*Adjusted Estimates*		
GTAP	Sector name	Hong Kong re-exports as percent of China's total exports	Hong Kong re-exports markup rate	Standard deviation of markup rate	re-exports as percent of China's total exports	Hong Kong re-exports markup rate	Standard deviation of markup rate	Hong Kong re-exports as percent of China's total imports	Hong Kong re-exports markup rate	Standard deviation of markup rate	re-exports as percent of China's total imports	Hong Kong re-exports markup rate	Standard deviation of markup rate
1	Paddy rice,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Wheat,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Cereal grains nec,	0.0	61.5	18.9	0.0	68.5	33.6	0.1	10.0	0.0	0.0	0.0	0.0
4	Vegetables fruit nuts,	0.3	24.4	16.9	0.4	23.7	17.2	24.5	1.6	0.8	24.2	0.6	5.9
5	Oil seeds,	0.1	32.7	15.3	0.1	11.4	16.5	0.1	4.6	1.1	0.1	0.0	0.0
6	Sugar cane and sugar beet,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Plant-based fibers,	0.9	7.4	0.0	0.4	53.7	31.6	0.5	16.2	10.1	0.3	38.7	42.5
8	Crops nec,	2.4	52.4	9.8	3.0	58.7	7.3	7.6	9.9	12.0	7.0	14.5	15.0
9	Bovine cattle sheep and goats horses,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Animal products nec,	0.6	40.6	28.7	0.7	38.8	15.6	37.3	6.2	2.8	39.2	7.4	19.0
12	Wool silk-worm cocoons,	10.0	0.0	0.0	8.9	1.6	0.3	0.1	19.7	0.0	0.0	29.4	1.7
13	Forestry,	3.5	38.1	11.6	2.0	39.0	12.4	3.2	5.0	6.0	2.3	12.5	31.5
14	Fishing,	2.6	31.6	16.7	0.0	100.0	0.0	4.0	4.6	4.6	0.0	100.0	0.0
15	Coal,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Oil,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Gas,	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	Minerals nec,	0.5	36.9	34.6	0.4	32.4	36.5	1.9	28.8	25.8	1.1	39.1	33.1
19	Bovine cattle sheep and goat horse meat prods,	0.5	0.7	0.0	0.3	10.6	3.2	36.9	3.0	1.7	33.6	35.2	42.2
20	Meat products nec,	0.3	20.9	6.2	0.3	24.9	12.0	45.1	2.6	3.0	60.5	4.2	7.5
21	Vegetable oils and fats,	1.1	32.0	14.1	0.9	42.6	25.0	1.7	2.3	2.0	1.7	2.4	5.9
22	Dairy products,	4.0	31.4	8.4	2.4	77.1	7.3	6.7	30.4	11.2	6.0	44.5	33.7
23	Processed rice,	0.1	15.7	0.0	0.1	32.7	30.4	0.3	11.6	0.0	0.4	13.9	0.0
24	Sugar,	0.8	20.8	0.0	1.2	16.5	0.0	4.8	6.5	3.3	3.7	7.4	21.4
25	Food products nec,	1.3	25.6	9.6	1.1	41.3	11.5	8.1	5.8	4.5	8.0	9.4	18.9
26	Beverages and tobacco products,	14.1	35.7	16.3	13.8	41.7	14.5	25.4	28.6	20.0	36.4	31.7	27.9
27	Textiles,	11.2	30.8	12.4	10.8	29.1	12.9	29.4	8.4	3.0	29.6	7.2	12.2
28	Wearing apparel,	14.5	39.3	9.6	15.9	37.3	10.4	45.7	7.5	6.5	16.3	64.7	44.8
29	Leather products,	27.9	15.3	5.7	26.8	14.8	5.7	44.2	11.7	6.2	45.4	11.1	16.9
30	Wood products,	4.1	31.0	10.6	3.3	32.6	9.9	12.3	5.0	3.8	12.7	8.2	16.9
31	Paper products publishing,	25.4	50.4	7.1	23.4	49.7	7.2	8.3	6.0	3.7	7.0	5.4	8.1
32	Petroleum, coal products,	0.1	6.4	7.7	0.1	3.5	2.8	2.0	3.9	4.9	2.3	1.6	4.1
33	Chemical rubber plastic products,	6.0	34.8	8.7	5.7	34.3	8.7	14.9	7.9	3.9	15.4	7.9	7.8
34	Mineral products nec,	2.9	32.9	12.6	2.6	34.3	12.5	10.1	9.1	3.0	10.0	9.5	3.6
35	Ferrous metals,	0.2	36.7	19.8	0.2	55.6	22.2	9.6	5.1	3.2	11.6	15.1	13.1
36	Metals nec,	2.5	17.8	13.0	1.9	11.8	13.7	11.8	4.2	5.4	11.1	2.5	13.0
37	Metal products,	8.4	33.7	9.4	8.9	31.0	9.4	8.6	5.4	3.9	8.0	1.8	7.5
38	Motor vehicles and parts,	0.2	49.6	18.5	0.3	41.9	21.7	7.6	5.2	3.8	8.1	0.9	9.4
39	Transport equipment nec,	1.6	19.1	14.1	2.1	20.1	14.2	1.9	2.8	5.2	1.5	24.4	42.7
40	Electronic equipment,	15.9	24.1	15.1	13.5	22.9	15.1	30.1	16.1	7.0	21.6	12.6	11.5
41	Machinery and equipment nec,	15.5	34.3	9.4	17.1	21.7	11.3	11.7	8.7	6.7	9.6	5.2	9.4
42	Manufactures nec,	30.0	40.8	8.3	25.9	39.7	8.2	22.9	10.1	5.2	25.6	10.0	16.2
	All sectors	13.3	30.9	6.8	12.9	27.5	7.0	15.8	11.6	4.5	13.5	10.2	8.8

4.3 Hong Kong re-exports earnings and retained imports

Table 10. Initial and Adjusted Estimates of Hong Kong's Re-export Earnings and Retained Imports, 2004, in million U.S. Dollars

GTAP	Sector name	Re-export for China Initial	Re-export to China A	Excluding China	Including China

4.4 Adjusted China's balance of trade at sector level

Table 11. Initial and Adjusted Estimates of China's Net Trade Flows, 2004, in million U.S. Dollars

GTAP	Sector name	Trade Balance with All Partners Excluding Hong Kong				Trade Balance with All Partners				Trade Balance with the United States			
		China officially reported	Initial estimates	Adjusted estimates	Partner offcially reported	China officially reported	Initial estimates	Adjusted estimates	Partner offcially reported	China officially reported	Initial estimates	Adjusted estimates	U.S. officially reported
1	Paddy rice,	47.5	47.6	45.9	-101.7	47.5	47.6	45.9	-101.7	0.0	0.0	0.0	0.0
2	Wheat,	-1,528.4	-952.1	-1,541.1	880.2	-1,528.4	-952.1	-1,541.1	880.2	-648.2	-495.1	-810.4	495.1
3	Cereal grains nec,	69.0	199.3	118.6	-350.9	70.7	201.0	120.4	-352.8	0.1	-0.6	-0.2	0.2
4	Vegetables fruit nuts,	1,095.1	1,222.0	994.6	-1,549.6	981.2	1,324.8	1,135.3	-1,737.5	20.0	-0.7	18.2	-95.0
5	Oil seeds,	-6,620.1	-4,665.6	-5,600.3	4,545.8	-6,623.1	-4,663.6	-5,596.7	4,542.6	-3,334.8	-2,314.9	-3,286.7	2,306.9
6	Sugar cane and sugar beet,	-0.4	0.0	-0.3	0.0	-0.4	0.0	-0.3	0.0	0.0	0.0	0.0	0.0
7	Plant-based fibers,	-2,829.9	-2,057.0	-2,761.9	2,035.5	-2,843.5	-2,059.4	-2,762.1	2,037.7	-1,766.1	-1,426.8	-1,510.1	1,421.0
8	Crops nec,	898.0	920.4	477.9	-1,183.9	1,006.7	1,030.3	573.7	-1,301.1	45.9	46.3	21.1	-120.3
9	Bovine cattle sheep and goats horses,	-184.3	-154.3	-180.6	158.7	-154.3	-124.3	-168.1	144.2	0.0	-0.1	-0.2	0.1
10	Animal products nec,	-1,216.1	-955.0	-826.9	92.9	-1,725.1	-706.9	-520.8	-186.2	-380.0	-414.9	-375.7	243.1
12	Wool silk-worm cocoons,	-976.0	-978.2	-941.0	666.0	-976.1	-978.4	-941.0	665.2	-6.3	-4.0	-4.0	0.5
13	Forestry,	-2,816.1	-1,421.5	-1,767.9	1,252.5	-2,864.4	-1,420.5	-1,763.4	1,247.6	-69.4	-133.3	-103.3	94.1
14	Fishing,	729.5	623.9	-123.7	-615.7	875.5	757.5	-123.7	-716.0	4.6	2.6	-8.4	-21.4
15	Coal,	2,927.2	3,208.6	2,688.7	-4,155.3	2,975.6	3,257.0	2,726.5	-4,214.3	8.6	-24.5	6.3	17.9
16	Oil,	-24,368.3	-10,008.7	-17,763.5	9,968.3	-24,368.3	-10,008.7	-17,763.5	9,968.3	114.5	114.0	137.6	-181.2
17	Gas,	-0.1	-140.5	-66.6	140.4	186.8	46.5	120.0	-114.4	0.0	0.0	0.0	0.0
18	Minerals nec,	-18,063.6	-9,379.2	-14,306.8	8,297.6	-18,223.7	-9,405.6	-14,294.7	8,308.6	-112.6	39.9	39.1	-142.8
19	Bovine cattle sheep and goat horse meat prods	-441.3	-432.5	-283.7	275.7	-600.8	-411.7	-258.7	253.7	-97.3	-60.2	-29.9	28.0
20	Meat products nec,	923.1	901.9	779.5	-688.9	1,117.7	1,224.3	1,107.8	-1,017.9	-76.8	-77.7	-81.2	50.6
21	Vegetable oils and fats,	-3,775.6	-3,330.1	-3,471.0	3,205.0	-3,794.9	-3,289.8	-3,430.9	3,166.5	-12.3	-11.2	-9.1	3.9
22	Dairy products,	-425.8	-456.0	-428.3	431.5	-419.3	-430.8	-388.0	404.1	-45.9	-44.9	-47.4	46.4
23	Processed rice,	-73.5	-46.2	-61.0	-10.8	-68.3	-40.6	-54.7	-17.4	11.8	11.8	15.9	-20.8
24	Sugar,	-276.0	-166.2	-222.3	93.6	-275.7	-157.2	-212.1	82.8	0.4	0.4	0.5	-0.9
25	Food products nec,	6,575.6	7,307.3	6,719.0	-8,507.9	7,013.9	7,903.7	7,261.1	-9,109.5	984.6	1,090.6	1,166.9	-1,658.2
26	Beverages and tobacco products,	27.5	-86.7	61.9	7.2	456.2	348.8	512.4	-434.1	-4.0	-14.7	-0.1	-30.4
27	Textiles,	23,596.4	28,304.8	30,968.1	-26,059.3	27,361.0	32,093.4	33,056.6	-31,747.0	4,750.7	5,149.9	6,901.7	-7,201.0
28	Wearing apparel,	40,695.1	47,645.2	44,783.2	-49,780.4	47,523.7	46,953.5	48,048.7	-60,124.8	5,996.6	8,239.7	9,998.1	-11,539.5
29	Leather products,	17,201.4	24,896.2	26,376.1	-34,024.2	17,862.8	24,647.0	26,171.1	-41,476.4	7,897.9	11,735.0	13,528.1	-16,648.9
30	Wood products,	11,559.4	12,772.9	16,653.9	-24,214.6	12,689.1	13,622.4	17,086.4	-25,370.6	6,507.7	6,860.5	9,421.5	-13,910.6
31	Paper products publishing,	-7,344.8	-4,006.7	-5,196.5	1,260.9	-7,259.7	-4,097.1	-4,965.3	232.6	-1,036.1	-28.9	40.1	-1,166.3
32	Petroleum, coal products,	-3,282.4	-2,674.7	-1,925.4	3,435.5	-3,176.2	-2,332.5	-1,576.2	3,154.0	499.7	612.5	665.2	-767.5
33	Chemical rubber plastic products,	-44,194.3	-22,527.9	-18,279.5	8,508.8	-51,494.2	-22,259.1	-18,669.5	6,875.9	901.3	3,592.0	4,397.2	-6,814.2
34	Mineral products nec,	5,686.2	6,581.1	7,201.7	-9,761.6	6,369.0	7,321.1	7,591.3	-10,335.7	1,539.0	1,703.3	2,412.0	-3,396.9
35	Ferrous metals,	-11,957.5	-8,561.7	-6,788.0	7,376.4	-13,881.6	-8,146.0	-7,031.8	7,305.4	669.9	456.7	889.3	-556.9
36	Metals nec,	-11,617.4	-7,345.9	-5,385.8	5,366.5	-11,485.0	-5,277.9	-3,438.3	5,108.7	-684.2	-903.7	-815.4	836.6
37	Metal products,	12,367.4	15,022.7	13,984.1	-18,289.3	13,365.5	14,960.1	13,856.6	-20,260.3	5,161.5	5,953.6	6,502.2	-7,748.3
38	Motor vehicles and parts,	-4,980.3	-4,333.7	-5,445.7	8,723.0	-4,950.9	-3,239.1	-3,935.6	8,623.8	3,044.4	2,998.1	1,655.7	-1,409.3
39	Transport equipment nec,	2,205.4	2,069.0	-259.4	46.7	2,621.0	2,487.8	80.4	-343.8	-1,277.8	-618.1	-1,000.3	270.6
40	Electronic equipment,	22,336.5	70,769.5	61,346.6	-135,930.9	31,648.9	80,064.8	54,694.0	-152,064.1	35,413.8	41,123.0	54,073.8	-57,796.1
41	Machinery and equipment nec,	-43,914.9	-8,964.7	-27,680.4	-26,354.3	-41,761.2	-8,187.3	-29,862.1	-37,365.2	7,214.0	13,227.7	17,215.0	-24,172.9
42	Manufactures nec,	17,698.2	27,317.8	32,881.3	-49,659.0	22,039.5	27,181.6	32,746.6	-58,173.7	9,160.5	12,962.0	16,547.1	-24,511.0
	All sectors	-24,248.6	156,164.8	124,774.0	-324,469.7	-2,263.1	177,284.6	127,636.3	-393,562.8	80,395.7	109,345.1	137,570.3	-174,095.3

V. Concluding Remarks

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Appendix Table A. Countries in the other reporting country block of the model

Country number	*ISO3*	*Country name*	*Country number*	*ISO3*	*Country name*

Appendix Table B. Adjusted Estimates of Bilateral Trade Between China, Hong Kong and their Partner Countries, Eastbound Flows, 2004, in Millions of U.S. Dollars

Country Name	China actual exports to partners	China direct exports to Partners	Hong Kong total exports to partner	Hong Kong domestic export to partner	China re-exports to partner via Hong kong	Hong Kong re-export markup	Partners total imports from Hong Kong	Partners actual imports from China	Partner imports of Hong Kong domestic products	Partner direct import from China	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	China reported balance of trade with partners	Partner reported balance of trade with China	Partners balance of trade with Hong Kong after adjustment	Hong Kong reported balance of trade with partners	Partner reported balance of trade with Hong Kong	cif/fob ratio, China to partner	cif/fob ratio, Hong Kong to partner
Variable in the model	TX(CH,r)	DX(CH,r)	TX(HK,r)	DX(HK,r)	RX(s,CH)	RXM(CH,r)	TM(HK,r)	TM(CH,r)	DM(HK,r)	DM(CH,r)	(RX(CH,r)-RXM(CH,r))/TX(CH,r)	SDX(r)	RXM(CH,r)/RX(CH,r)	TX(CH,r)-TX(r,CH)	TX0(CH,r)-TM0(r,CH)	TX0(r,CH)-TM0(CH,r)	TX(HK,r)-TX(r,HK)	TX0(HK,r)-TM0(r,HK)	TX0(r,HK)-TM0(HK,r)	cif(CH,r)	cif(HK,r)
United States	179,178	154,628	37,707	10,190	35,587	10,444	40,971	188,361	11,708	161,619	13.7	0.0	29.4	137,570	80,396	-174,095	2,144	29,467	-21,533	1.056	1.064
Canada	13,695	11,625	2,837	637	2,761	646	3,004	14,618	692	12,395	15.1	0.0	23.4	7,588	816	-13,460	64	1,927	-1,620	1.072	1.052
Mexico	8,543	7,834	1,011	268	808	86	1,070	8,974	293	8,219	8.3	0.0	10.6	7,096	2,831	-13,529	208	543	-625	1.060	1.048
Australia	11,732	10,034	3,035	922	2,493	760	3,198	12,504	983	10,684	14.5	0.0	30.5	3,171	-2,702	-6,755	-267	1,334	-1,107	1.068	1.049
New Zealand	1,675	1,431	387	108	354	106	411	1,793	117	1,532	14.5	0.0	30.0	517	-336	-1,080	-141	84	-18	1.074	1.053
Japan	86,217	77,259	11,912	1,769	11,977	2,839	12,479	91,755	1,924	82,239	10.4	0.0	23.7	-4,883	-21,036	-22,981	-10,690	-19,126	21,609	1.065	1.041
Korea Rep	28,024	26,546	5,814	2,361	2,832	1,333	5,953	29,912	2,414	28,369	5.3	0.0	47.1	-38,437	-34,350	20,173	-4,196	-7,244	11,410	1.068	1.025
Taiwan China	15,878	13,943	6,327	2,198	2,486	525	6,516	16,688	2,273	14,668	12.2	0.0	21.1	-54,248	-51,289	17,373	-9,457	-13,723	23,462	1.053	1.029
Singapore	16,155	13,707	6,216	2,375	3,456	974	6,410	16,769	2,461	14,211	15.2	0.0	28.2	-3,947	-1,281	-1,016	-10,543	-8,655	9,791	1.040	1.027
Macao	1,702	1,525	1,222	342	256	76	1,308	1,822	371	1,630	10.4	0.0	29.7	1,473	1,387	-1,140	219	944	-1,011	1.074	1.067
Indonesia	4,957	4,289	1,117	283	851	171	1,194	5,315	315	4,597	13.5	0.0	20.1	-1,791	-942	668	-349	-665	262	1.070	1.059
Malaysia	9,915	8,897	2,648	1,321	1,625	593	2,745	10,425	1,371	9,357	10.3	0.0	36.5	-10,268	-10,072	-1,704	-1,189	-4,377	3,401	1.055	1.033
Philippines	3,953	2,842	2,751	1,209	1,679	548	2,884	4,169	1,275	2,988	28.1	0.0	32.7	-7,115	-4,807	-188	-814	-1,821	-126	1.061	1.042
Thailand	7,472	6,399	3,074	1,474	1,838	750	3,202	7,892	1,539	6,758	14.4	0.0	40.8	-3,113	-5,757	-1,158	-743	-2,210	1,774	1.060	1.040
Vietnam	3,342	2,743	1,560	649	746	134	1,670	3,577	705	2,927	17.9	0.0	18.0	2,306	1,777	-1,602	363	771	-1,661	1.084	1.058
Cambodia	659	340	577	233	393	68	635	706	261	353	48.4	0.0	17.2	643	422	-402	228	443	-164	1.085	1.086
Bangladesh	2,288	1,980	543	203	418	102	590	2,447	225	2,108	13.5	0.0	24.5	2,219	1,825	-1,556	146	419	-682	1.073	1.074
India	6,940	6,227	2,589	862	813	90	2,641	7,356	884	6,613	10.3	0.0	11.1	189	-1,776	-1,403	-1,173	-1,686	233	1.060	1.019
Sri Lanka	940	726	593	341	355	136	647	1,014	375	778	22.8	0.0	38.4	914	668	-458	283	364	-821	1.084	1.081
Pakistan	1,758	1,689	144	50	84	14	153	1,874	55	1,802	3.9	0.0	17.2	1,119	1,635	-1,186	-121	-476	403	1.068	1.052
Austria	1,681	1,326	600	210	513	152	625	1,777	221	1,403	21.1	0.0	29.7	224	-730	-1,454	-127	72	-119	1.051	1.039
Belgium	7,238	6,503	1,650	527	1,047	297	1,695	7,729	542	6,951	10.2	0.0	28.4	4,116	2,327	-5,548	-678	-187	-10	1.070	1.026
Germany	35,100	30,060	7,621	2,146	6,905	1,779	8,013	36,882	2,311	31,543	14.4	0.0	25.8	6,970	-6,624	-15,415	267	2,940	-2,705	1.052	1.045
Denmark	2,405	2,041	769	348	578	208	806	2,581	366	2,193	15.1	0.0	35.9	1,041	392	-1,890	208	40	50	1.073	1.044
Spain	8,475	7,248	1,723	370	1,637	385	1,816	9,084	399	7,772	14.5	0.0	23.5	6,894	3,715	-9,256	98	1,411	-1,229	1.075	1.049
Finland	2,928	2,434	838	305	818	318	871	3,043	319	2,526	16.9	0.0	38.9	21	-602	-14	180	460	-174	1.040	1.033
France	16,286	14,057	3,072	655	2,981	709	3,247	17,191	719	14,814	13.7	0.0	23.8	8,832	2,252	-14,025	-1,052	1,016	-594	1.056	1.048
United Kingdom	22,373	17,788	8,133	3,089	6,849	2,170	8,559	23,948	3,280	19,045	20.5	0.0	31.7	17,245	10,141	-22,087	529	4,385	-3,633	1.068	1.049
Greece	1,569	1,389	260	68	228	44	274	1,694	72	1,501	11.5	0.0	19.2	1,487	1,293	-1,692	20	215	-220	1.080	1.050
Ireland	3,180	2,964	507	268	328	108	531	3,293	281	3,063	6.8	0.0	32.9	2,035	946	-2,748	-408	-596	186	1.038	1.043
Italy	12,729	10,767	2,719	580	2,654	652	2,831	13,630	608	11,549	15.4	0.0	24.6	6,157	2,731	-9,246	-1,450	-336	875	1.071	1.042
Luxembourg	155	128	82	23	35	8	84	162	24	134	17.3	0.0	23.5	24	788	40	8	45	-95	1.036	1.028
Netherlands	19,465	17,033	4,258	1,600	3,555	1,089	4,454	20,367	1,689	17,800	12.5	0.0	30.6	16,426	15,534	-15,077	622	2,702	-3,626	1.048	1.041
Portugal	566	466	138	32	135	33	146	608	35	502	17.5	0.0	24.9	356	307	-453	-12	83	-70	1.075	1.052
Sweden	2,283	1,831	1,013	541	652	192	1,078	2,450	580	1,965	19.8	0.0	29.5	-662	-1,481	105	258	260	-851	1.070	1.057
Switzerland	2,008	1,640	1,046	490	812	436	1,076	2,128	501	1,739	18.4	0.0	53.7	-1,127	-1,663	200	-1,782	-2,298	2,064	1.060	1.031
Norway	1,513	1,316	340	136	319	119	363	1,617	148	1,405	13.0	0.0	37.3	507	-371	-1,630	4	158	-125	1.072	1.059
Cyprus	201	179	41	16	27	4	44	217	18	193	11.1	0.0	14.9	199	183	-230	10	24	-54	1.077	1.053
Czech Republic	2,558	2,386	284	103	252	77	298	2,667	109	2,486	6.7	0.0	30.7	2,129	909	-3,241	27	128	-158	1.046	1.041
Estonia	284	239	74	27	64	19	78	298	29	251	15.7	0.0	29.9	253	181	-344	22	67	-75	1.051	1.041
Hungary	2,969	2,434	893	341	747	206	928	3,064	358	2,506	18.0	0.0	27.6	2,545	2,174	-2,484	335	625	-1,055	1.036	1.031
Lithuania	311	295	26	6	21	5	27	332	7	314	5.3	0.0	22.5	302	260	-283	4	23	-24	1.065	1.050
Latvia	110	92	26	7	26	8	27	118	8	100	16.0	0.0	30.4	100	159	-80	6	28	-26	1.081	1.052
Malta	82	67	25	9	20	4	26	87	9	70	18.7	0.0	20.6	-50	21	-58	-21	-61	49	1.045	1.061
Poland	2,876	2,680	275	66	264	64	290	3,064	71	2,854	6.8	0.0	24.1	2,376	1,353	-3,509	43	250	-222	1.068	1.045
Slovak Republic	368	332	49	12	43	6	51	388	13	349	9.9	0.0	14.8	275	31	-719	-2	32	-61	1.059	1.046
Slovenia	186	158	36	7	36	7	39	199	8	168	15.2	0.0	20.5	144	165	-152	-2	25	-23	1.070	1.055
Albania	64	63	1	0	1	0	1	69	0	68	0.8	0.0	35.0	61	57	-100	0	1	-1	1.065	1.042
Bulgaria	407	374	50	12	38	4	53	432	13	398	8.1	0.0	11.0	371	270	-427	8	38	-53	1.066	1.036

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Country Name	China actual exports to partners	China direct exports to Partners	Hong Kong total exports to partner	Hong Kong domestic export to partner	China re-exports to partner via Hong kong	Hong Kong re-export markup	Partners total imports from Hong Kong	Partners actual imports from China	Partner imports of Hong Kong domestic products	Partner direct import from China	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	China reported balance of trade with partners	Partner reported balance of trade with China	Partners balance of trade with Hong Kong after adjustment	Hong Kong reported balance of trade with partners	Partner reported balance of trade with Hong Kong	cif/fob ratio, China to partner	cif/fob ratio, Hong Kong to partner
36094 28	16	6																			
Croatia	443	422	39	15	30	8	41	472	16	449	4.8	0.0	27.2	415	323	-628	12	33	-50	1.069	1.052
Romania	873	843	46	13	37	6	48	936	14	903	3.5	0.0	16.8	723	730	-865	5	19	-20	1.074	1.038
Yugoslavia	281	272	12	3	12	3	13	301	3	292	3.1	0.0	25.6	261	150	-540	1	10	-11	1.075	1.048
Ukraine	839	793	56	7	56	10	59	901	7	853	5.4	0.0	17.8	577	403	-69	-433	42	61	1.073	1.049
Russian Federation	5,741	5,450	376	40	361	65	392	6,237	42	5,928	5.1	0.0	18.0	-3,688	-3,009	3,635	-63	-124	8	1.078	1.041
Kazakhstan	997	991	6	1	10	5	6	1,081	1	1,075	0.5	0.0	48.2	-354	-74	1,006	1	7	-4	1.078	1.082
Kyrgyz Republic	199	199	1	0	0	0	1	215	0	215	0.2	0.0	8.5	153	381	-41	0	-1	1	1.075	1.077
Argentina	1,235	1,103	172	27	151	16	181	1,301	30	1,161	10.7	0.0	10.9	-1,550	-2,407	1,229	-1	-50	-11	1.057	1.045
Brazil	4,101	3,415	978	252	778	82	1,035	4,336	280	3,611	16.7	0.0	10.6	-2,999	-5,030	1,388	-72	-61	-328	1.061	1.041
Chile	1,841	1,572	302	24	303	28	325	1,957	30	1,667	14.6	0.0	9.3	-1,503	-1,989	1,363	-28	122	-155	1.067	1.057
Colombia	950	874	94	15	86	9	100	1,010	17	929	7.9	0.0	10.8	807	453	-1,096	5	72	-83	1.068	1.054
Ecuador	528	501	34	6	34	7	36	564	7	535	5.0	0.0	20.0	462	250	-654	-2	24	-29	1.072	1.064
Peru	628	581	65	15	55	6	70	668	17	617	7.5	0.0	11.7	-668	-1,108	468	-3	24	-42	1.069	1.064
Paraguay	388	280	131	14	124	14	138	405	17	290	27.9	0.0	11.3	321	175	-442	7	112	-135	1.047	1.041
Venezuela	448	388	95	32	73	11	103	479	36	414	13.4	0.0	15.6	-381	-146	-199	30	61	-112	1.071	1.065
Uruguay	199	180	27	6	22	3	29	209	7	189	9.6	0.0	13.0	93	99	-61	-3	-5	-12	1.056	1.051
Costa Rica	230	212	40	21	25	6	43	247	23	227	8.0	0.0	25.2	-653	-489	-107	-17	-246	61	1.079	1.069
Guatemala	517	429	125	34	110	21	137	556	39	459	17.0	0.0	18.7	495	349	-185	32	113	-157	1.079	1.078
Panama	1,301	810	538	23	548	49	570	1,378	29	854	37.7	0.0	8.9	1,289	2,171	-509	5	567	-531	1.068	1.051
Cuba	443	438	8	2	5	0	8	475	2	470	1.1	0.0	7.9	220	135	-510	-1	-6	-3	1.076	1.037
Algeria	991	985	24	19	7	2	26	1,064	20	1,059	0.5	0.0	24.8	742	711	-667	18	8	-32	1.078	1.047
Egypt Arab Rep	1,154	1,061	136	34	112	17	147	1,235	38	1,134	8.1	0.0	15.5	1,008	1,151	-569	15	67	-115	1.071	1.068
Iran Islamic Rep	1,926	1,894	78	37	36	4	84	2,035	41	2,001	1.6	0.0	11.8	-2,972	-2,021	-1,404	-45	-79	26	1.065	1.044
Israel	1,547	1,197	1,134	485	495	134	1,160	1,661	497	1,289	22.6	0.0	27.1	537	558	-695	-606	-252	83	1.071	1.021
Jordan	682	536	197	45	185	37	217	730	52	570	21.4	0.0	19.7	649	534	-642	40	196	-207	1.081	1.078
Lebanon	597	572	42	10	38	12	45	642	11	615	4.3	0.0	30.7	583	471	-705	6	38	-30	1.077	1.059
Morocco	744	723	39	17	26	5	42	794	19	772	2.8	0.0	18.7	594	720	-695	-10	-84	35	1.071	1.064
Nigeria	1,108	1,032	140	48	99	21	150	1,184	53	1,101	6.9	0.0	21.5	924	1,253	-676	37	100	-197	1.066	1.061
Saudi Arabia	3,183	2,949	304	48	266	27	317	3,463	49	3,213	7.4	0.0	10.2	-3,822	-4,749	4,477	-118	-76	83	1.089	1.046
Syrian Arab Republic	611	581	42	8	37	5	44	658	8	625	5.0	0.0	14.8	583	662	-434	6	41	-34	1.071	1.031
Tunisia	241	231	20	9	13	3	21	256	9	246	4.1	0.0	20.5	212	211	-266	7	7	-26	1.071	1.046
Turkey	3,825	3,461	535	102	422	52	561	4,046	112	3,660	9.5	0.0	12.3	3,442	2,205	-4,152	16	358	-420	1.062	1.042
Yemen	373	370	5	2	3	1	6	403	3	401	0.7	0.0	16.5	-906	-1,007	936	-7	-10	4	1.083	1.061
Benin	237	234	6	1	4	0	6	257	1	254	1.3	0.0	12.0	129	466	33	0	6	-6	1.080	1.051
Ghana	497	482	26	9	18	3	28	533	10	516	3.0	0.0	16.3	446	430	-345	4	-86	40	1.077	1.071
Kenya	385	334	70	17	60	8	76	410	19	355	13.2	0.0	13.6	356	313	-176	8	17	-44	1.073	1.072
Mozambique	58	55	10	6	4	1	10	64	6	60	5.8	0.0	19.0	20	31	-19	5	-8	-14	1.094	1.058
Malawi	21	20	3	2	2	1	3	23	2	22	4.8	0.0	39.9	20	19	-25	1	2	-5	1.077	1.064
Madagascar	315	236	87	2	91	10	96	337	4	250	25.2	0.0	11.3	301	134	-171	-2	695284		1.089	1.083

Appendix Table C. Adjusted Estimates of Bilateral Trade Between China, Hong Kong and their Partner Countries, Westbound Flows, 2004, in Millions of U.S. Dollars

Country Name	Partner actual exports to China	Partner direct exports to China	Partner total exports to Hong Kong	Partner exports remain in Hong Kong	Partner re-exports to China via Hong kong	Hong Kong re-export markup	Hong Kong total imports from partners	China actual imports from partners	Hong Kong retained imports from partner	China direct import from partner	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	Partners balance of trade with Hong Kong after adjustment	cif/fob ratio, partner to China	cif/fob ratio, partner to Hong Kong
Variable in the model	TX(s,CH)	DX(s,CH)	TX(s,Hk)	DX(s,Hk)	RX(s,CH)	RXM(s,CH)	TM(s,HK)	TM(s,CH)	DM(s,HK)	DM(s,CH)	(RX(r,CH)-RXM(r,CH))/TX(r,CH)	SDX(s)	RXM(CH,r)/RX(CH,r)	TX(CH,r)-TX(r,CH)	TX(HK,r)-TX(r,HK)	cif(s,CH)	cif(s,HK)
United States	41,608	36,530	14,696	8,046	5,795	587	15,231	42,644	8,415	37,345	12.3	0.0	10.1	-137,570	-2,144	1.027	1.023
Canada	6,106	5,625	1,103	573	585	78	1,180	6,738	621	6,222	8.2	0.0	13.3	-7,588	-64	1.089	1.054
Mexico	1,447	1,412	163	60	309	271	176	1,494	67	1,455	2.5	0.0	87.7	-7,096	-208	1.046	1.059
Australia	8,562	8,153	1,818	1,190	581	142	2,005	9,383	1,336	8,935	5.0	0.0	24.4	-3,171	267	1.090	1.082
New Zealand	1,158	1,085	332	249	131	50	370	1,243	277	1,160	6.8	0.0	38.2	-517	141	1.069	1.089
Japan	91,099	72,899	34,044	12,459	20,625	1,755	35,918	94,958	13,547	75,841	20.5	0.0	8.5	4,883	10,690	1.045	1.040
Korea Rep	66,461	60,218	13,805	6,557	6,730	235	14,399	70,106	6,877	63,512	9.6	0.0	3.5	38,437	4,196	1.059	1.033
Taiwan China	70,126	57,608	25,431	11,655	14,773	1,759	26,615	73,013	12,313	59,812	18.3	0.0	11.9	54,248	9,457	1.053	1.043
Singapore	20,102	17,782	15,796	12,918	2,471	64	16,371	20,768	13,390	18,326	11.8	0.0	2.6	3,947	10,543	1.039	1.033
Macao	228	219	285	122	12	2	302	242	129	232	4.2	0.0	19.2	-1,473	-219	1.062	1.050
Indonesia	6,748	6,076	1,409	632	826	103	1,537	7,428	703	6,691	10.5	0.0	12.4	1,791	349	1.113	1.083
Malaysia	20,183	16,714	6,792	2,510	4,169	594	7,129	20,864	2,726	17,255	17.6	0.0	14.3	10,268	1,189	1.050	1.033
Philippines	11,068	9,237	4,453	2,024	1,879	16	4,594	11,226	2,119	9,350	16.7	0.0	0.9	7,115	814	1.019	1.023
Thailand	10,585	8,519	4,776	2,217	2,447	230	5,188	11,376	2,460	9,116	20.6	0.0	9.4	3,113	743	1.086	1.066
Vietnam	1,036	938	442	287	111	6	482	1,156	316	1,050	9.9	0.0	5.8	-2,306	-363	1.117	1.112
Cambodia	15	14	6	5	1	0	7	17	6	16	7.4	0.0	2.7	-643	-228	1.095	1.010
Bangladesh	69	33	96	56	45	7	103	76	61	37	53.2	0.0	15.3	-2,219	-146	1.094	1.046
India	6,751	6,222	3,657	2,035	621	66	3,746	7,558	2,090	6,985	8.0	0.0	10.6	-189	1,173	1.113	1.015
Sri Lanka	26	23	71	58	11	8	74	30	60	26	13.4	0.0	68.7	-914	-283	1.133	1.053
Pakistan	639	253	571	171	428	11	638	680	206	253	63.7	0.0	2.7	-1,119	121	1.081	1.077
Austria	1,457	1,351	471	337	134	23	508	1,506	367	1,393	7.5	0.0	17.3	-224	127	1.037	1.068
Belgium	3,122	2,828	1,848	1,206	387	80	1,957	3,278	1,280	2,963	9.6	0.0	20.6	-4,116	678	1.053	1.051
Germany	28,130	25,421	5,039	1,879	2,923	126	5,293	29,019	2,032	26,180	9.8	0.0	4.3	-6,970	-267	1.033	1.034
Denmark	1,364	915	599	140	677	210	641	1,408	163	932	33.6	0.0	31.0	-1,041	-208	1.040	1.041
Spain	1,582	1,419	465	272	180	10	497	1,646	294	1,472	10.6	0.0	5.3	-6,894	-98	1.044	1.052
Finland	2,907	2,713	414	124	253	51	441	2,997	140	2,789	6.8	0.0	20.0	-21	-180	1.034	1.042
France	7,455	6,935	2,565	1,706	592	50	2,691	7,690	1,794	7,137	7.1	0.0	8.5	-8,832	1,052	1.033	1.040
United Kingdom	5,128	4,309	4,547	2,560	970	119	4,731	5,297	2,681	4,429	16.3	0.0	12.2	-17,245	-529	1.036	1.033
Greece	83	77	57	48	11	5	60	87	50	81	7.0	0.0	46.2	-1,487	-20	1.057	1.043
Ireland	1,145	892	1,010	676	484	226	1,035	1,171	693	912	22.4	0.0	46.7	-2,035	408	1.025	1.021
Italy	6,572	5,201	3,616	2,030	1,537	93	3,869	6,811	2,200	5,334	21.5	0.0	6.1	-6,157	1,450	1.042	1.051
Luxembourg	131	130	18	15	13	13	18	137	16	136	0.5	0.0	94.8	-24	-8	1.044	1.033
Netherlands	3,039	2,753	1,316	978	301	4	1,375	3,147	1,025	2,844	9.6	0.0	1.5	-16,426	-622	1.038	1.038
Portugal	210	196	68	45	21	6	71	218	47	203	7.0	0.0	29.3	-356	12	1.055	1.042
Sweden	2,945	2,687	573	282	286	21	598	3,041	299	2,772	8.9	0.0	7.3	662	-258	1.033	1.033
Switzerland	3,135	2,666	3,406	2,271	516	29	3,536	3,233	2,360	2,738	15.3	0.0	5.7	1,127	1,782	1.035	1.034
Norway	1,006	958	186	132	70	21	194	1,048	139	998	4.8	0.0	29.4	-507	-4	1.042	1.028
Cyprus	2	2	7	6	1	1	8	2	7	2	25.7	0.0	60.4	-199	-10	1.062	1.127
Czech Republic	429	379	151	76	55	4	160	443	82	391	11.9	0.0	6.9	-2,129	-27	1.037	1.050
Estonia	30	30	5	5	1	1	6	33	5	32	1.7	0.0	63.2	-253	-22	1.065	1.066
Hungary	424	414	81	6	93	83	83	434	6	423	2.5	0.0	88.3	-2,545	-335	1.023	1.019
Lithuania	9	9	2	2	0	0	3	10	2	10	1.2	0.0	42.9	-302	-4	1.090	1.087
Latvia	10	10	1	1	0	0	1	11	1	11	0.0	0.0	100.0	-100	-6	1.057	1.031
Malta	132	88	80	30	53	8	82	132	31	88	33.6	0.0	15.5	50	21	1.010	1.013
Poland	501	491	34	24	17	6	36	518	25	508	2.0	0.0	37.9	-2,376	-43	1.033	1.044
Slovak Republic	93	91	16	13	3	2	16	97	14	96	1.8	0.0	50.3	-275	2	1.053	1.048
Slovenia	42	37	13	8	6	1	14	44	9	39	11.8	0.0	17.6	-144	2	1.054	1.050
Albania	3	3	0	0	0	0	0	3	0	3	0.0	0.0	0.0	-61	0	1.092	1.017

Country Name	Partner actual exports to China	Partner direct exports to China	Partner total exports to Hong Kong	Partner exports remain in Hong Kong	Partner re-exports to China via Hong kong	Hong Kong re-export markup	Hong Kong total imports from partners	China actual imports from partners	Hong Kong retained imports from partner	China direct import from partner	Re-exports as percent of partner total exports to China	Statistical discrepancies	Hong Kong re-export markup rate	Partners balance of trade with China after adjustment	Partners balance of trade with Hong Kong after adjustment	cif/fob ratio, partner to China	cif/fob ratio, partner to Hong Kong
Bulgaria	35	34	6	4	4	3	6	38	4	37	2.9	0.0	70.9	-371	-8	1.072	1.038
Croatia	28	28	3	2	0	0	3	30	3	29	0.9	0.0	27.2	-415	-12	1.087	1.046
Romania	151	144	24	7	21	13	26	162	8	154	4.7	0.0	64.9	-723	-5	1.086	1.056
Yugoslavia	19	19	4	2	1	1	4	20	3	20	0.5	0.0	88.9	-261	-1	1.051	1.047
Ukraine	261	251	451	440	16	4	478	281	466	269	4.2	0.0	28.1	-577	433	1.085	1.058
Russian Federation	9,428	9,281	308	103	195	35	344	10,131	125	9,965	1.6	0.0	17.9	3,688	63	1.077	1.068
Kazakhstan	1,351	1,351	0	0	4	4	0	1,425	0	1,425	0.0	0.0	100.0	354	-1	1.058	1.067
Kyrgyz Republic	46	46	0	0	1	1	0	49	0	49	0.0	0.0	100.0	-153	0	1.051	1.018
Argentina	2,786	2,661	158	28	149	20	170	3,240	36	3,107	4.5	0.0	13.4	1,550	1	1.148	1.046
Brazil	7,099	6,780	695	324	352	14	756	8,231	363	7,885	4.6	0.0	4.1	2,999	72	1.150	1.058
Chile	3,344	3,248	149	52	108	2	176	3,490	68	3,381	3.1	0.0	1.7	1,503	28	1.043	1.087
Colombia	143	137	20	10	7	1	21	148	11	142	3.9	0.0	14.0	-807	-5	1.035	1.055
Ecuador	66	65	9	8	2	1	9	71	9	70	1.1	0.0	64.3	-462	2	1.065	1.083
Peru	1,296	1,281	33	17	18	1	40	1,397	23	1,380	1.3	0.0	6.2	668	3	1.079	1.134
Paraguay	67	62	12	8	6	0	15	72	9	67	7.9	0.0	0.9	-321	-7	1.084	1.134
Venezuela	829	824	11	2	6	0	13	936	3	931	0.6	0.0	7.9	381	-30	1.075	1.076
Uruguay	106	95	20	9	11	0	21	111	10	100	9.9	0.0	4.2	-93	3	1.047	1.058
Costa Rica	883	783	183	38	118	16	191	887	43	784	11.5	0.0	13.5	653	17	1.010	1.024
Guatemala	22	22	2	2	1	1	2	25	2	25	0.0	0.0	100.0	-495	-32	1.105	1.050
Panama	12	11	19	18	1	0	21	13	19	12	6.5	0.0	20.2	-1,289	-5	1.072	1.065
Cuba	223	223	11	3	1	0	11	232	4	232	0.3	0.0	32.9	-220	1	1.070	1.028
Algeria	248	248	1	1	0	0	1	261	1	261	0.0	0.0	0.0	-742	-18	1.050	1.000
Egypt Arab Rep	146	138	27	19	10	1	28	171	19	162	5.8	0.0	14.4	-1,008	-15	1.157	1.052
Iran Islamic Rep	4,898	4,873	114	83	31	4	121	5,176	88	5,148	0.5	0.0	14.0	2,972	45	1.116	1.049
Israel	1,010	822	1,629	1,091	216	25	1,648	1,037	1,106	840	18.3	0.0	11.8	-537	606	1.031	1.005
Jordan	32	32	5	4	1	1	5	35	5	35	0.6	0.0	75.6	-649	-40	1.054	1.057
Lebanon	14	11	8	4	4	0	8	15	4	12	25.2	0.0	6.0	-583	-6	1.072	1.034
Morocco	149	79	116	27	82	11	119	157	29	85	47.6	0.0	13.0	-594	10	1.054	1.017
Nigeria	184	177	18	10	8	1	19	193	11	186	3.5	0.0	10.9	-924	-37	1.050	1.047
Saudi Arabia	7,005	6,836	336	166	195	10	371	7,470	185	7,280	2.6	0.0	5.2	3,822	118	1.068	1.086
Syrian Arab Republic	29	28	3	2	0	0	3	32	2	31	1.2	0.0	27.9	-583	-6	1.100	1.069
Tunisia	29	26	5	2	6	3	6	33	2	31	8.6	0.0	55.6	-212	-7	1.160	1.095
Turkey	382	343	130	87	47	4	143	427	97	383	10.9	0.0	9.1	-3,442	-16	1.110	1.085
Yemen	1,279	1,277	12	9	2	1	13	1,343	10	1,342	0.1	0.0	23.7	906	7	1.051	1.086
Benin	108	108	0	0	0	0	0	117	0	117	0.0	0.0	0.0	-129	0	1.086	1.064
Ghana	52	51	87	5	0	0	110	58	5	57	0.7	0.0	6.1	-446	-4	1.111	1.272
Kenya	29	9	30	9	24	3	33	30	11	9	71.6	0.0	11.4	-356	-8	1.073	1.074
Mozambique	38	34	5	1	7	3	7	43	2	38	11.0	0.0	36.6	-20	-5	1.157	1.113
Malawi	1	1	1	1	0	0	1	1	1	1	0.0	0.0	100.0	-20	-1	1.103	1.064
Madagascar	14	11	8	4	4	1	8	16	4	12	26.3	0.0	13.9	-301	2	1.114	1.080
Sudan	2,176	2,176	18	18	5	5	20	2,285	20	2,285	0.0	0.0	100.0	1,664	11	1.045	1.078
Togo	85	85	2	1	1	0	2	93	2	93	0.3	0.0	62.8	-83	-5	1.104	1.057
Tanzania	93	87	21	5	16	9	23	97	7	90	7.6	0.0	54.7	-114	1	1.037	1.077
Uganda	57	57	37	35	17	17	39	61	37	61	0.1	0.0	99.6	-23	33	1.071	1.076
South Africa	1,674	1,534	536	282	183	37	576	1,819	312	1,669	8.6	0.0	20.1	-2,019	90	1.076	1.053
Zambia	76	76	10	1	1	1	10	77	1	77	0.0	0.0	100.0	24	-4	1.020	1.017
Zimbabwe	139	139	9	6	3	2	10	149	6	149	0.3	0.0	79.2	86	3	1.071	1.048
Other reporting countries	2,721	2,683	156	57	111	71	167	2,932	62	2,891	1.5	0.0	63.7	-1,418	-211	1.079	1.061
No reporting partner countries	972	854	1,368	1,183	191	61	1,405	1,030	1,209	897	12.9	0.0	32.3	-5,770	330	1.082	1.041
Partner Total	486,940	422,710	163,146	82,889	74,322	7,566	171,195	510,607	87,931	442,837	13.7		10.2	-124,774	40,312	1.049	1.061
Hong Kong, China	16,896	83,653	0	0	0	0	0	17,133	0	84,903	0.0	0.0	0.0	-2,862	0	1.015	na
China	0	0	98,499	19,758	0	0	100,494	0	20,173	0	0.0	0.0	0.0	0	2,862	na	1.017
World Total	503,836	506,363	261,645	102,647	74,322	7,566	271,688	527,740	108,104	527,740	11.9	0.0	13.0	-127,636	43,174	1.047	1.053