## APPENDIX 1

### Accounting Relationship Formula

---

**1**    $VOM(i,r) * qo(i,r) =$           $\forall ie TRAD$
$\forall re REG$

$VDM(i,r) * qds(i,r) + VST(i,r) * qst(i,r) + \sum_{jsREG} VXMD(i,r,s) * qxs(i,r,s)$

$+ VOM(i,r) * tradslack(i,r)$

**2**    $VIM(i,r) * qim(i,r) =$           $\forall ie TRAD$
$\forall re REG$

$\sum_{jsPROD} VIFM(i,j,r) * qfm(i,j,r) + VIPM(i,r) * qpm + VIGM(i,r) * qgm(i,r)$

**3**    $VDM(i,r) * qds(i,r) =$           $\forall ie TRAD$
$\forall re REG$

$\sum_{jsPROD} VIFM(i,j,r) * qfd(i,j,r) + VDPM(i,r) * qpd(i,r) + VDGM(i,r)$
$* qgd(i,r)$

**4**    $VOM(i,r) * qo(i,r) =$           $\forall ie ENDWN$
$\forall re REG$

$\sum_{jsPROD} VFM(i,j,r) * qfe(i,j,r) + VOM(i,r) * endwslack(i,r)$

**5**    $goes(i,j,r) = qfe(i,j,r)$           $\forall ie ENDWN$
$\forall je PROD$
$\forall re REG$

**6**    $VOA(j,r) * ps(j,r) =$           $\forall ie PROD$
$\forall re REG$

$\sum_{jsENDW} VFA(i,j,r) * pfe(i,j,r) + \sum_{jsTRAD} VFA(i,j,r) * pf(i,j,r) + VOA(j,r) *$
$profitslack(j,r)$

**7**    $VT * pt = \sum_{jsTRADCOMM} \sum_{jsREG} VST(i,r) * pm(i,r)$

**8**    $PRIVEX(r) * yp(r) =$           $\forall re REG$
$INCOME(r) * y(r) - SAVE(r) * [psave + qsave(r) - \sum_{jsTRAD} VGA(i,r)$

$* [pg(i,r) + qg(i,r)]$

---

**9**    $INCOME(r) * y(r) =$           $\forall re REG$

$\sum_{jeENDW} VOA(i,r) [ps(i,r) + qo(i,r)] - VDEP(r) * [pcgds(r) + kb(r)]$

$+ \sum_{jeNSAV} VOM(i,r) * [pm(i,r) + qo(i,r)] - VOA(i,r) * [ps(i,r) + qo(i,r)]$

$+ \sum_{jeENDW} \sum_{jePROD} VFA(i,j,r) [pfe(i,j,r) + qfe(i,j,r)] - VFM(i,j,r) * [pm(i,r) + qfe(i,j,r)]$

$+ \sum_{jeENDWS} \sum_{jePROD} VFA(i,j,r) * [pfe(i,j,r) + qfe(i,j,r)] - VFM(i,j,r) * [pmes(i,j,r) + qfe(i,j,r)]$

$+ \sum_{jePROD} \sum_{ieTRAD} VIFA(i,j,r) * [pfm(i,j,r) + qfm(i,j,r)] - VIFM(i,j,r) * [pim(i,r) + qfm(i,j,r)]$

$+ \sum_{jePROD} \sum_{ieTRAD} VDFA(i,j,r) * [pfd(i,j,r) + qfd(i,j,r)] - VDFM(i,j,r) * [pm(i,r) + qfd(i,j,r)]$

$+ \sum_{ieTRAD} VIPA(i,r) * [ppm(i,r) + qpm(i,r)] - VIPM(i,r) * [pim(i,r) + qpm(i,r)]$

$+ \sum_{ieTRAD} VDPA(i,r) * [ppd(i,r) + qpd(i,r)] - VDPM(i,r) * [pm(i,r) + qpd(i,r)]$

$+ \sum_{ieTRAD} VIGA(i,r) * [pgm(i,r) + qgm(i,r)] - VIGM(i,r) * [pim(i,r) + qgm(i,r)]$

$+ \sum_{ieTRAD} VDGA(i,r) * [pgi(i,r) + pgd(i,r)] - VDGM(i,r) * [pm(i,r) + qgd(i,r)]$

$+ \sum_{ieTRAD} \sum_{seREG} VXWD(i,r,s) * [pfob(i,r,s) + qxs(i,r,s)] - VXMD(i,r,s) * [pm(i,r) + qxs(i,r,s)]$

$+ \sum_{ieTRAD} \sum_{seREG} VIMS(i,s,r) * [pms(i,r,s) + qxs(i,s,r)] - VIWS(i,s,r) * [pcif(i,s,r) + qxs(i,s,r)]$

$+ INCOME(r) * incomeslack(r)$

**10**    $ke(r) = INVKERATIO(r) * qcgds(r) + [1.0 - INVKERATIO(r) * kb(r)$      $\forall re REG$

**11**    $globalcgds = \sum_{reREG} [REGINV(r)/GLOBINV] * qcgds(r) -$
$[VDEP(r)/GLOBINV(r) * kb(r)$

**12**    $walras\_sup = globalcgds$

**13**    $GLOBINV * walras\_dem = \sum_{leREG} SAVE(r) * qsave(r)$

**14**    $walras\_sup = walras\_dem + walraslack$

## APPENDIX 2

**Price Linkage Formula**

15    $ps(i,r) = to(i,r) + pm(i,r)$         $\forall ie\,NSAVE$
                                                 $\forall re\,REG$

16    $Pfe(i,j,r) = tf(i,j,r) + pm(i,j,r)$     $\forall ie\,ENDWM$
                                                 $\forall je\,PROD$
                                                 $\forall re\,REG$

17    $Pfe(i,j,r) = tf(i,j,r) + pmes(i,j,r)$     $\forall ie\,ENDWM$
                                                 $\forall je\,PROD$
                                                 $\forall re\,REG$

18    $ppd(i,r) = tpd(i,r) + pm(i,r)$       $\forall ie\,TRAD$
                                                 $\forall re\,REG$

19    $pgd(i,r) = tgd(i,r) + pm(i,r)$       $\forall ie\,TRAD$
                                                 $\forall re\,REG$

20    $pfd(i,j,r) = tfd(i,j,r) + pm(i,r)$     $\forall ie\,TRAD$
                                                 $\forall je\,PROD$
                                                 $\forall re\,REG$

21    $ppm(i,r) = tpm(i,r) + pim(i,r)$      $\forall ie\,TRAD$
                                                 $\forall re\,REG$

22    $pgm(i,r) = tgm(i,r) + pim(i,r)$      $\forall ie\,TRAD$
                                                 $\forall re\,REG$

23    $pfm(i,j,r) = tfm(i,j,r) + pim(i,r)$    $\forall ie\,TRAD$
                                                 $\forall je\,PROD$
                                                 $\forall re\,REG$

24    $pms(i,r,s) = tm(i,s) + tms(i,r,s) + pcif(i,r,s)$    $\forall ie\,TRAD$
                                                 $\forall re\,REG$
                                                 $\forall se\,REG$

25    $pr(i,s) = pm(i,s) - pim(i,s)$        $\forall ie\,TRAD$
                                                 $\forall se\,REG$

26    $pcif(i,r,s) = FOBSHR(i,r,s) * pfob(i,r,s) + TRNSHR(i,r,s) * pt$    $\forall ie\,TRAD$
                                                 $\forall re\,REG$
                                                 $\forall se\,REG$

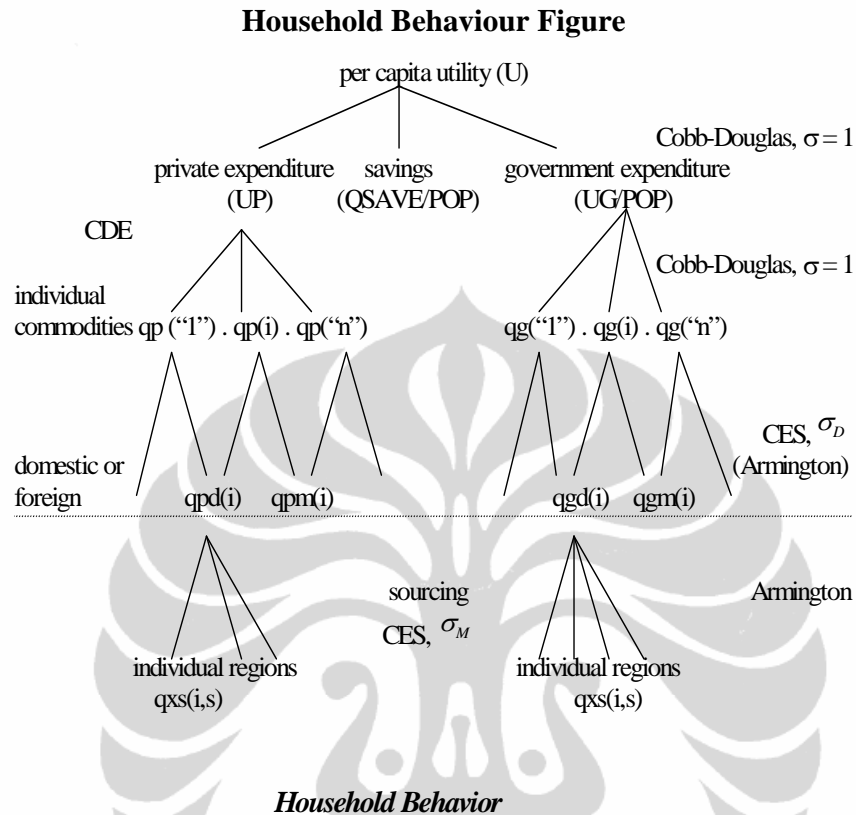27    $pfob(i,r,s) = pm(i,r) - tx(i,r) - txs(i,r,s)$    $\forall ie\,TRAD$
                                                 $\forall re\,REG$
                                                 $\forall se\,REG$

## APPENDIX 3

| *Composite Imports Nest* | | |
|---|---|---|
| 28 | $pim(i,s) = \sum\limits_{jsREG} MSHRS\ (i,k,s) * pms(i,k,s)$ | $\forall ieTRAD$ <br> $\forall seREG$ |
| 29 | $qxs(i,r,s) = qim(i,s) - \sigma_M(i) * [pms(i,r,s)-pim(i,s)]$ | $\forall ieTRAD$ <br> $\forall reREG$ <br> $\forall seREG$ |

## Producers Behaviour

### *Behavioral Equations for Producers*

**Composite Intermediates nest:**

| 30 | $pf(i,j,r) = FMSHR(i,j,r) * pfm(i,j,r) + [1 - FMSHR(i,j,r) * pfd(i,j,r)]$ | $\forall ieTRAD$ <br> $\forall jePROD$ <br> $\forall reREG$ |
|---|---|---|
| 31 | $qfm(i,j,s) = qf(i,j,s) - \sigma_D(i) * [pfm(i,j,s) - pf(i,j,s)]$ | $\forall ieTRAD$ <br> $\forall jePROD$ <br> $\forall seREG$ |
| 32 | $qfd(i,j,s) = qf(i,j,s) - \sigma_D(i) * [pfd(i,j,s) - pf(i,j,s)]$ | $\forall ieTRAD$ <br> $\forall jePROD$ <br> $\forall seREG$ |

**Value added nest**

| 33 | $pva(i,r) = \sum\limits_{jsENDW} SVA\ (k,j,r) * [pfe(k,j,r) - afe(k,j,r)]$ | $\forall iePROD$ <br> $\forall reREG$ |
|---|---|---|
| 34 | $qfe(i,j,r) + afe(i,j,r) = qva(j,r) - \sigma_{VA}(i) * [pfe(i,j,r) - afe(i,j,r) - pva(j,r)]$ | $\forall ieENDW$ <br> $\forall jePROD$ <br> $\forall reREG$ |

**Total output nest:**

| 35 | $qva(i,r) + ava(i,r) = qo(i,r) - ao(i,r)$ | $\forall iePROD$ <br> $\forall reREG$ |
|---|---|---|
| 36 | $qf(i,j,r) + af(i,j,r) = qo(i,r) - ao(i,r)$ | $\forall ieTRAD$ <br> $\forall jePROD$ <br> $\forall reREG$ |

**Zero Profits (revised)**

| (6) | $VOA\ (j,r) * [ps(j,r) + ao(j,r)] = \sum\limits_{jsENDWCOMM} VFA\ (i,j,r) *[pfa(i,j,r) - afe(i,j,r) -ava(j,r)] * \sum\limits_{jsENDWCOMM} VFA\ (i,j,r) *[pf(i,j,r) - af(i,j,r) + VOA\ (j,r) *profustock\ (j,r)$ | $\forall jePROD$ <br> $\forall reREG$ |
|---|---|---|

APPENDIX 4

## Household Behaviour Figure



Per capita utility (U) tree diagram showing private expenditure (UP), savings (QSAVE/POP), government expenditure (UG/POP), with Cobb-Douglas σ = 1; individual commodities qp("1") . qp(i) . qp("n"); CDE; qg("1") . qg(i) . qg("n"); domestic or foreign qpd(i) qpm(i), qgd(i) qgm(i); CES, σ_D (Armington); sourcing CES, σ_M; Armington; individual regions qxs(i,s).

*Household Behavior*

| | | |
|---|---|---|
| | *Agregate Utility* | |
| 37 | $INCOME(r) * u((r) = PRIVEXP(r) * up(r) + GOVEXP(r) * [ug(r) - pop(r)] + SAVE(r) * [qsave(r) - pop(r)]$ | $\forall reREG$ |
| | *Regional savings:* | |
| 38 | $qsave(r) = y(r) - psave + saveslack(r)$ | $\forall reREG$ |
| | *Government purchase* | $\forall reREG$ |
| 39 | $ug(r) = y(r) - pgov(r) - govslack(r)$ | $\forall reREG$ |
| | *Demand for composite goods* | |
| 40 | $pgov(r) = \sum_{jsTRADCOMM} (VGA(i,r)/GOVEXP(r) * pg(i,r)$ | $\forall reREG$ |
| 41 | $qg(i,r) = ug(r) - [pg(i,r) - pgov(r)]$ | $\forall ieTRAD$ $\forall reREG$ |
| | *Composite tradeables:* | |
| 42 | $pg(i,s) = GMSHR(i,s) * pgm(i,s) + [1 - GMSHR(i,s) * pgd(i,s)$ | $\forall ieTRAD$ $\forall seREG$ |
| 43 | $qgm(i,s) = qg(i,s) + \sigma_D(i) * [pg(i,s) - pgm(i,s)]$ | $\forall ieTRAD$ $\forall seREG$ |
| 44 | $qgd(i,s) = qg(i,s) + \sigma_D(i) * [pg(i,s) - pgd(i,s)]$ | $\forall ieTRAD$ $\forall seREG$ |

**APPENDIX 5**

**Global Invesment**

Table 2.7. *Demand for Regional Investment Goods*

---

$$\sum_{reREG} [REGINV(r) \qquad\qquad : PCGDS(r) * QCGDS(r)$$

$$- \underline{VDEP(r)}] \qquad\qquad : PCGDS(r) * KB(r)$$

$$= GLOBINV \qquad\qquad : PSAVE * GLOBALCGDS$$

$$= \sum_{reREG} SAVE(r) \qquad\qquad : PSAVE * QSAVE(r)$$

Capital Stocks

$$VKB(r) \qquad\qquad : PCGDS(r) * KB(r)$$

$$+ REGINV(r) \qquad\qquad : PCGDS(r) * QCGDS(r)$$

$$- \underline{VDEP(r)} \qquad\qquad : PCGDS(r) * DEPR(r) KB(r)$$

$$= VKE(r)$$

---

| | **Investment Equation** | |
|---|---|---|
| | *Equations of notational convenlence* | |
| 52 | $ksvces~(r) = \sum_{heENDWC} [VOA(h,r)/ \sum_{keENDWC} VOA~(k,r) * qo~(h,r)$ | $\forall reREG$ |
| 53 | $rental~(r) = \sum_{heENDWC} [VOA(h,r)/ \sum_{keENDWC} VOA~(k,r) * ps~(h,r)$ | $\forall reREG$ |
| 54 | $gcgds~(r) = \sum_{heCGDS} [VOA(h,r)/ REGIVN(r)] * qo~(h,r)$ | $\forall reREG$ |
| 55 | $pcgds~(r) = \sum_{heCGDS} [VOA(h,r)/ REGIVN(r)] * ps~(h,r)$ | $\forall reREG$ |
| 56 | $kb~(r) = ksvcs~(r)$ | $\forall reREG$ |
| | *Rate of Return equations* | |
| 57 | $rorc~(r) = GENERATIO(R) * [rental(r) - pcgds~(r)]$ | $\forall reREG$ |
| 58 | $rore~(r) = RORFLEX~(r) * [ke(r) - kb~(r)]$ | $\forall reREG$ |
| | $(11\,') RORDELTA * rore~(r) + (1 - RODELTA)* \{(REGIVN~(r) /NETINV~(r)] GCGDS(r) - VDEP~(r)/ NETINV~(r)] * kb~(r) = RORDELTA * rorg + (1 - RORDELTA) * globalcgds + cgdslack~(r)$ | $\forall reREG$ |
| 59 | $RORDELTA * globalcgds + (1 - RORDELTA) * rorg = RORDELTA * \sum_{jsREG} \{(REGINV(r) / GLOBINV] * cgds~(r) - [VDEP~(r)/ GLOBINV] * kb~(r) + (1 - RORDELTA * \sum_{jsREG} \{(REGINV(r) / GLOBINV] * rore~(r)$ | |
| | *Price of Savings* | |
| 60 | $psave = \sum_{rsREG} NETINV(r) / GLOBINV *pcgds~(r)$ | |

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**APPENDIX 6**

**Global Transportation**

**Global Shipping Industry**

| 7' | $$VT * pt = \sum_{i \in TRAD} \sum_{r \in REG} VST(i,r) * pm(i,r)$$ | |
|---|---|---|
| 61 | $qst(i,r) = qt + [pt - pm(i,r)]$ | $\forall i \in TRAD$ $\forall r \in REG$ |
| 62 | $$VT * qt = \sum_{i \in TRAD} \sum_{r \in REG} \sum_{s \in REG} VTWR(i,r,s) * [qxs(i,r,s) - atr(i,r,s)]$$ | |
| 26' | $pcif(i,r,s) = FOBSHR(i,r,s) * pfob(i,r,s) + TRNSHR(i,r,s) * [pt - atr(i,r,s)]$ | $\forall i \in TRAD$ $\forall r \in REG$ $\forall s \in REG$ |

Sumber : Hertel (1992)

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# APPENDIX 7

**GTAP, Data Commodity Aggregation**

| No | Sector Aggregation | Commodity |
|---|---|---|
| 1 | Agriculture | Forestry |
|  |  | Fishing |
| 2 |  | Wool, silk-worm cocoons |
| 3 | Mining | Coal |
| 4 |  | Oil |
| 5 |  | Gas |
| 6 |  | Mineral nec |
| 7 |  | Petroleum, coal products |
| 8 |  | Mineral products nec |
| 9 | Food | Paddy rice |
| 10 |  | Wheat |
| 11 |  | Cereal grains nec |
| 12 |  | Vegetables, fruit, nuts |
| 13 |  | oil seeds |
| 14 |  | Sugar cane, sugar beet |
| 15 |  | Plant-based fibres |
| 16 |  | Crops nec |
| 17 |  | Cattle sheep, goats, horses |
| 18 |  | Animal products nec |
| 19 |  | Raw milk |
| 21 |  | Meat: cattle, sheep, goats, horse |
| 22 |  | Meat products nec |
| 23 |  | Vegetables oils and fats |
| 24 |  | Dairy products |
| 25 |  | Processed rice |
| 26 |  | Sugar |
| 27 |  | Food products nec |
| 28 |  | Beverages and tobacco products |
| 29 | Chemrubplas | Chemical, rubber, plastic prods |
| 30 | Metal | Ferrous metals |
| 31 |  | Metals nec |
| 32 |  | Metal products |
| 33 | Electronic | Electronic equipment |
| 34 | Transportation | Motor vehicles and parts |
| 35 |  | Transport equipment nec |
| 36 | Machinery | Machinery and equipment nec |
| 37 | Other Manufacture | Textiles |
| 38 |  | Wearing apparel |
| 39 |  | Leather products |
| 40 |  | Wood products |
| 41 |  | Paper produts, publishing |
| 42 |  | Manufactures nec |
| 43 | Services | Electricity |
| 44 |  | Gas Manufacture, distribution |
| 45 |  | Water |
| 46 |  | Construction |
| 47 |  | Trade |
| 48 |  | Transport nec |
| 49 |  | Sea transport |
| 50 |  | Air transport |
| 51 |  | Communication |
| 52 |  | Financial service nec |
| 53 |  | Insurance |
| 54 |  | Business service nec |
| 55 |  | Recreation and other services |
| 56 |  | PubAdmin/Defence/Health/Educat |
| 57 |  | Dwellings |

Source: GTAP version 6

# APPENDIX 8

**GTAP, Data Region Aggregation**

| No | Region Aggregation | Country |
|---|---|---|
| 1 | Indonesia | Indonesia |
| 2 | Turkey | Turkey |
| 3 | REASEAN | Malaysia |
| 4 | | Philippines |
| 5 | | Singapore |
| 6 | | Thailand |
| 7 | | Vietnam |
| 8 | | Rest of Southeast Asia |
| 9 | NAFTA | Canada |
| 10 | | United States |
| 11 | | Mexico |
| 12 | EU | Austria |
| 13 | | Belgium |
| 14 | | Denmark |
| 15 | | Finland |
| 16 | | France |
| 17 | | Germany |
| 18 | | United Kingdom |
| 19 | | Greece |
| 20 | | Ireland |
| 21 | | Italy |
| 22 | | Luxembourg |
| 23 | | Netherlands |
| 24 | | Portugal |
| 25 | | Spain |
| 26 | | Sweden |
| 27 | | Bulgaria |
| 28 | | Cyprus |
| 29 | | Czech Republic |
| 30 | | Hungary |
| 31 | | Malta |
| 32 | | Poland |
| 33 | | Romania |
| 34 | | Slovakia |
| 35 | | Slovenia |
| 36 | | Estonia |
| 37 | | Latvia |
| 38 | | Lithuania |
| 39 | ROW (Rest of the World) | Australia |
| 40 | | New Zealand |
| 41 | | Rest of Oceania |
| 42 | | China |
| 43 | | Hongkong |
| 44 | | Japan |
| 45 | | Korea |
| 46 | | Taiwan |
| 47 | | Rest of East Asia |
| 48 | | Bangladesh |
| 49 | | India |
| 50 | | Sri Langka |
| 51 | | Rest of South Asia |
| 52 | | Rest of North America |
| 53 | | Colombia |
| 54 | | Peru |
| 55 | | Venezuela |
| 56 | | Rest of Andean Pact |
| 57 | | Argentina |
| 58 | | Brazil |
| 59 | | Chile |
| 60 | | Uruguay |
| 61 | | Rest of South America |
| 62 | | Central America |
| 63 | | Rest of FTAA |
| 64 | | Rest of Caribbean |
| 65 | | Switzerland |
| 66 | | Rest of EFTA |
| 67 | | Rest of Europe |
| 68 | | Albania |
| 69 | | Croatia |
| 70 | | Russian Federation |
| 71 | | Rest of Former Soviet Union |
| 72 | | Rest of Middle East |
| 73 | | Morocco |
| 74 | | Tunisia |
| 75 | | Rest of North Africa |
| 76 | | Botswana |
| 77 | | South Africa |
| 78 | | Rest of South African CU |
| 79 | | Malawi |
| 80 | | Mozambique |
| 81 | | Tanzania |
| 82 | | Zambia |
| 83 | | Zimbabwe |
| 84 | | Rest of SADC |
| 85 | | Madagascar |
| 86 | | Uganda |
| 87 | | Rest of Sub-Saharan Africa |

Source: GTAP version 6

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**APPENDIX 9**

Trade – Bilateral Exports at World Prices data

| VXWD | 1 Indonesia | 2 Turkey | 3 REASEAN | 4 NAFTA | 5 EU | 6 ROW | Total |
|---|---|---|---|---|---|---|---|
| 1 Agriculture | 41.9 | 109.5 | 543.4 | 2134.8 | 8408.4 | 9237.1 | 20475.1 |
| 2 Mining | 3811 | 6515.6 | 23479.3 | 124248.9 | 199319.1 | 207814.7 | 565188.6 |
| 3 Foods | 3779.5 | 2410.7 | 17475 | 72613.4 | 194809.7 | 172779.3 | 463867.6 |
| 4 Chemrubplas | 5815.9 | 6148.4 | 27508.6 | 141474.8 | 304242.3 | 219424.7 | 704614.6 |
| 5 Metal | 2792.9 | 4892.1 | 20721.1 | 87043.4 | 178492.8 | 136922.1 | 430864.4 |
| 6 Electronic | 2806.6 | 2473.6 | 99757.7 | 214960.9 | 243452.5 | 253515.7 | 816966.9 |
| 7 Transports | 3209.8 | 3490.1 | 16244.8 | 252485.4 | 304589.5 | 154653.5 | 734673.1 |
| 8 Machinery | 6269.7 | 6649.3 | 51696 | 270206 | 374377.5 | 312639.9 | 1021838.3 |
| 9 OtherMnfcs | 3811.7 | 3854.1 | 21708.8 | 253957.6 | 346654.2 | 273912.6 | 903898.9 |
| 10 Svces | 11184.4 | 5677.1 | 50212.4 | 224839.7 | 553610.2 | 402318 | 1247841.8 |
| Total | 43523.3 | 42220.6 | 329346.9 | 1643964.9 | 2707956 | 2143217.5 | 6910229 |

Source: GTAP version 6
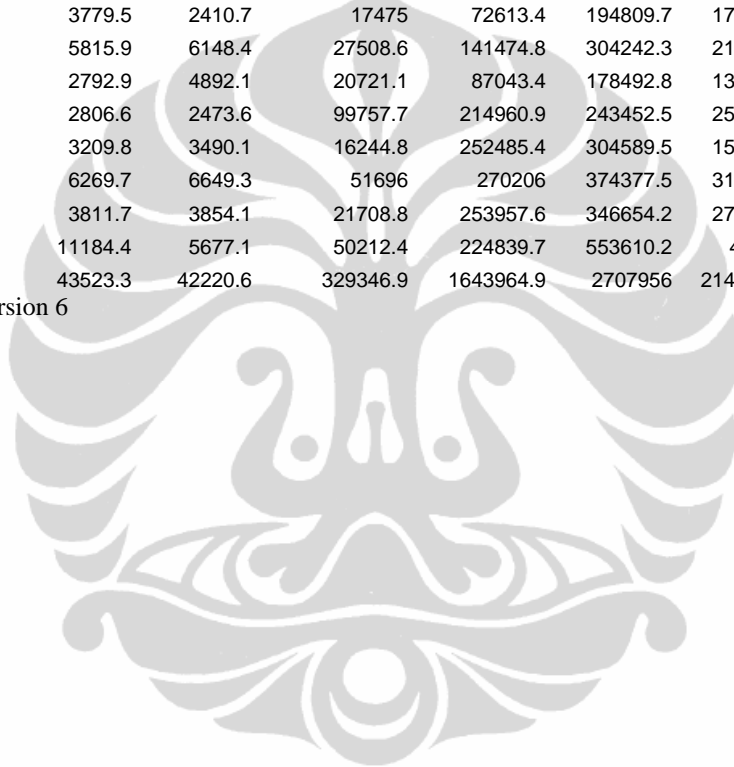
**APPENDIX 10**

Trade – Bilateral Imports at World Prices data

| VIWS | 1 Indonesia | 2 Turkey | 3 REASEAN | 4 NAFTA | 5 EU | 6 ROW | Total |
|---|---|---|---|---|---|---|---|
| 1 Agriculture | 46.1 | 119 | 634.9 | 2403.2 | 9480.1 | 10548.1 | 23231.4 |
| 2 Mining | 4074.8 | 7109.9 | 25455.3 | 132713.4 | 214060.7 | 228380.3 | 611794.5 |
| 3 Foods | 4113.7 | 2579.3 | 18937.9 | 77572.4 | 206643.5 | 186911 | 496757.8 |
| 4 Chemrubplas | 6190.2 | 6464 | 29045.8 | 146031.7 | 313204.1 | 230551.3 | 731487.1 |
| 5 Metal | 2994.5 | 5219.8 | 21997.5 | 90892.2 | 185570.5 | 144847.1 | 451521.8 |
| 6 Electronic | 2887.2 | 2527 | 101411.4 | 218675.1 | 247412.4 | 258373.3 | 831286.4 |
| 7 Transports | 3357.7 | 3584.9 | 16651.8 | 256954.5 | 309728.7 | 158611.4 | 748889.1 |
| 8 Machinery | 6489.8 | 6868.8 | 53312.2 | 276979.1 | 383263.7 | 322737.3 | 1049651 |
| 9 OtherMnfcs | 4076.6 | 4120.9 | 22991.1 | 266770.9 | 362897.2 | 291353.7 | 952210.3 |
| 10 Svces | 11184.4 | 5677.1 | 50212.4 | 224839.7 | 553610.2 | 402318 | 1247842 |
| Total | 45415 | 44270.8 | 340650.4 | 1693832 | 2785871 | 2234632 | 7144671 |

Source: GTAP version 6

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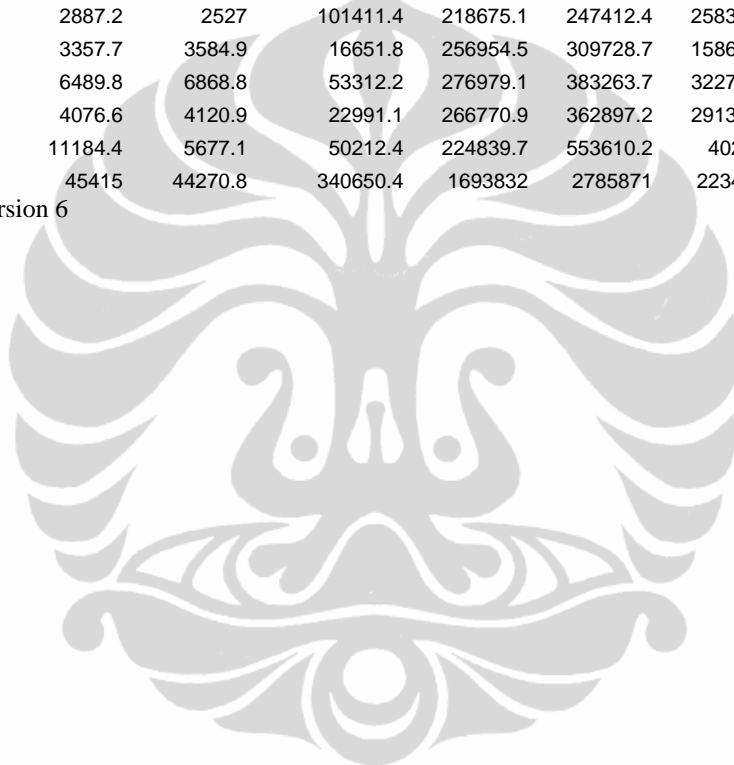
**APPENDIX 11**

Protection – Ordinary Import Duty Data

| TFRV | 1 Indonesia | 2 Turkey | 3 REASEAN | 4 NAFTA | 5 EU | 6 ROW | Total |
|---|---|---|---|---|---|---|---|
| 1 Agriculture | 0.3 | 0.4 | 17.6 | 5.2 | 59.7 | 327.9 | 411.2 |
| 2 Mining | 99.5 | 19.2 | 688.8 | 1173 | 919.3 | 9564.6 | 12464.3 |
| 3 Foods | 205.9 | 436.2 | 3008 | 3769.1 | 10748.6 | 44296.1 | 62463.9 |
| 4 Chemrubplas | 289.6 | 82.8 | 1518.3 | 2572.2 | 2163.3 | 16265 | 22891.1 |
| 5 Metal | 177.1 | 165.1 | 1215 | 1270.8 | 1755.4 | 8562.1 | 13145.5 |
| 6 Electronic | 60.4 | 27.2 | 825.5 | 1263.6 | 1183.2 | 9839.4 | 13199.3 |
| 7 Transports | 323.3 | 28.1 | 2602.2 | 3456.2 | 3396.5 | 15710.6 | 25516.8 |
| 8 Machinery | 197.9 | 38.9 | 1800.3 | 3305.7 | 2266.3 | 20982.4 | 28591.5 |
| 9 OtherMnfcs | 278.1 | 117.2 | 1944 | 13045.4 | 6038.1 | 31008.9 | 52431.8 |
| 10 Svces | 0 | 0 | 0 | 0 | 18.1 | 31.6 | 49.8 |
| Total | 1632.1 | 915.1 | 13619.6 | 29861.1 | 28548.5 | 156588.7 | 231165.1 |

Source: GTAP version 6

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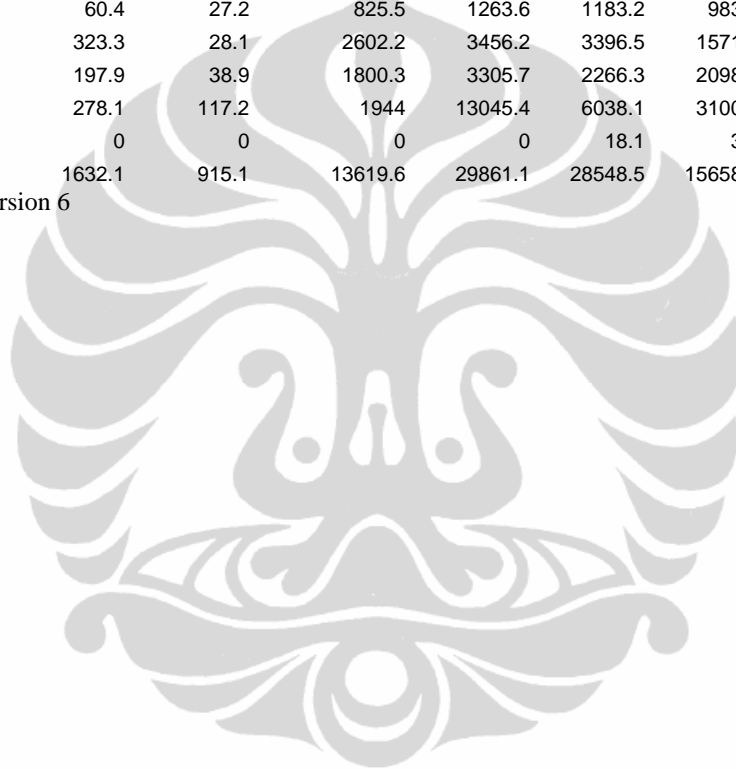
## APPENDIX 12

**Trade index between Indonesia and Turkey**

| No | HS | Product | RCA | TII | TSI | IIT |
|----|----|---------|-----|-----|-----|-----|
| **Main product import Indonesia from Turkey** | | | | | | |
| 1 | 27 | Mineral fuels, oils & product of th | 0.016 | 0.003 | **0.807** | 0.193 |
| 2 | 84 | Nuclear reactors, boilers, mchy & m | 0.352 | 0.073 | -0.829 | 0.171 |
| 3 | 85 | Electrical mchy equip parts thereof | **1.460** | 0.303 | -0.375 | **0.625** |
| 4 | 72 | Iron and steel. | 0.826 | 0.172 | **0.799** | 0.201 |
| 5 | 87 | Vehicles o/t railw/tramw roll-stock | 0.066 | 0.014 | -0.790 | 0.210 |
| 6 | 29 | Organic chemicals. | **24.415** | **5.072** | **0.123** | **0.877** |
| 7 | 39 | Plastics and articles thereof. | 0.166 | 0.035 | -0.975 | 0.025 |
| 8 | 73 | Articles of iron or steel. | 0.023 | 0.005 | -0.802 | 0.198 |
| 9 | 31 | Fertilisers. | **3.706** | 0.770 | **1.000** | 0.000 |
| 10 | 10 | Cereals | 0.000 | 0.000 | **0.000** | 0.000 |
| 11 | 88 | Aircraft, spacecraft, and parts thereof | 0.000 | 0.000 | **0.000** | 0.000 |
| 12 | 52 | Cotton. | **1.884** | 0.391 | -0.692 | 0.308 |
| 13 | 23 | Residues & waste from the food industry, animal fodder | 0.000 | 0.000 | **0.000** | 0.000 |
| 14 | 47 | Pulp of wood/of other fibrous cellu | **125.680** | **26.108** | -0.663 | 0.337 |
| 15 | 90 | Optical, photo, cine, meas, checkin | 0.204 | 0.042 | -0.870 | 0.130 |
| 16 | 28 | Inorgn chem; compds of prec mtl, r | **7.176** | **1.491** | **0.372** | **0.628** |
| 17 | 40 | Rubber and articles thereof. | 0.177 | 0.037 | -0.992 | 0.008 |
| 18 | 89 | Ships, boats and floating structure | 0.000 | 0.000 | **0.000** | 0.000 |
| 19 | 76 | Aluminium and articles thereof. | 0.010 | 0.002 | -0.764 | 0.236 |
| 20 | 38 | Miscellaneous chemical products. | 0.073 | 0.015 | -0.995 | 0.005 |
| **Main product export Indonesia to Turkey** | | | | | | |
| 1 | 27 | Mineral fuels, oils & product of th | 0.000 | 0.000 | -1.000 | 0.000 |
| 2 | 72 | Iron and steel. | 0.237 | 0.147 | -0.893 | 0.107 |
| 3 | 84 | Nuclear reactors, boilers, mchy & m | 0.159 | 0.099 | -0.333 | **0.667** |
| 4 | 85 | Electrical mchy equip parts thereof | 0.423 | 0.263 | -0.116 | **0.884** |
| 5 | 87 | Vehicles o/t railw/tramw roll-stock | **1.264** | 0.785 | **0.757** | 0.243 |
| 6 | 39 | Plastics and articles thereof. | **5.782** | **3.592** | **0.993** | 0.007 |
| 7 | 71 | Natural/cultured pearls, prec stone | 0.354 | 0.220 | **0.932** | 0.068 |
| 8 | 30 | Pharmaceutical products. | 0.194 | 0.120 | **0.830** | 0.170 |
| 9 | 29 | Organic chemicals. | **1.513** | 0.940 | -0.175 | **0.825** |
| 10 | 90 | Optical, photo, cine, meas, checkin | 0.035 | 0.022 | **0.071** | **0.929** |
| 11 | 74 | Copper and articles thereof. | 0.000 | 0.000 | -0.998 | 0.002 |
| 12 | 48 | Paper & paperboard; art of paper pu | **2.268** | **1.409** | **0.994** | 0.006 |
| 13 | 76 | Aluminium and articles thereof. | 0.088 | 0.054 | **1.000** | 0.000 |
| 14 | 52 | Cotton. | **4.922** | **3.058** | **0.431** | **0.569** |
| 15 | 73 | Articles of iron or steel. | 0.189 | 0.118 | **0.773** | 0.227 |
| 16 | 40 | Rubber and articles thereof. | **2.402** | **1.492** | **0.996** | 0.004 |
| 17 | 10 | Cereals | 0.000 | 0.000 | **0.000** | 0.000 |
| 18 | 38 | Miscellaneous chemical products. | **1.999** | **1.242** | **0.746** | 0.254 |
| 19 | 55 | Man-made staple fibres. | **17.881** | **11.109** | **0.963** | 0.037 |
| 20 | 28 | Inorgn chem; compds of prec mtl, r | 0.115 | 0.071 | -0.935 | 0.065 |

Source: WITS (World Integrated Trade Solution), Proceed

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**APPENDIX 13**

## Propose Liberalization

| HS | Description | RCA | TII | TSI | IIT | Import Turkey from World |
|----|-------------|-----|-----|-----|-----|--------------------------|
| 24 | Tobacco and manufactured tobacco su | 2.74 | 1.70 | -0.64 | 0.36 | 391,693.70 |
| 11 | Prod.mill.indust; malt; starches; | 1.31 | 0.81 | -0.99 | 0.01 | 25,232.37 |
| 15 | Animal/veg fats & oils & their clea | 1.09 | 0.68 | 1.00 | 0.00 | 1,657,559.96 |
| 08 | Edible fruit and nuts; peel of citr | 0.65 | 0.40 | 0.91 | 0.09 | 319,224.55 |
| 02 | Meat and edible meat offal | 0.46 | 0.29 | 1.00 | 0.00 | 905.88 |
| 20 | Prep of vegetable, fruit, nuts or o | 0.16 | 0.10 | -0.17 | 0.83 | 87,946.64 |
| 09 | Coffee, tea, matï and spices. | 0.14 | 0.09 | 0.80 | 0.20 | 72,743.83 |
| 14 | Vegetable plaiting materials; veget | 0.14 | 0.09 | 1.00 | 0.00 | 4,919.70 |
| 17 | Sugars and sugar confectionery. | 0.11 | 0.07 | 1.00 | 0.00 | 86,840.49 |
| 13 | Lac; gums, resins & other vegetable | 0.10 | 0.06 | 1.00 | 0.00 | 25,678.60 |
| 18 | Cocoa and cocoa preparations. | 0.08 | 0.05 | 1.00 | 0.00 | 284,165.82 |
| 05 | Products of animal origin, nes or | 0.01 | 0.01 | 1.00 | 0.00 | 28,540.14 |
| 16 | Prep of meat, fish or crustaceans, | 0.01 | 0.01 | 0.38 | 0.62 | 2,473.61 |
| 21 | Miscellaneous edible preparations. | 0.01 | 0.01 | -0.88 | 0.12 | 387,175.56 |
| 12 | Oil seed, oleagi fruits; miscell gr | 0.01 | 0.01 | 0.56 | 0.44 | 1,464,811.74 |
| 10 | Cereals | 0.00 | 0.00 | 0.00 | 0.00 | 2,137,329.30 |
| 23 | Residues & waste from the food indu | 0.00 | 0.00 | -1.00 | 0.00 | 772,971.48 |
| 07 | Edible vegetables and certain roots | 0.00 | 0.00 | -1.00 | 0.00 | 400,250.36 |
| 19 | Prep.of cereal, flour, starch/milk; | 0.00 | 0.00 | -1.00 | 0.00 | 151,282.20 |
| 04 | Dairy prod; birds' eggs; natural ho | 0.00 | 0.00 | -1.00 | 0.00 | 126,943.24 |
| 22 | Beverages, spirits and vinegar. | 0.00 | 0.00 | 0.00 | 0.00 | 111,785.32 |
| 06 | Live tree & other plant; bulb, root | 0.00 | 0.00 | 0.00 | 0.00 | 57,749.80 |
| 01 | Live animals | 0.00 | 0.00 | 0.00 | 0.00 | 41,447.71 |

Source: WITS (World Integrated Trade Solution), Proceed

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