

# **A Base Case Scenario for the Dynamic GTAP Model**

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## **1. Introduction**

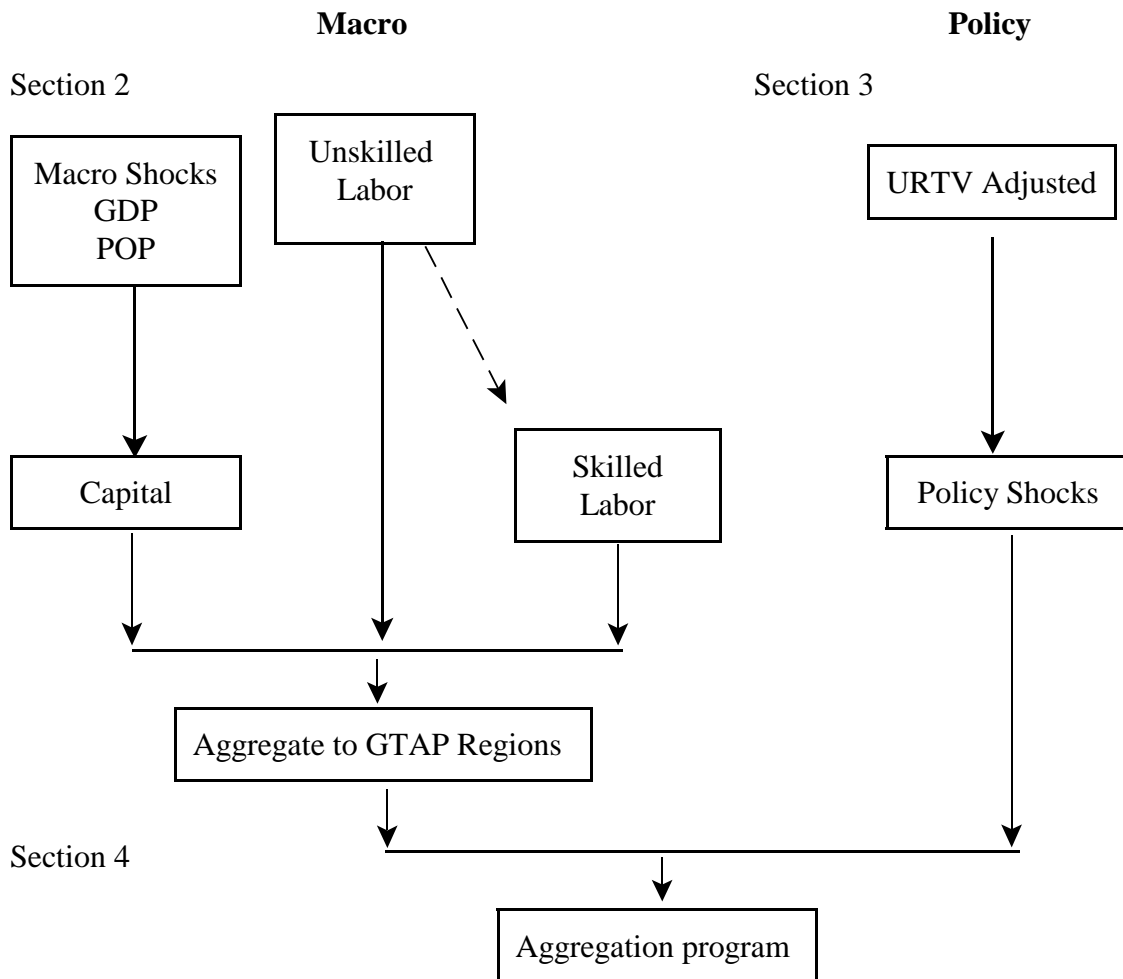
The increasing interest in dynamic models and in particular the development of the Dynamic GTAP model at the Center for Global Trade Analysis has highlighted the need to develop a base case scenario depicting how the world economy might be expected to change over the next 20 years. The purpose of this paper is to provide an outline of how such a base case scenario has been created for use with the GTAP data base and the dynamic GTAP model. This document also shows how the base case aggregation program can be used to obtain a base case scenario under alternative assumptions. Although the base case program is specifically designed with the Dynamic GTAP model in mind, it is general enough to be used with other models.

The base case scenario should reflect as closely as possible the changes expected to occur in the world economy. These changes in the world economy are grouped into two areas: the first deals with the macro economic forecasts of each country and the second deals with expected policy changes. These two distinct areas are discussed in turn in sections 2 and 3. In section 4 we then bring the macro projections and the policy changes together and develop a program which allows us to aggregate these forecasts to obtain a base case scenario which corresponds to a particular GTAP aggregation. Figure 1 provides a diagrammatic overview of how the base case scenario has been constructed. This paper also follows this same structure outlined in Figure 1.

## **2. Macro Projections**

The aim here was to use existing macro projections to obtain macro projections and the corresponding growth rates for the years 1995 to 2019 and for a set of standard countries. At the time of writing this document the standard country list consisted of the 202 countries listed in Table A1. The macro projections of interest here include gross domestic product, gross domestic investment, capital stocks, population, skilled labor and unskilled labor. The first sub-section contains a description of the source data, including the macro projections and macro data. In the second sub-section, these projections are used to obtain projections for the complete set of standard countries and years of interest.

**Figure 1**  
**Overview of Structure for Creating Base Case**



## 2.1 Data Sources for Projections

### 2.1.2 Projections

Projections were obtained for gross domestic product, gross domestic investment, population, skilled labor and unskilled labor. The source of these projections and a description are given below:

1. *Gross domestic product, gross domestic investment and population data and projections* were available for 133 countries/regions for the period 1992 to 2007 (projections 1998 to 2007). These projections were obtained by combining historical and forecast data provided by the World Bank (Global Economic Perspectives Data Base).

2. *Labor force projections* in the form of number of male and female workers were available for 205 countries/regions. Projections were provided on a five yearly basis from 1990 to 2020. These projections were obtained from the World Bank. Before proceeding data on male and female workers were added together to obtain projections for the total labor force.
3. *Skilled labor projections* were obtained from two sources.
  - a) For the less developed countries projections of the share of secondary and tertiary educated labor as a proportion of the population were obtained for 71 developing countries. These were five yearly projections from 1990 to 2020. These projections were obtained from Ahuja and Filmer (1995).
  - b) For the developed economies a single yearly growth rates for skilled labor (according to tertiary education) was available for 25 developed countries. These were obtained from the World Bank.

### ***2.1.2 Other Data Required***

In addition to projections, macro data for the base or initial year (1995) was also collected for all standard countries. For GDP and population, data was obtained for each of the countries from either from the World Bank or from the CIA World Factbook. Other macro variables, including gross domestic investment and capital stocks, were either obtained directly from the World Bank or GDP shares were used to estimate their value. This base year data was used to scale data, fill in missing values and obtain capital stock projections. In this paper, this data is usually referred to as the base year data.

Base year shares of skilled labor in total labor were also estimated for the 25 developing countries for which only a single growth rate was available. These shares were derived from the GTAP data base as the value of skilled labor as a proportion of total labor.

## **2.2 Missing Data**

Invariably the projections obtained from the various sources listed above will be incomplete and in some cases incompatible. Some processing is required to get them into a common format and ensure that there are values for all countries and for all years of interest. In this section, the assumptions made and the steps taken to obtain a complete set of projections are outlined. By complete we mean they cover all the years and countries of interest.

The macro projections are split into three groups which are discussed in turn below (see Figure 1). First are the gross domestic product, gross domestic investment and population projections, then the unskilled labor projections and finally the skilled labor projections.

### ***2.2.1 Gross Domestic Product, Gross Domestic Investment and Population Projections***

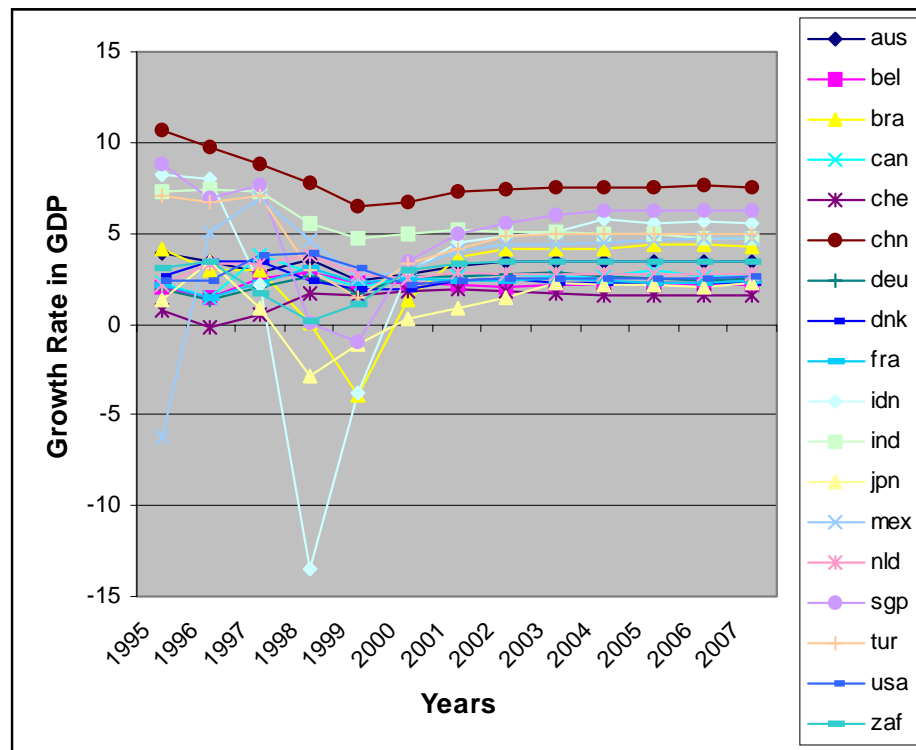
A number of steps were undertaken to obtain gross domestic product, gross domestic investment and population projections for all standard countries. These included extrapolating, disaggregating regions, filling in projections for missing countries, scaling and finally calculating yearly growth rates. Each of these stages is discussed in turn below.

### Extrapolation

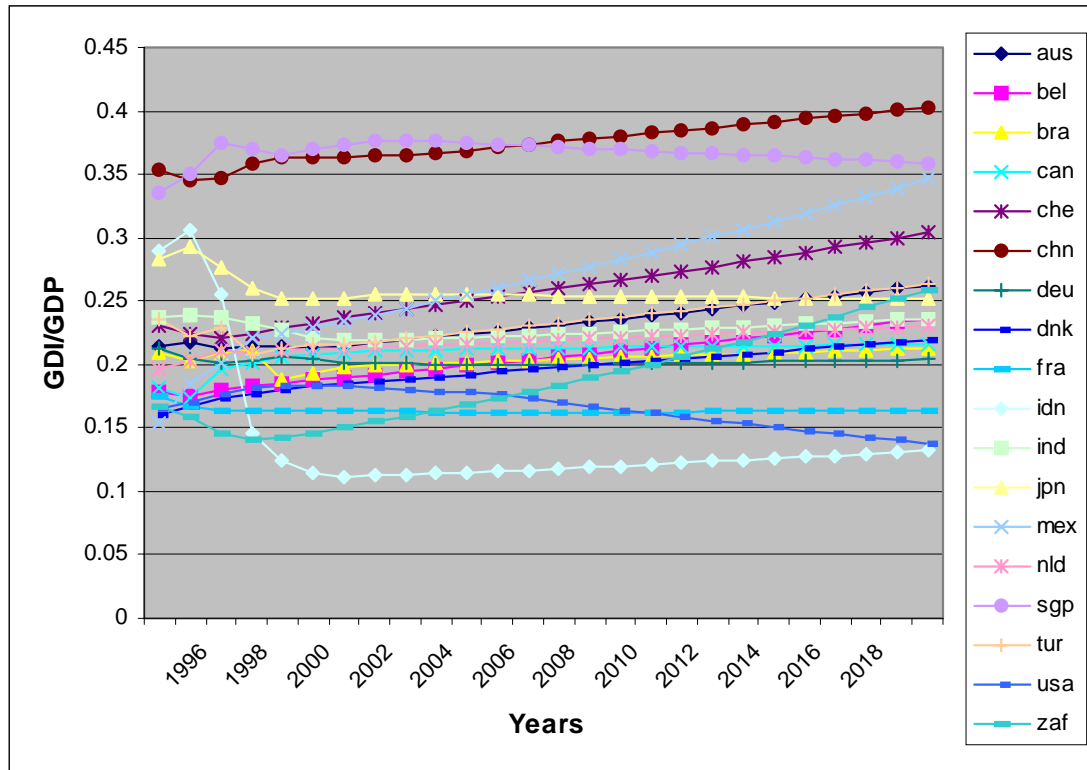
The first step in obtaining macro projections for all the standard countries was to determine the growth rate between the final years for which projections data (2006-2007) were available. This final growth rate was then used to extrapolate projections out to the year 2019, so that from 2007 onwards the growth rates are constant.

Two checks were undertaken to ascertain the validity of this extrapolation method. Firstly, growth rates were graphed to ensure that any variability in growth rates had diminished by 2007. Growth rates for a set of countries can be seen in Figure 2. Secondly, the ratio of gross domestic investment to gross domestic product was calculated to ensure that this ratio did not change dramatically after 2007. The GDI/GDP ratios for a set of countries are depicted in Figure 3.

**Figure 2**  
**Ratio of Gross Domestic Investment to Gross domestic Product**



**Figure 3**  
**Ratio of Gross Domestic Investment to Gross domestic Product**



*Disaggregating Regions*

While most of the projections data were for individual countries, there were a limited number of cases where projections data were provided on a regional basis. For example, projections were obtained for the entire Belgium-Luxembourg region, rather than for these two countries individually. For these composite regions the projections are divided across the countries contained in those regions using the relevant base year share, for example the GDP projections of Belgium-Luxembourg are divided using macro data on their respective levels of GDP in the base year and population projections are divided according to macro data on population. This assumes that the growth rates for all countries within a region are the same as the growth rate for the region as a whole. For example, Belgium is assumed to grow at the same rate as Luxembourg, where the rate is determined by the growth rate of the entire Belgium-Luxembourg region.

*Filling in missing countries*

The next step involved providing projections for those standard countries where projections data was not obtainable. Projections are filled by taking the total projected value for all countries for which data was available and multiplying it by the ratio of the missing country's base year value of the macro variable of interest to the total value for all countries for which projections data was available. For example to fill gross domestic investment for a particular country X, the total projected value of GDI for each given year is multiplied by the ratio of

county X's GDI in the base year to total GDI in the base year of all countries for which projections data was available (1).

$$GDI_t(X) = \sum_{s \in PROJ} GDI_t(r) \times \frac{GDI_{BASE}(X)}{\sum_{s \in PROJ} GDI_{BASE}(s)} \quad (1)$$

where: s ranges over the sub-set of countries for which projections data was obtained.

Thus growth rates for those countries where data was not available were assumed to equal the average growth rate of the countries for which data was obtained.

### *Scaling*

The projections data obtained from the World Bank were based on 1992 prices. In addition projections for the base year (1995) were often inconsistent with those obtained from the GTAP database. In order to ensure consistency between the projections and the GTAP database all projections were scaled so that the base year projection was equal to the equivalent base year data collected.

### *Calculate growth rates*

Finally these projections were converted into yearly growth rates. Both the projections and growth rates for all standard countries and all years of interest are kept as inputs for the next stage.

The program used to determine these projections was set up in such a way that other projections, such as capital stock or human capital projections, could be incorporated (by altering `mprjdat.txt` and `mprjset.txt`). The program assumes that projections are yearly and that base year values for these macro variables are available (or were estimated previously) for scaling purposes. In addition the years of interest (currently 1995 to 2019) may be altered (`years.txt`).

### **2.2.2 Capital Stocks Projections**

Capital stock projections could not be obtained directly from data sources and thus had to be estimated. Projections for capital stocks ( $K_t(r)$ ) were determined by adding projected gross domestic investment ( $GDI(r)$ ) to the previous years projected capital ( $K_{t-1}(r)$ ) stock less depreciation, where depreciation is 4 percent.

$$K_t(r) = K_{t-1}(r) \times (1 - DEPR(r)) + GDI(r) \quad (2)$$

This program assumes that gross domestic investment projections and base year capital stocks are available for all standard countries, i.e. it uses the projected GDI from section 2.2.1. The capital stock projections and growth rates for all standard countries and all years of interest are included with the GDP, GDI and population projections and growth rates.

### ***2.2.3 Unskilled Labor Projections***

Unskilled labor force projections were based on total labor force projections. As for gross domestic product, gross domestic investment and population, a number of steps were undertaken to obtain unskilled labor force projections for all standard countries. These included disaggregating regions, filling in projections for missing countries and filling in the missing years.

#### *Disaggregating Regions*

While most of the labor projections data obtained from the World Bank were for individual countries, there were a limited number of cases where labor projections were provided on a regional basis. For example, labor projections were obtained for a region 'other Europe'. For these composite regions the labor projections were divided across the countries contained in those regions using population shares. This assumes that the growth rates for all countries within the region are the same as the growth rate for the region as a whole.

#### *Filling in missing countries*

The next step involved providing labor force projections for those standard countries where no labor force projections data was obtainable. Labor projections were filled by taking the total projected labor force for all countries for which data was available and multiplying it by the ratio of the missing country's population in the base year (obtained from the additional macro data collected) to the total population of the countries for which data was available, in the base year. Thus growth rates for those countries where data was not available were assumed to equal the average growth rate of the countries for which data was obtained.

#### *Filling in the missing years*

Labor force projections were available in five year intervals from 1990 to 2020. Thus it was necessary to fill in projections for the intermediate years. In order to do this it was first necessary to find the average yearly growth rate for each of these five year periods. It is assumed that growth rates for a particular country are equal for all years within the 5 year interval. These growth rates were then used to obtain projections for each year.

### ***2.2.4 Skilled Labor***

As mentioned above skilled labor force projections were obtained in two formats. Projected shares of labor force were obtained for the less developed countries while single growth rates were obtained for a number of developed economies. In order to obtain a complete set of projections a number of steps had to be taken to both sets of data. For less developed countries missing years in the skilled labor shares need to be filled and projections determined. For the developed economies growth rates need to be converted into projections. Once the two sets are in a common format the two sets of projections are combined and any missing countries filled. Each of these stages is discussed in turn below.

Data for less developed economies is available for both tertiary and secondary education. In the base case program tertiary education is used to estimate skilled labor, however projections and growth rates are determined for both tertiary and secondary education. The use of tertiary



education as the estimate for skilled labor can be altered to secondary education if this were preferred (sklabset .txt).

#### *Less Developed Countries*

Projections for less developed countries are initially given as projected shares of the labor force. Shares are available in five year intervals from 1990 to 2020. In order to obtain projections two steps are undertaken.

Firstly, it is necessary to fill in projections for the intermediate years. In order to do this it was first necessary to find the average yearly growth rate for each of these five year periods. It was then assumed that within a given five year period yearly growth rates of shares for a particular country are equal. These growth rates are then used to obtain the projected shares for each year.

Secondly, the shares are then used to determine the projected number of people with a tertiary and secondary education. This is found by multiplying the projected share with the projected labor force determined above.

$$SKLAB_t(i, r) = SKLABSHR_t(i, r) \times LAB_t(r) \quad (3)$$

where: i = secondary and tertiary.

#### *Developed Countries*

For developing countries, the original data was in the form of a single growth rate. It is assumed that this growth rate is the same for all years of interest. Projections were obtained by firstly determining the initial value of skilled labor and then allowing skilled labor to accumulate at that growth rate.

For each developed economy r, the initial value of skilled labor was determined by multiplying the share of skilled labor in total labor for the base period (obtained from the GTAP data base) and multiplying this by the regions labor force in the base year.

$$SKLAB_{BASE}(r) = DCSKLABSHR_{BASE}(r) \times LAB_{BASE}(r) \quad (3)$$

Having obtained the initial level of skilled labor, yearly projections are then determined by allowing the initial level to grow at the rate provided in the original data.

#### *Combining and Filling*

The next step involved providing skilled labor force projections for those standard countries where no skilled labor projections data was available. Skilled labor projections were filled by taking the projected value of labor for that country and multiplying it by the total average share of skilled labor in total labor. The total average share of skilled labor in total labor uses both the projections for the developed and less developed countries.

## **2.3 Aggregation to GTAP Sectors**

### ***2.3.1 Aggregation***

At this stage we have projections for gross domestic product, gross domestic investment, capital stocks, population, labor force (or unskilled labor) and unskilled labor for all standard countries and for each year from 1995 to 2019. For GTAP data base users and in particular for the GTAP-Dyn model the projections and growth rates are then aggregated to obtain projections for each of the 45 GTAP regions. Growth rates are aggregated using the projections as weights; for example, GDP growth rates for the year 2010 were aggregated using projected GDP shares for 2010.

## **3. Policy Projections**

Having obtained the macro projections, the next step is to examine the policy shocks that form part of a legitimate base case scenario. A number of policy shocks are calculated for incorporation into the base case scenario. These include:

1. the implementation of the Uruguay Round (UR);
2. some pre-WTO accession tariff reductions implemented by the Chinese prior to 2000;
3. the implementation of China's accession to the World Trade Organisation (WTO);
4. the implementation of the Agreement on textiles and clothing; and
5. finally shocks to tariff rates required to simulate a slow decrease in tariffs after the completion of the UR.

The aim here is to develop a realistic policy scenario for the global economy. Over the last 50 years there has been a gradual reduction in tariffs world-wide, underlying the excessive growth in global trade. It is believed that this gradual reduction in tariffs and the corresponding increase in trade will continue after the UR has been fully implemented. The elimination of quotas on textiles and wearing apparel is implemented by reducing export taxes. This approach is analogous to reducing the quotas rents earned from these quotas.

The first sub-section contains a description of the original sources for the policy projections. In the second sub-section, some preliminary changes to the data are outlined and then in the third, the data is used to obtain shocks for the relevant policy variables.

### ***3.1 Data Sources***

The following data on the UR agreements and on China's accession were obtained:

1. Post-UR tariff estimates were obtained from Francois and Strutt (1999). These estimates were based on post-UR information from version 3 of the GTAP database and the GATT/WTO integrated database (IDB). These estimates were in the form of post-Uruguay tariff revenue (URTV). These tariff revenues had been updated to reflect version 4 of the GTAP data base by Dimaranan (1999).

2. Export tax equivalents used to simulate the effects of reducing the quotas on textiles and wearing apparel under the MFA. These were obtained from the GTAP data base.
3. Tariffs imposed by China on a subset of GTAP commodities were obtained for 1996 and 1998 from Fan and Zheng (2000). The percentage change in these two rates were then applied as shocks to the GTAP tariff rates.
4. Estimates of the weighted average applied tariff rates offered by China for their accession to the WTO were obtained from Martin et. al. (1999) of the World Bank. These were based on the August 1999 offer and were available for 38 of the 50 GTAP commodities and 41 of the 45 GTAP regions. These tariffs had been updated to reflect version 4 of the GTAP data base by Dimaranan (1999).
5. Similarly average tariff rates for Taiwan were obtained from Dimaranan (1999).

### ***3.2 Updating the post-UR tariffs***

A number of problems were noted with using the supplied post-Uruguay Round tariff revenue data obtained. As a result these tariff revenues were adjusted in three ways:

- a) Large differences between the actual tariff revenue provided in versions 3 and 4 of the GTAP data base for beverages and tobacco led to substantially different shocks being applied to simulate the UR depending on which version of the GTAP database you were using. As a result the URTV for beverages and tobacco was adjusted to ensure that the final shock obtained in version 4 was the same as that obtained in version 3.
- b) The accession offers of Taiwan and China were incorporated into the post-UR tariff revenues.
- c) Also it was decided that all regions (except China and Taiwan) would not proceed any further with the liberalization of their agricultural markets, despite the Uruguay round agreements. As a result the URTV values for agricultural commodities were set equal to the current tariff revenues.

This new URTV is then used to find the shocks required to simulate the effects of the UR.

### ***3.3 Policy shocks***

A number of steps were undertaken to obtain a set of yearly shocks to tariffs and export subsidies for all of the GTAP sectors and regions. These included calculating the various shocks, converting these shocks into yearly rates and finally combining these shocks to obtain a set of shocks on tariffs and export subsidies which are dependent on time. Each of these stages is discussed in turn below.

#### ***Calculating the Shocks***

Four types of shocks are calculated. The first is the shock required to implement the UR; secondly, the shocks to tariff required to reduce all tariffs slowly to zero after the completion of the UR; thirdly, the shocks to export subsidies to eliminate the quota rents under the Agreement on textiles and clothing (ATC); and finally, shocks to reduce the tariffs of China to their current rates.

### *Determining Yearly Shocks*

The shocks calculated above are those shocks required to bring the tariff revenue or export subsidy down to a specified level. It is assumed that the reduction in tariffs (or the expansion of quotas) will occur gradually over several years. Thus in order to calculate yearly shocks data is required on the initial year and on the length of time over which the shocks are expected to occur. Table 1 provides the time periods used in the standard base case scenario. It is possible to adjust the timing of policies by altering a text file (`yrpolicy.txt`). Note also that China and Taiwan are considered special cases. Their timing is determined separately from the other regions (other regions can be added to this list of special regions). The shocks are assumed to be undertaken in equal installments over the period.

### *Combining Shocks*

The resulting yearly shocks to tariffs and export subsidies are combined to include a time dimension to take account of the differences in implementation of policies. Table 1 provides a summary of the timing used for the standard base case scenario. Although the Chinese tariff reductions were calculated as the difference between 1996 and 1998 rates the reductions are applied across the entire period 1995 to 2000. These reductions are probably underestimated, given the extent of liberalization undertaken by China during this period.

**Table 1**  
**Policy Shocks**

	<b>tms</b>	<b>txs</b>
1995 - 1999	1. UR tariff reductions for all regions except China and Taiwan (no shocks to agriculture). 2. Pre-WTO tariff reductions undertaken by China prior to 2000.	USA and EU quotas increased on exports of textiles and wearing apparel for all regions except Taiwan and China.
2000 - 2004	UR tariff reductions for all regions. China and Taiwan's WTO agreement included (no shocks to agriculture, except for China and Taiwan).	USA and EU quotas increased on exports of textiles and wearing apparel for all regions (including Taiwan and China).
2005 - 2019	Post-UR Tariffs are reduced slowly to zero (this is assumed to occur over 20 years).	

## **4. The Base Case**

Finally the macro projections and the policy shocks are gathered together into the final program which is then used to aggregate the shocks. The purpose of this is to obtain a base case scenario that matches the GTAP aggregation to be used in your particular application. In addition to aggregating across regions and commodities the aggregation program also allows you

to cumulate shocks across time. For example, currently shocks are cumulated over 5 years<sup>1</sup>. The macro shocks for the period 1995 to 1999, for a particular GTAP aggregation, are depicted in Table 2 below.

For projected growth rates in endowments (i.e. capital, skilled labor and unskilled labor) and policy shocks the weights used for the aggregation are those obtained from the GTAP database, updated each period by the rate of growth, while the projected growth rates of GDP and population are aggregated using the projected GDP and population shares.

The resulting shocks are then used in the base case scenario for the Dynamic GTAP model.

**Table 2**  
**Macro Projections 1995-1999**

	<b>GDP</b>	<b>Population</b>	<b>Unskilled Labor</b>	<b>Skilled labor</b>	<b>Capital</b>
NAmerica	16.37	5.10	2.53	17.79	21.14
WEurope	12.12	1.16	10.25	18.66	11.46
AusNZL	15.12	5.22	6.68	28.84	16.21
Japan	0.56	1.24	5.44	14.97	16.69
China	46.22	10.44	4.65	18.60	66.01
Taiwan	28.75	3.82	20.66	41.18	42.41
OthNICs	12.23	5.43	9.41	36.60	37.34
Indonesia	-5.57	5.06	11.41	57.89	31.20
OthSEA	7.94	7.32	14.66	38.76	39.26
India	33.92	11.65	6.32	26.66	34.71
OthSoAsia	20.94	8.65	12.09	34.91	27.00
Brazil	3.43	2.70	11.73	30.63	14.35
OthLatAm	16.90	10.64	8.06	35.18	17.51
Turkey	23.36	5.30	13.56	49.77	24.49
OthMENA	12.91	14.61	8.26	24.22	5.37
EIT	0.042	3.73	8.88	27.41	10.46
SoAfrCU	10.84	14.36	12.04	31.57	5.49
OthSSA	19.37	15.20	9.14	33.94	11.06
ROW	15.22	7.72	13.5	32.43	17.07

## 5. References

Ahuja, V. and D. Filmer. 1995. "Educational Attainment in Developing Countries; New Estimates and projections Disaggregated by Gender," World Bank Policy Research Working Paper 1489, Washington, DC, July.

Central Intelligence Agency 1997. The World Fact book 1997-1998. Brassey's: Washington.

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<sup>1</sup> The number of years over which shocks are accumulated are given in the file `yragg.dat`. Thus if you wish to change this you must alter `yragg.dat`. You should also alter `yrmake.txt`. This file contains a list of the years which are converted into shock files for use. Currently this file contains the following numbers 001, 006, 011, 016, 021 corresponding to the periods 1995-1999, 2000-2004, 2005-2009, 2010- 2014 and 2015-2019 and reflecting the fact that data is aggregated over 5 year periods.

Fan, M. and Y. Zheng. (2000): "China's Trade Liberalisation for WTO Accession and Its Effects on China - A Computable General Equilibrium Analysis", mimeo.

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Hertel, T., B. Dimaranan, Hoekman, W. Martin and K. Anderson, forthcoming. "World Trade Liberalisation for the New Millenium: An Empirical Study," a forthcoming monograph from the Centre for Economic Policy Research (CEPR).

Martin, W., B. Dimaranan and T. Hertel, (1999): "Trade Policy, Structural Change and China's Trade Growth", mimeo.

**Table A1**  
**List of Standard Countries**

abw	Aruba	lao	Lao PDR
ado	Andorra	lbn	Lebanon
afg	Afghanistan	lbr	Liberia
ago	Angola	lby	Libya
alb	Albania	lca	St. Lucia
ant	Netherlands Antilles	lie	Liechtenstein
are	United Arab Emirates	lka	Sri Lanka
arg	Argentina	lso	Lesotho
arm	Armenia	ltu	Lithuania
atg	Antigua and Barbuda	lux	Luxembourg
aus	Australia	lva	Latvia
aut	Austria	mac	Macao
aze	Azerbaijan	mar	Morocco
bdi	Burundi	mco	Monaco
bel	Belgium	mda	Moldova
ben	Benin	mdg	Madagascar
bfa	Burkina Faso	mdv	Maldives
bgd	Bangladesh	mex	Mexico
bgr	Bulgaria	mhl	Marshall Islands
bhr	Bahrain	mkd	Macedonia, FYR
bhs	Bahamas, The	mli	Mali
bih	Bosnia and Herzegovina	mlt	Malta
blr	Belarus	mmr	Myanmar
blz	Belize	mng	Mongolia
bmu	Bermuda	moz	Mozambique
bol	Bolivia	mrt	Mauritania
bra	Brazil	mus	Mauritius
brb	Barbados	mwi	Malawi
brn	Brunei	mys	Malaysia
btn	Bhutan	myt	Mayotte
bwa	Botswana	nam	Namibia
caf	Central African Republic	nau	Nauru
can	Canada	ncl	New Caledonia
che	Switzerland	ner	Niger
chl	Chile	nga	Nigeria
chn	China	nic	Nicaragua
civ	Cote d'Ivoire	nld	Netherlands
cmr	Cameroon	nor	Norway
cog	Congo	npl	Nepal
col	Colombia	nzl	New Zealand
com	Comoros	oan	Taiwan
cpv	Cape Verde	omn	Oman
cri	Costa Rica	pak	Pakistan

cub	Cuba	pan	Panama
cym	Cayman Islands	per	Peru
cyp	Cyprus	phl	Philippines
cze	Czech Republic	png	Papua New Guinea
deu	Germany	pol	Poland
dji	Djibouti	prk	Korea, Dem. Rep.
dma	Dominica	prt	Portugal
dnk	Denmark	pry	Paraguay
dom	Dominican Republic	pyf	French Polynesia
dza	Algeria	qat	Qatar
ecu	Ecuador	rom	Romania
egy	Egypt, Arab Rep.	rus	Russian Federation
eri	Eritrea	rwa	Rwanda
esp	Spain	sau	Saudi Arabia
est	Estonia	sdn	Sudan
eth	Ethiopia	sen	Senegal
fin	Finland	sgp	Singapore
fji	Fiji	slb	Solomon Islands
fra	France	sle	Sierra Leone
fro	Faeroe Islands	slv	El Salvador
fsm	Micronesia, Fed. Sts.	smr	San Marino
gab	Gabon	som	Somalia
gbr	United Kingdom	stp	Sao Tome and Principe
geo	Georgia	sur	Suriname
gha	Ghana	svk	Slovak Republic
gin	Guinea	svn	Slovenia
gmb	Gambia, The	swe	Sweden
gnb	Guinea-Bissau	swz	Swaziland
gnq	Equatorial Guinea	syc	Seychelles
grc	Greece	syr	Syrian Arab Republic
grd	Grenada	tcd	Chad
grl	Greenland	tgo	Togo
gtm	Guatemala	tha	Thailand
guy	Guyana	tjk	Tajikistan
hkg	Hong Kong	tkm	Turkmenistan
hnd	Honduras	ton	Tonga
hrv	Croatia	tto	Trinidad and Tobago
hti	Haiti	tun	Tunisia
hun	Hungary	tur	Turkey
idn	Indonesia	tuv	Tuvalu
ind	India	tza	Tanzania
irl	Ireland	uga	Uganda
irn	Iran, Islamic Rep.	ukr	Ukraine
irq	Iraq	ury	Uruguay
isl	Iceland	usa	United States



isr	Israel	uzb	Uzbekistan
ita	Italy	vct	St. Vincent and the Grenadines
jam	Jamaica	ven	Venezuela
jor	Jordan	vnm	Vietnam
jpn	Japan	vut	Vanuatu
kaz	Kazakstan	wbg	West Bank and Gaza
ken	Kenya	wsm	Western Samoa
kgz	Kyrgyz Republic	yem	Yemen, Rep.
khm	Cambodia	yug	Yugoslavia, FR (Serbia/Montenegro)
kir	Kiribati	zaf	South Africa
kna	St. Kitts and Nevis	zar	Zaire
kor	Korea, Rep.	zmb	Zambia
kwt	Kuwait	zwe	Zimbabwe

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