

THE EFFECTS OF CHINA'S DEVELOPMENT AND OPEN POLICY ON JAPAN'S ECONOMY

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Abstract

China has done much to promote its policies of economic openness in recent years, culminating with its entry into the WTO last year. China is expected to be not only a vast market for foreign enterprises, but also a supplier of inexpensive manufacturing products to the world economy.

In contrast, Japan's economy has suffered from a prolonged recession in recent years. Why hasn't it recovered? Some people have argued that a main cause of deflation Japan has suffered is the increasing quantity of imports of inexpensive products made in China. Moreover, increasing Chinese products may compete favorably against Japanese products both in Japan and abroad. This trend is one cause of de-industrialization in Japan.

In this research we examine how the coming Chinese economic expansion will affect the world economy—and especially the Japanese economy—by using CGE model simulations.

Simulation results show that China's development has not so big effects on other countries in terms of macro economic variables, but makes industrial structures change. But if other countries cannot adjust to those effects because of domestic economic structure such as stickiness in labor market, problems like excess supply occur.

Problems caused by trade are not an international issue; it's a domestic one.

Goals of the Analysis

China's economy has expanded its production ability through foreign direct investment from advanced countries and Taiwan, and has enjoyed high economic growth via trade since the open-door policies of the 1980s. Many companies in Japan have moved labor-intensive production points to China in search of cheaper labor costs. That trend has allowed inexpensive goods made in China to prevail in 1990s. They are not only manufacture goods but also agricultural products. Many manufactured imports from China into Japan are products of Japanese FDI; they are the results of borderless economies. But companies' activities are not limited to relocating businesses to China; their activities have caused arguments about "de-industrialization," which adversely affects Japanese companies, and many companies consider China to be a threat. Some people have argued that, to maintain Japanese competitiveness, the Chinese currency, the yuan, should be reevaluated. Moreover, regardless of the appropriateness of the level of the exchange rate, the vast supply of inexpensive goods from China has

reduced both the wages of unskilled workers and general prices in Japan, and is one cause of the deflation Japan is now experiencing. On the other hand, many advanced countries, including Japan, have expectations of selling to China's huge market, and consider China a "new frontier" due to China's accession to the WTO.

We would like to do some simulation analyses on the effects of China's development and open policies on the Japanese economy using a CGE model.

Current Conditions in the Japanese Economy

Japan's economy in 1990s stagnated; it is often called the "lost decade." The average growth rate in the period was slightly more than 1 percent, a very low historical figure and low relative to the performances of the Western industrialized countries during that decade. On the other hand, inflation rates as measured in the GDP deflator decreased. Inflation has been negative since 1995, and until now the situation has not changed. So-called deflation is still ongoing.

At first, this situation was considered to be relatively benign. The appreciation of the yen since the late 1980s was expected to modify price differences between home and abroad; the situation of significantly higher prices domestically would, it was thought, be rectified by structural change such as regulatory reform. The problem is twofold: high prices due to low productivity, and the high-cost structure of some of non-tradable goods, which are protected by regulation. Some have said regulatory reform raises economic welfare since it corrects the high-price structure, and generally reduces prices. But these opinions confused general prices and relative prices. Others criticized that price differences were linked to exchange rates, so the argument was nonsense. But the opinion that the promotion of structural reform forces prices downward has prevailed.

The recent situation shows that the decline in prices is not caused by some imported goods, or by non-tradable goods and services in which structural change have been made, but by general phenomena.

One reason for the general price drop is easing demand supply in terms of the macroeconomic situation; this should be understood as monetary phenomena. Though monetary measures, including a zero-interest policy, have been carried out successively since the mid 1990s, the price situation remains the same. Money supply in a broad sense has not increased so much, but the ratio to nominal GDP has dramatically risen, and base money has also surged.

Since these monetary easing policies could not have caused deflation to cease, some say the measures have been insufficient. Many say that deflation is an instinctual monetary phenomenon, and that various structural factors have made prices decline.

Structural factors include excess supply all over the world, and the stickiness of exchange rates. First of all, the surging imports of inexpensive manufactured goods from newly industrial countries, especially China, have not only forced a drop in prices for competitive products; they've also had similar effects on the prices of, for example, land and labor.

Second, in China, as in Malaysia and Singapore, products have achieved glut status, inventory stock is increasing, and deflation due to price competition is rampant.

Third, the currencies of most newly industrial countries are pegged to the US dollar, which means the exchange rate mechanism doesn't work. As for the yen-dollar relationship, due to Japanese trade surplus and other factors, it has been steady relationship recently, so it is hard to make the yen depreciate very sharply. The yuan is now weak vis-à-vis the yen, so even if adjustment is needed, it is also hard to devalue the yuan because of China's domestic situation. You may say that the technical catching up process in China and other countries under fixed rate system have caused prices to equalize.

From the late 1980s to the spring of 1995, the yen generally appreciated against the dollar. It has fluctuated somewhat, but the yen has remained relatively strong compared to the general Japan-US economic performance. The strong-yen trend from late 1980s, along with trade friction, have been factors in the increase in foreign direct investment. FDI—which, in the 1980s, aimed to avoid trade friction—increased mainly in America or Europe, two main export markets. Investments then moved to Southeast Asia in search of cheaper labor and the avoidance of risk. After that, FDI to China surged in the 1990s. Except non-manufacturing investments, which increased in America in late 1980s, virtually all FDI from Japan has been aimed at manufactured goods, especially in Asia. That has caused the "de-industrialization" argument regarding domestic manufactured products.

The dispute over "de-industrialization" by FDI has two aspects. Increasing FDI itself increases the export of source countries due to the export of capital goods to host countries initially, and then parts begin to be exported after capital utilization starts. As long as the goods produced in host countries are exported to other countries, it doesn't cause problems in source countries.

FDI in its early stages in Japan was something like "roundabout production," intended to avoid trade friction. But product cost differences such as labor in other countries were so big that they that raised the production ratio abroad, and not only for roundabout exports; they also began to produce goods for export to Japan, which caused the domestic product ratio to gradually decline.

Many big enterprises combined product development and high value-added production at home with low value-added product in host countries. For small business, FDI meant product reduction at home. And parts that were imported from Japan first were gradually produced in each country. That meant further reduction in production at home. Development and imports, which enterprises do not produce at home, force companies to invest abroad, especially in Asia, where products are made and exported to Japan. This has spread among manufactured goods such as textiles and agriculture products. Increasing the import of such inexpensive goods has made caused hardship for domestic competitors and reduced their production. That has caused the safeguards due to the surge of imported leeks, mushrooms, and rushes from China, and the request for restraints in towel imports. De-industrialization and employment issues have become problems due to domestic companies' production points transferring abroad, development, and imports.

But it is not clear whether the main reason of economic stagnation lies in de-industrialization or elsewhere in terms of the macroeconomic situation. On average, economic growth in 1990s was positive, though it was low under the situation of a decreasing labor force. Trade balances also have maintained positive, though decreasing surplus, thanks to the export of basic manufacturing. It is hard to consider that the de-industrialization has begun in terms of increasing unemployment and the shortage of supply due to the reduction of production potential via manufacturing moving abroad. The employment problems are serious, and the unemployment ratio has risen substantially. The economic

growth is due to high productivity in some manufacturing sectors, especially by innovations in information communications technology. But the stickiness in the labor market has prevented adjustment, and that has increased unemployment. In addition, the non-performing loan problems, the delay in structural adjustment in non-tradable sectors, and other issues have complicated the problems.

China's Economy Today

China has achieved high economic growth by surging exports, accepting huge FDI from advanced countries, including Japan, during the decade when Japan stagnated. The trade balance between China and Japan was once Japan's surplus, but recently it has turned into deficit. FDI to China or China products prevalent in Japan has invited arguments about it possibly being one reason behind de-industrialization and deflation.

The Chinese economy in the 1990s has grown about 10 percent through expanding FDI and cheap labor costs. After the devaluation of the yuan in 1994, trade had turned to surplus due to increased exports. It suffered relatively little during the Asian crisis in 1997, and its growth has been maintained through accepting FDI. Though the Chinese economy looks very good, it has vulnerable aspects too. From the late 1990s, excess investments, inventory increases, price declines due to overproduction, and restructuring of national companies have produced high unemployment.

It is not likely that China will reevaluate its exchange rate voluntarily. At the end of 2001, China's accession to WTO was decided due to the increasing presence of China in international trade. By accession to the WTO, China is about to reduce tariff rates, to abolish export subsidies, and other measures. As for reducing tariffs, average tariff rates in manufacturing were 16.6 percent in 1998, which will be reduced to 8.9 percent in 2010. Tariffs on agricultural products will drop from 22.7 percent to 15.9 percent, and the 80-100-percent tariffs on automobiles will be reduced to 25 percent. And the government is planning to reduce or abolish regional and investment restrictions in service industries such as commerce, finance, insurance, and communications.

China's accession to the WTO is expected to increase the transparency of Chinese markets, reduce risks, and stimulate international transactions through capital transfers and trades. China is a huge market with more than a billion people. Raising incomes and purchasing power by development will offer export markets for industrialized countries, including Japan. Moreover, increasing China's production supply will allow industrial structures in major advanced countries to change.

Such rapid developments in China, along with FDI and trade from Japan, which have helped China, are sometime considered causes of de-industrialization and deflation in terms of the current economic situation in Japan.

Economic Viewpoint

If you talk with economists about the effects of China's development and open policy, some answers are obvious. In principle, trade benefits both sides. Moreover, at present, the products being made in each country are largely different. The relationship is therefore complementary rather than substitutive.

As we mentioned previously, however, some Japanese manufacturers are currently competing with China. They are being forced to reduce their production, and are sometimes closing down their businesses.

And even though the relationship is complementary today, China's growth far outpaces Japan's, and in the not-so-distant future China will compete with Japan in many more fields. Some say it has already happened; this is one cause of de-industrialization. We are going to verify these views by using a model.

Experimental Simulations by the GTAP Model

In this paper, we do some simulations using the GTAP model. They are preliminary and experimental simulations for the study we'll conduct. That means that the results we get here are tentative ones, and that the figures are not so important. We need to figure out the appropriate simulations and their designs. The simulation method below is so-called static simulation; that is, it does not incorporate the capital accumulation effect, which is recently popular when using the GTAP model. Because of that, the simulation figures here are not so big.

Simulation Design

The frameworks of analyses are as follows:

1) Regional aggregation

Because we are interested in Asian areas (since they are competitors of China today), we treated Asian countries as an individual country, but the rests we use in simulations are North America, Western Europe, and Rest of the World. How regions are aggregated is shown in Table 1.

2) Sectoral aggregation

Followed by Chapter 7 the GTAP book, we divided the manufacturing sector into un-skilled labor-intensive, skilled labor-intensive, and capital intensive. The first two categories are separated into "highly" and "moderately."

Simulation and results

1) Base simulation

We first do base simulation, which is assumed as a 10-year forecast started in 1997, which is the base year of GTAP database version 5. For doing this simulation, we have to input future endowments such as labor, capital, productivity, and other factors. But there are not so many forecast values for East Asia including China. We use forecast values of endowments by the World Bank and other institutions. Since some of them were estimated before the Asian crisis, they look too high compared to their recent economic conditions. We modified some figures to reduce their values. These are factors in the Southeast Asian countries (Table 3). Moreover, we reduced tariff rates of APEC countries except China according to the APEC trade liberalization schedule.

As the model framework we used here is not a dynamic model, the simulations we did are comparative static analyses by changes of endowments and productivity. We reduced the Armington parameter of the highly skilled labor-intensive manufacture sector, which includes transportation machines, because it is high. As it is over four, technical progress in that sector or capital increasing makes China's growth too high.

Base simulation results are in Table 4 and Table 5. They show forecasted growth for countries that were hit by the Asian crisis to be a little bit higher than the actual growth.

2) China's low growth simulation

At standard simulation, assumption capital and TFP growth in China were high, and it is likely to remain high, but what would happen if China's growth were not so high? In a low-growth simulation, we made the growth rate of capital stock low (at the world average) and TFP in manufacturing sectors at half values. We haven't changed the labor and population assumptions.

Chinese average growth rate per year is down to 3.5 percent from 7.1 percent in the standard simulation. As we haven't changed any factors in other countries, the simulation results in macroeconomic variables have not significantly changed, except for China. As for Japan, production in manufacturing sectors has slightly increased, due to decreasing China's production. But as mentioned before, neither GDP growth rate nor the economic welfare are different—they are almost the same as the standard case.

3) China's high growth simulation

Next we tried a simulation if China's growth rate accelerates due to increasing productivity by more FDI, and raised investment. In this simulation, we raised the growth rates of capital and TFP of unskilled labor intensive manufacture one percentage point and raised that of skilled labor intensive and capital-intensive manufacturers three times. So this is skilled labor and capital biased progress.

Results show that China's economic expansion is so big, especially in skilled labor-intensive manufacturing sectors' production and wages.

What impact will this high growth have on other countries? Japan's macroeconomic variables are in this case also unchanged, like in other simulations. But production in the unskilled labor-intensive manufacturing sectors has decreased. The assumption is that China's skilled labor and capital-intensive manufacturing biased growth should make Japan's high skilled labor-intensive manufacture production decrease. But in this simulation, Japan's reduction was more pronounced in the unskilled labor-intensive sectors.

4) China's tariff reductions

At the end of 2001, China's accession to the WTO was decided. China is about to promote liberalization in various aspects of its economy. We implemented tariff reductions, which are just one liberalization policy. That means the effects we get here are a small part of the actual impact. We incorporated tariff reductions on agricultural and manufactured products in China according to the plan.

China's trade balance turned to deficit due to increasing imports. But unskilled labor-intensive manufactured products are increasing, and GDP and economic welfare are also on the rise.

Looking at the effects on other countries, we see that, first, Japan has gained most in economic welfare by trade liberalization. This is partly because terms of trade have improved. The same goes for North America and western Europe. However, since Japan's share of China's imports is biggest, Japan's exports have vastly increased. This reflects on price movement. Prices in North America and western Europe products have fallen, but Japan's have risen due to demand from China.

5) When wages “stick”

We have used the CGE model, in which price adjustment is assumed to be perfect. But if it doesn't work, how does that affect the economy? In this simulation, we assume real wages in Japan and western Europe are sticky, in addition to China's high economic growth assumption. Of course that produces a bad impact on Japan and western Europe. The simulation was done by swapping the total labor force and real wages. The results show decreasing labor in both regions and deteriorating economic welfare.

Conclusion

Our intention is to examine impacts of China's development and open policy on Japan under global context. We tried some experimental simulation. Shocks we input are still provisional, so we have to investigate more plausible figures to get realistic results. And methods may need second thoughts.

But we would like to sum up what we have done. High economic growth in China since open policies' introduction is owing to increasing capital stock, vigorous investment, and abundant labor force. One of reasons capital stock increased by surging investment is FDI from abroad. So it is essential for high economic growth from now on to accept FDI from abroad. In that meaning, accession to the WTO is critical to accelerate liberalization in domestic markets. It is needed for continuing FDI from abroad and keep economic growth to increase transparent and reduce risk in domestic markets. China's accession to the WTO is not only improving its welfare, but also gives benefits to other countries.

And China's development has not so big effects on other countries in terms of macro economic variables, but makes industrial structures change. But if other countries cannot adjust to those effects because of domestic economic structure such as stickiness in labor market, problems like excess supply occur.

Problems caused by trade are not an international issue; it's a domestic one. If that economy has flexible labor markets, the labor adjustment problem is just a temporary matter. But domestic local problems still remain. This model cannot deal with local problems. Many manufacturing enterprises have relations with the areas in which they locate. So adjustment costs are much bigger when considering employees stick to local areas, and their needs also adjust to the non-tradable sectors. Japan has not suffered from China's development and open policy so far in the simulations above. The economic hardship Japan faces today is due to procrastination of reforms of structural problem such as domestic industrial restructuring and labor market adjustment, rather than de-industrialization from competition with newly industrial countries, including China.

Figure 1. Japan's GDP

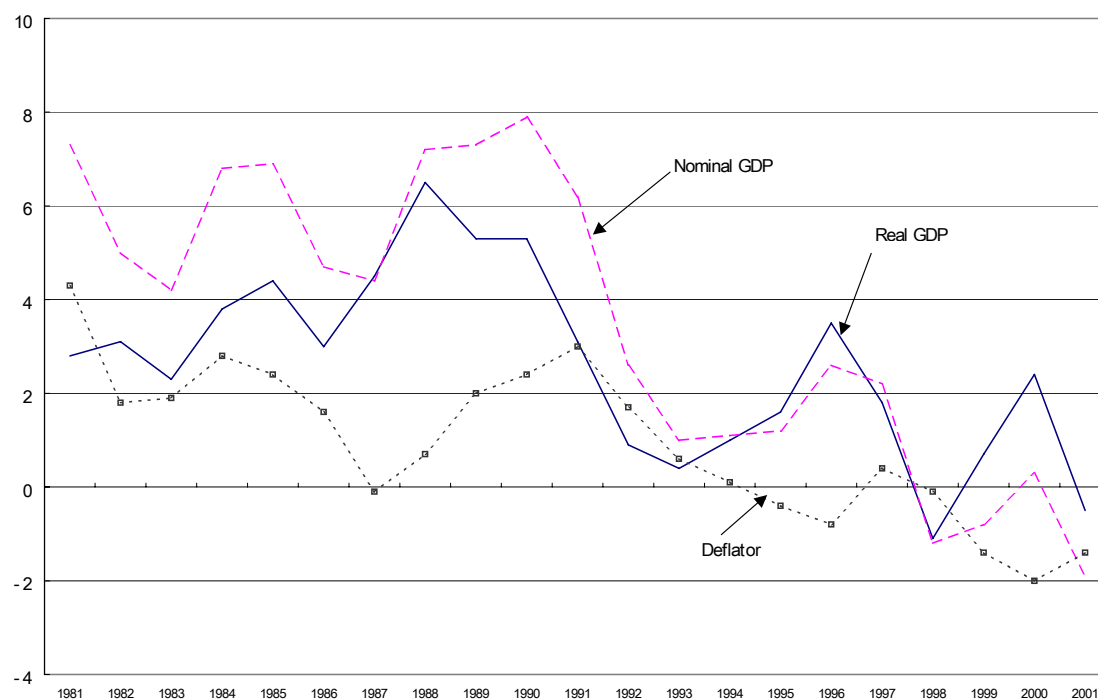


Figure 2. China's GDP

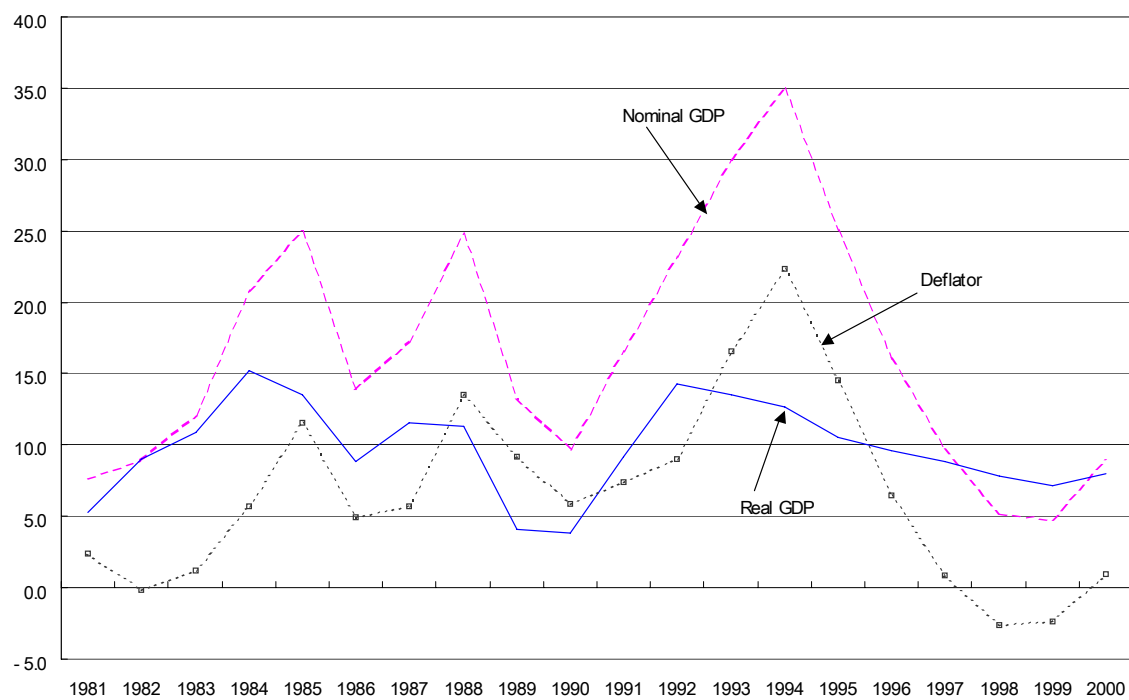


Table 1. Regional and Commodity Aggregation

Regional Aggregation			Commodity Aggregation		
1 aus	Australia	New Zealand	1 agr	Paddy rice	Wheat Cereal grains nec
2 chn	China			Vegetables, fruit, nuts	
3 hkg	Hong Kong			Oil seeds	Sugar cane, sugar beet
4 jpn	Japan			Plant-based fibers	Crops nec
5 kor	Korea			Bovine cattle, sheep and goats, horses	
6 twn	Taiwan			Animal products nec	
7 idn	Indonesia			Raw milk	Wool, silk-worm cocoons
8 mys	Malaysia			Forestry	Fishing
9 phl	Phillippines		2 mng	Coal	Oil
10 sgp	Singapore			Gas	Minerals nec
11 tha	Thailand		3 hunskil	(Highly unskilled labor-intensive manufacturing)	
12 nam	Canada	United States		Bovine meat products	Meat products nec
13 weu	Austria	Belgium		Textiles	Wearing apparel
	Denmark	Finland		Wood products	
	France	Germany	4 munskil	(Moderately unskilled labor-intensive manufacturing)	
	United Kingdom			Vegetable oils and fats	Sugar
	Ireland	Italy		Leather products	Mineral products nec
	Luxembou	Netherlands		Metals nec	Manufactures nec
	Portugal	Spain	5 hskil	(Highly skilled labor-intensive manufacturing)	
	Sweden	Switzerland		Motor vehicles and parts	
	Rest of EFTA			Electronic equipment	
14 row	Rest of World		6 mskil	(Moderately skilled labor-intensive manufacturing)	
				Paper products, publishing	
				Metal products	Transport equipment nec
				Machinery and equipment nec	
			7 cap	(Capital intensive manufacturing)	
				Dairy products	Processed rice
				Food products nec	Beverages and tobacco products
				Petroleum, coal products	
				Chemical, rubber, plastic products	
			8 egw	Electricity	Gas manufacture, distribution
				Water	
			9 unsrvc	(Unskilled labor-intensive service)	
				Construction	Trade
				Transport nec	Water transport
				Air transport	
			10 sksrvc	(Skilled labor-intensive service)	
				Communication	
				Financial services nec	
				Insurance	
				Business services nec	
				Recreational and other services	
				Public Administration, Defense, Education, Health	
			11 dwe	Dwellings	

Table 2. Trade Matrix

	1 aus	2 chn	3 hkg	4 jpn	5 kor	6 twn	7 idn	8 mys
1 aus	6057.0	5304.6	2532.0	21097.7	6516.4	4062.1	2955.1	2471.6
2 chn	5639.6	1.8	12595.3	48071.1	13580.8	5940.6	2984.3	3724.7
3 hkg	824.3	9739.4	0.1	2635.1	441.8	1046.6	239.1	618.7
4 jpn	11312.3	53935.0	12802.9	21.7	30876.8	31055.4	11660.1	16754.5
5 kor	2868.1	22524.9	7163.4	16843.4	12.9	4989.9	4422.0	5034.5
6 twn	2608.7	33744.1	5274.5	14401.3	2822.4	0.3	1803.4	3950.1
7 idn	1780.0	3291.6	1037.9	14012.7	3768.5	2449.1	1.0	1681.3
8 mys	1890.5	4286.8	2451.6	10189.7	3361.7	4085.6	1464.2	0.3
9 phl	474.6	618.9	870.3	5053.7	1052.5	1360.1	545.4	1116.5
10 sgp	2741.2	8225.2	7458.5	8379.4	3523.7	5639.8	3345.3	16233.0
11 tha	1308.1	3564.6	2400.0	12250.3	1561.3	1265.7	1289.1	3113.6
12 nam	19760.3	33083.6	12619.5	111335.8	39144.8	25573.1	8169.3	14141.4
13 weu	26231.2	41881.1	20069.2	97108.9	32539.3	21451.9	15176.0	16814.0
14 row	9471.5	25062.6	6859.2	86080.6	34388.1	8033.4	6854.5	6840.7
Total	92967.3	245264.2	94134.2	447481.2	173590.9	116953.5	60908.7	92494.9

(GTAP v5, million US dollar)

	9 phl	10 sgp	11 tha	12 nam	13 weu	14 row	Total
1 aus	1493.4	2150.5	1817.5	12403.0	19357.4	15264.8	103483.1
2 chn	2670.5	7502.5	2924.5	78874.1	61836.8	42444.5	288790.9
3 hkg	706.8	1766.1	622.0	16309.1	9233.8	13510.1	57693.1
4 jpn	10360.2	22025.4	18444.7	143134.6	104271.7	70536.8	537192.1
5 kor	3133.7	4852.8	2805.4	29703.3	26400.3	36203.3	166957.9
6 twn	2146.5	5578.9	3527.9	40429.3	24232.0	13136.8	153656.1
7 idn	893.8	1643.5	1078.0	12679.8	12831.7	7691.4	64840.4
8 mys	1426.6	18709.7	3153.5	21545.2	18390.9	12081.7	103037.9
9 phl	0.0	2074.6	797.1	13951.8	11727.5	3845.3	43488.2
10 sgp	3282.8	75.7	4953.0	24715.1	27678.9	18322.5	134573.8
11 tha	1063.8	7252.5	0.1	17155.1	17349.3	9022.3	78595.8
12 nam	11145.8	22063.4	10989.3	310060.3	280284.7	265728.0	1164099.3
13 weu	11639.5	24686.9	14925.1	281807.3	1512441.5	512995.3	2629767.1
14 row	6497.3	15342.7	10895.3	266646.8	388477.8	318744.4	1190195.0
Total	56460.8	135725.2	76933.4	1269414.8	2514514.4	1339527.1	6716370.7

Table 3. Endowments and TFP in base simulation

	Labor	Capital	Population	TFP
Australia, etc	0.8	3.6	1	0.5
China	0.8	9.5	0.7	1.1,4.4*
Hong Kong	0.9	4	1.2	1.1
Japan	-0.3	3.1	0.1	0.3
Korea	1.1	6	0.7	1.3
Taiwan	0.8	6	0.7	1.3
Indonesia	2	3.6	1.2	1.3
Malaysia	2.8	3.6	1.7	1.3
Phillippines	2.5	3.6	1.9	1.3
Singapore	1.3	6	1.7	1.3
Thailand	1	3.6	1.1	1.3
North America	0.9	3.1	0.9	0.3
Western Europe	0	3.1	0.1	0.3
Rest of the World	2	3.6	1.5	0.5
Total	1.4	3.6	1.2	0.5

(% change per year)

Source: Capital, TFP: World Bank, Global Economic Prospects 1997 etc.

Labor: 2001 World Development Indicators

Population: UN, World population prospects The 2000 revision

* Unskilled labor-intensive manufacturing 4.4%, the rest 1.1%

Table 4. Base simulation results--- macro variables

	real GDP				terms	Trade	
	estimate	actual*	error	CPI	of trade	Blance	Welfare
aus	2.3	4.2	-1.9	-0.4	0.8	-7,199	106,763
chn	7.1	8.3	-1.2	2.9	-1.4	54,784	652,600
hkg	3.1	3.4	-0.3	-0.2	1.2	-30,283	56,947
jpn	1.3	1.4	-0.1	-1.4	-0.6	224,315	306,927
kor	4.6	4.8	-0.2	0.1	-0.1	-35,590	209,574
twm	4.1	5.7	-1.6	0.3	-0.3	2,919	121,220
idn	3.2	0.7	2.5	0.0	-0.2	-3,126	68,662
mys	4.4	4.7	-0.3	-0.6	-0.3	-385	46,655
phl	3.6	3.5	0.1	0.0	-0.3	-6,944	29,021
sgp	5.2	6.6	-1.4	-0.4	-0.2	-9,958	41,189
tha	4.0	0.3	3.7	-0.4	0.0	-9,496	65,503
nam	1.9	4.1	-2.2	-0.5	0.4	-96,123	1,552,658
weu	1.6	2.6	-1.0	-0.6	0.1	62,141	1,068,916
row	3.1			-0.3	0.1	-145,055	1,538,692

Average change rates per year % (except Trade Blance, Welfare: million US\$)

*actual 1995-2000 average

Table 5. Base simulation results--- production and price

	Endowments and Productions				Prices			
	China	Japan	nam	weu	China	Japan	nam	weu
Land	0	0	0	0	22.8	2.4	12.1	8.4
UnSkLab	0.8	-0.3	0.9	0.0	6.6	0.1	0.4	0.8
SkLab	0.8	-0.3	0.9	0.0	6.4	0.1	0.3	0.7
Capital	9.5	3.1	3.1	3.1	-1.4	-2.7	-1.5	-1.7
agr	2.3	0.7	1.9	1.6	9.0	-0.8	1.6	0.4
mng	2.2	1.3	1.2	1.4	1.0	-1.2	-0.7	-0.8
hunskil	7.9	0.8	0.6	0.5	-3.5	-1.6	-0.5	-0.6
munskil	8.6	1.1	-0.1	0.7	-3.7	-1.5	-0.8	-0.8
hskil	5.0	2.2	1.8	1.2	-1.5	-1.6	-0.9	-0.7
mskil	5.2	2.7	1.8	1.3	-1.1	-1.4	-0.8	-0.6
cap	2.4	1.2	1.7	1.4	1.6	-1.5	-0.8	-0.8
egw	4.2	1.1	1.6	1.3	0.7	-1.6	-0.7	-0.8
unsrcvc	6.1	0.6	2.0	1.7	1.0	-0.8	-0.3	-0.4
sksrvc	5.5	0.9	1.8	1.4	1.8	-1.0	-0.3	-0.4
dwe	6.9	1.8	2.3	1.9	-0.1	-2.4	-1.3	-1.4

percent per year

Table 6. Assumptions in simulations about China

	Base	Low growl	High growth	tariff reduction	High growth + wages stic
Capital	9.5	3.6	10.5		9.5 10.5
TFP(Unskilled labor man.)	4.4	2.2	5.4		4.4 5.4
TFP(Skilled labor and Cap. man.)	1.1	0.55	3.3		1.1 3.3
tariff rates	-	-	-	agricultural and manufactured goods' rates reduction	-
labor(total)	exogenous	exogenous	exogenous	exogenous	endogenous

Table 7. Macro variables deviation rates from base simulation

Real GDP				
	Low growth	High growth	tariff reduction	High growth + wages stick
aus	-0.052	0.023	0.002	0.024
chn	-28.380	24.928	0.260	24.926
hkg	0.010	-0.001	-0.006	-0.001
jpn	-0.012	0.003	0.003	-0.207
kor	0.123	-0.074	0.016	-0.073
twi	-0.039	-0.000	0.010	0.000
idn	0.003	-0.003	-0.003	-0.003
mys	-0.002	-0.015	0.002	-0.013
phl	-0.023	-0.037	-0.002	-0.037
sgp	-0.092	0.015	0.013	0.016
tha	-0.052	-0.006	0.002	-0.004
nam	-0.011	0.000	0.000	0.001
weu	-0.059	-0.001	-0.003	-0.100
row	-0.060	0.010	-0.001	0.012

deviation rates from base simulation (%)

Terms of trade				
	Low growth	High growth	tariff reduction	High growth + wages stick
aus	-1.956	2.812	0.229	2.827
chn	15.173	-4.431	-1.221	-4.406
hkg	-2.137	0.562	0.451	0.593
jpn	-1.815	-0.222	0.258	-0.328
kor	-0.173	-0.417	0.314	-0.398
twi	-0.259	-0.106	0.443	-0.088
idn	0.689	0.119	-0.036	0.138
mys	0.048	0.122	0.031	0.129
phl	-0.210	0.223	-0.013	0.233
sgp	-0.975	0.411	0.162	0.416
tha	0.178	0.076	0.020	0.087
nam	-1.423	0.790	0.074	0.812
weu	-0.373	0.140	0.017	0.140
row	-0.324	0.365	-0.006	0.380

deviation rates from base simulation (%)

Equivalent Variation

	Low growth	High growth	tariff reduction	High growth + wages stick
aus	-2,515	3,338	257	3,352
chn	-412,390	437,723	386	437,758
hkg	-2,908	736	554	771
jpn	-8,534	731	1,180	-8,718
kor	442	-1,247	844	-1,217
twi	-600	80	710	99
idn	495	184	-41	192
mys	35	231	33	236
phl	-196	144	-8	151
sgp	-2,023	886	327	894
tha	44	145	18	153
nam	-21,825	11,840	931	12,104
weu	-15,621	5,351	114	-3,807
row	-8,877	6,336	-268	6,632

deviation from base simulation (million \$US)

Equivalent Variation - GDP ratio (%)

	Low growth	High growth	tariff reduction	High growth + wages stick
aus	-0.44	0.59	0.05	0.59
chn	-21.10	22.39	0.02	22.39
hkg	-1.41	0.36	0.27	0.37
jpn	-0.20	0.02	0.03	-0.21
kor	0.06	-0.17	0.12	-0.17
twi	-0.13	0.02	0.16	0.02
idn	0.18	0.07	-0.01	0.07
mys	0.02	0.15	0.02	0.16
phl	-0.18	0.13	-0.01	0.14
sgp	-1.60	0.70	0.26	0.71
tha	0.02	0.07	0.01	0.07
nam	-0.22	0.12	0.01	0.12
weu	-0.17	0.06	0.00	-0.04
row	-0.13	0.10	-0.00	0.10

Table 9. Productions and Prices of sectors and endowments

Production and Endowment

	Low growth		High growth		tariff reduction		High growth + wages stick	
	China	Japan	China	Japan	China	Japan	China	Japan
Land	0	0	0	0	0	0	0	0
UnSkLab	0	0	0	0	0	0	0	-0.33
SkLab	0	0	0	0	0	0	0	-0.40
Capital	-42.5	0	9.5	0	0	0	9.5	0
agr	-8.074	-0.657	0.084	2.399	-0.595	0.199	0.081	2.368
mng	-17.925	2.184	-17.901	0.560	0.044	-0.253	-17.913	0.451
hunskil	-35.965	7.046	8.459	-1.564	0.827	-0.047	8.392	-1.556
munskil	-38.421	4.723	13.407	-0.826	0.883	-0.147	13.372	-0.935
hskil	-28.475	-0.298	31.328	-0.531	-0.124	-0.056	31.266	-0.571
mskil	-27.802	0.095	18.828	0.359	-1.665	0.242	18.808	0.391
cap	-13.810	-0.514	6.950	0.337	-1.658	0.137	6.941	0.237
egw	-20.957	1.048	2.669	-0.213	-0.054	0.017	2.659	-0.362
unsrcv	-24.148	-0.588	20.615	-0.068	1.697	-0.056	20.657	-0.410
sksrvc	-23.724	-0.097	12.496	0.059	-0.340	-0.015	12.499	-0.190
dwe	-27.398	-0.116	24.259	0.018	-0.009	0.010	24.267	-0.112

deviation rates from base simulation (%)

Prices

	Low growth		High growth		tariff reduction		High growth + wages stick	
	China	Japan	China	Japan	China	Japan	China	Japan
Land	-58.629	-2.760	49.238	9.686	-4.520	1.194	49.233	9.375
UnSkLab	-25.351	0.638	49.462	-3.298	0.633	0.133	49.491	-3.315
SkLab	-23.659	0.590	55.280	-3.337	0.884	0.128	55.317	-3.315
Capital	23.244	0.717	38.839	-3.308	0.979	0.143	38.868	-3.583
agr	-34.722	0.270	41.573	-1.665	-2.062	0.252	41.584	-1.789
mng	0.543	0.736	29.009	-3.267	-0.235	0.125	29.031	-3.383
hunskil	21.566	1.186	-7.096	-3.165	-1.136	0.088	-7.085	-3.260
munskil	25.079	1.152	-6.940	-3.191	-0.833	0.093	-6.927	-3.282
hskil	9.977	0.857	-12.787	-3.290	-2.452	0.105	-12.781	-3.386
mskil	8.983	0.898	-7.707	-3.287	-0.990	0.105	-7.694	-3.380
cap	-5.957	0.705	-0.727	-2.887	-1.473	0.117	-0.716	-2.981
egw	2.600	0.765	23.281	-3.180	-0.462	0.112	23.300	-3.326
unsrcv	-0.653	0.792	23.634	-3.270	-0.382	0.118	23.654	-3.349
sksrvc	-4.193	0.700	29.165	-3.275	-0.197	0.127	29.187	-3.370
dwe	11.763	0.720	33.954	-3.299	0.519	0.139	33.980	-3.545

deviation rates from base simulation (%)