The Effect of China's Development and Open Policy on Japan's Economy

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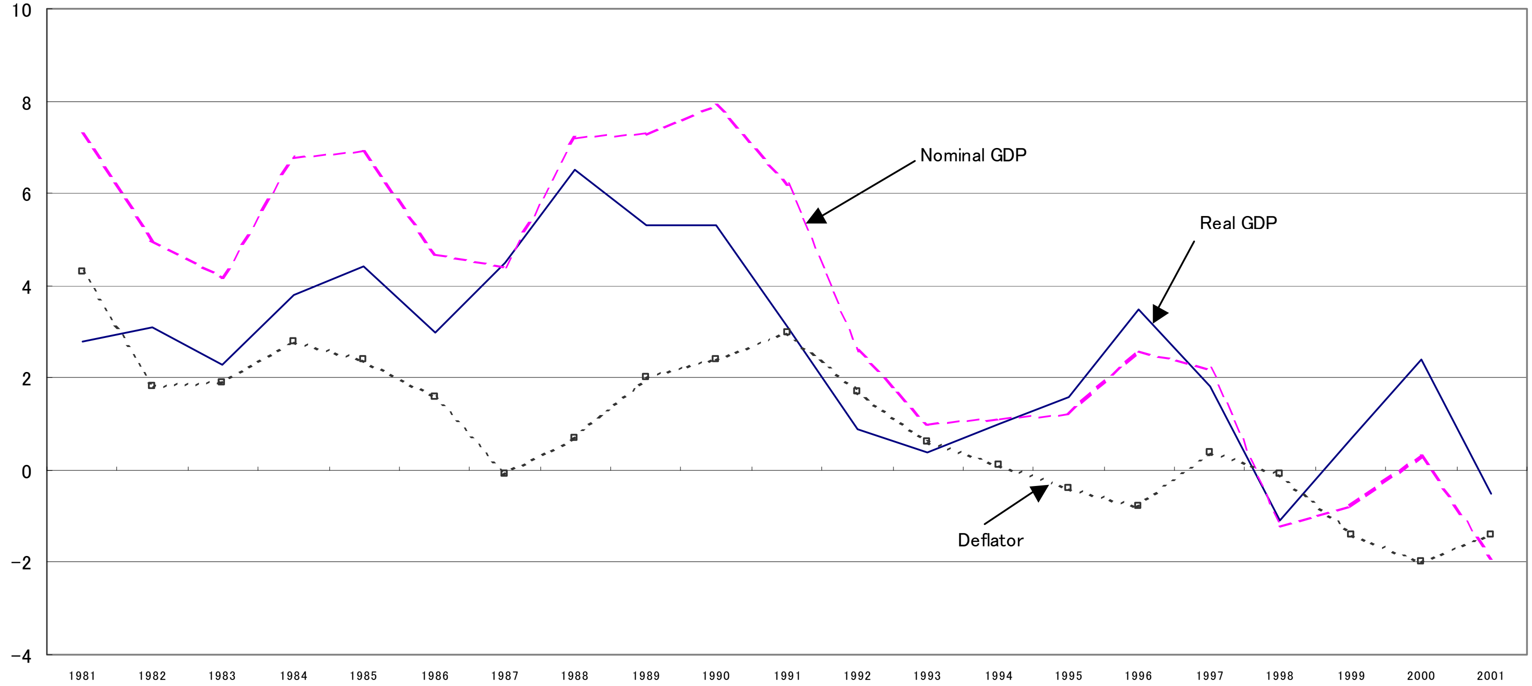
Motive for Research

- How Chinese development and open policy affect the world --especially Japan-- economy?
- Japan's recent stagnation is due to Chinese expansion?
- China is a "threat" to Japan?

Japan’s economic hardship

- Long recession since early 90’s
- Deflation.
- Non-performing loans.
- Huge national debt.
- “Hollowing out”.

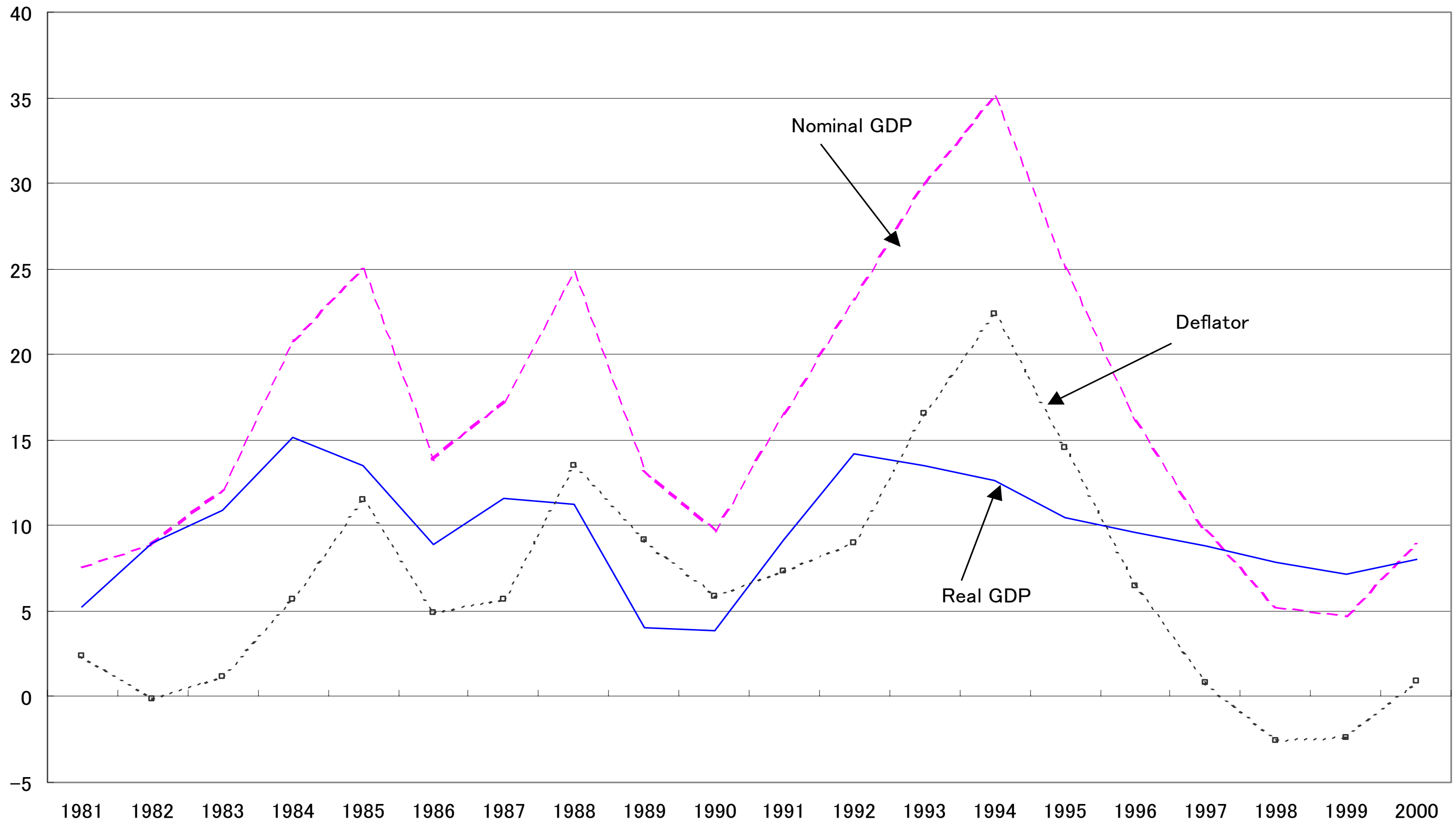
Japan under stagnation, deflation



China’s Leap in economy

- Enjoyed high economic growth.
- Effects on Japan
  - Many Chinese products prevail
  - Reducing general prices down?
  - Hollowing out?

China's GDP growth



Sectoral & Region Aggregation

Regional Aggregation			
1	aus	Australia	New Zealand
2	chn	China	
3	hkg	Hong Kong	
4	jpn	Japan	
5	kor	Korea	
6	twn	Taiwan	
7	idn	Indonesia	
8	mys	Malaysia	
9	phl	Phillippines	
10	sgp	Singapore	
11	tha	Thailand	
12	nam	Canada	United States
13	weu	Austria	Belgium
		Denmark	Finland
		France	Germany
		United Kingdom	
		Ireland	Italy
		Luxembou	Netherlands
		Portugal	Spain
		Sweden	Switzerland
		Rest of EFTA	
14	row	Rest of World	

Commodity Aggregation			
1	agr	Paddy rice Wheat	Cereal grains nec
		Vegetables, fruit, nuts	
		Oil seeds Sugar cane, sugar beet	
		Plant-based fibers	Crops nec
		Bovine cattle, sheep and goats, horses	
		Animal products nec	
		Raw milk Wool, silk-worm cocoons	
		Forestry Fishing	
2	mng	Coal Oil	
		Gas Minerals nec	
3	hunskil (Highly unskilled labor-intensive manufacturing)		
		Bovine meat products	Meat products nec
		Textiles Wearing apparel	
		Wood products	
4	munskil (Moderately unskilled labor-intensive manufacturing)		
		Vegetable oils and fats	Sugar
		Leather products	Mineral products nec
		Metals nec	Manufactures nec
5	hskil (Highly skilled labor-intensive manufacturing)		
		Motor vehicles and parts	
		Electronic equipment	
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	

Simulation by GTAP

- Base simulation
- Low growth
  - Capital & TFP in manufacturing up
- High growth
  - Capital & TFP in manufacturing down
- Open Policy
  - Tariffs reduction
- High Growth + Wages stick
  - if real wages of Japan & Western Europe stick

Assumptions in simulations about China

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	Base	Low growh	High growth	tariff reducion	High growth + wages stick
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	endogenou

Simulation results GDP & TOT

Real GDP

	Low growh	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
twn	-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 growh	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
twn	-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 (%)

Economic Welfare

Equivalent Variation

	Low growh	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
twn	-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 growh	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
twn	-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

Output & Endowment

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
unsrvc	-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 of commodities

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
unsrvc	-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 (%)

Conclusion

China's expansion and open policy impact:

- Most countries gain benefit.
- Not so big effects on other countries in terms of macro economic variables.
- Make output mix changes.

Flexibility of domestic market is important.