

**AN INVITED PRESENTATION AT THE INTERNATIONAL CONFERENCE,  
SPONSORED BY THE PEKING UNIVERSITY JOINTLY WITH THE BEIJING  
FORUM AT THE UNIVERSITY'S CAMPUS, BEIJING, CHINA, AUGUST 23-25,  
2004.**

**Preliminary: For Discussion and Critiques Only: Not to be quoted without prior  
permission from the author. YOUR COMMENTS WILL BE MOST WELCOME.**

## **CHINA'S INDUSTRIAL REVOLUTION: CHALLENGES FOR A MACROECONOMIC AGENDA**

M. DUTTA, Professor of Economic  
Rutgers – The State University of New Jersey, New Brunswick, NJ, 08901-1248, (USA)  
FULBRIGHT SENIOR SPECIALIST (2002-2007)  
*Editor, Journal of Asian Economics*  
*General Editor: Advanced Research in Asian Economic Studies*

### **I. UNDERSTANDING CHINA'S ECONOMY:**

China's industrialization over the past 30 years has been epochal. China's industrial revolution has been marveled by the rest of the world. China's GDP has grown at an average rate of about 10 percent. China has earned her place as the leading newly industrialized economy of the world.

<b>Table 1</b>	<b><u>Average Annual Rate of Growth of Output ( % )</u></b>	
	1980-1990	1990-2002
	<b><u>10.3</u></b>	<b><u>9.7</u></b>

**Source: World Development Indicators, The World Bank, 2002, p 182.**

Challenges ahead of China are, of course, overwhelming. There is no one-step magic formula for any economy. This is true for China with her one billion-plus people and

relative abundance of endowment of natural resources, inclusive of petroleum. In this paper we identify three most urgent issues of concern.

1. China cannot sustain a rate of growth of her GDP at an annual rate of 10 percent for an indefinite period. A process of **SOFTENING** is in order. The lessons of the Asian financial crisis, 1997-98, must be taken note of. *Shanghai Daily* (July 17-18, 2004) featured the news story “*GDP rises slower than expected at an annual rate of 9.7 % in the first six months of the year. Albeit higher than the official target rate of 7.5% for the year, but lower than the economists’ forecasts of 10.6 %.*” This certainly appeared to be a welcome news as it would help contain the rate of inflation.

Keith Bradsher, (*The New York Times* (June 11, 2004 and July 10, 2004), wrote “*the odds of an imminent interest rate increase in China fell on Friday July 9<sup>th</sup>, as Beijing announced that industrial production grew at a slightly slower clip in June. At the same time, the expected rate of inflation was said to be below the central bank’s threshold for tightening monetary policy.*” The news story in China, Bradsher continued, quoting **The China Daily**, that “*administrative measures*” had slowed growth in the economy threatening signs of economy’s “*overheating and rising inflation.*” The issue of softening is in recognition. The choice of “*administrative measures*” vis-à-vis monetary policy as a macroeconomic control tool remains open for China.

2. Income distribution in its two facets – ( a ) inter-regional across China's 31 provinces and ( b ) intra-regional amongst income classes within a given province or a region, remains to be addressed to.
  
3. Progressive augmentation of high-tech oriented productivity of the Chinese manpower to minimize cyclical fluctuations in the process of progression of China's industrial revolution merits serious attention. In addition, the Chinese economy must continue to remain competitive in the global market as other competing economies will successfully make high-tech productivity gains.

The three issues are inter-related and they can be managed by a well-specified macroeconomic agenda, appropriately designed. Monetary and fiscal policies are the core agenda of an economy's macroeconomic policy, be it a capitalist market economy or a socialist market economy. In China's socialist market economy, monetary and fiscal policies must be lawfully defined and operationally transparent. It does take a village to raise a child. Market economy of any description can function successfully only with well structured macroeconomic parameters. Restructuring of People's Bank of China (PBC) warrants a review. Management of fiscal policy and national budgetary policy merits a review too.

The macroeconomic framework will provide tools to **soften** the economy and contain exposure to possible financial crisis, as experienced by several Asian economies in 1997-98. Macroeconomic policies may appropriately be managed to minimize inter-regional income distribution, while fiscal policies can be used to adjust income distribution across

diverse income classes in a given region. Macroeconomic policies can also be managed to plan for upgrading China's human capital by way of providing progressively better education and health care. Reallocation of available limited resources must focus on higher education and advanced research.

As a permanent member of the Security Council, China has a leadership position in the United Nations Organization with its present membership of 191 sovereign nation states. China has earned her membership of the International Monetary Fund and The World Bank, each with a current membership of 184 sovereign nation state economies - often referred to as the Bretton Woods Institutions. China recently became a member of The World Trade Organization (WTO), at present a 147 member-nation group with an agenda of global free trade. Of course, China is a member of the World economic community. No sovereign nation-state economy can maximize its economic gain in splendid isolation. The European Union paradigm based on the emerging concept of continental economic regionalization will be a learning model for China and her fellow Asian economies.

## II. CHINA'S ECONOMIC REFORM : INDUSTRIALIZATION AND INTERNATIONLIZATION

“To be rich is glorious.” The proclamation was loud and clear. In the late 1970s the fact that China's communist economy failed to deliver what it promised to China's one billion-plus people became pronounced. An agenda for economic reform was formulated. The new Communist Party leadership successfully won the challenge of the Gang of

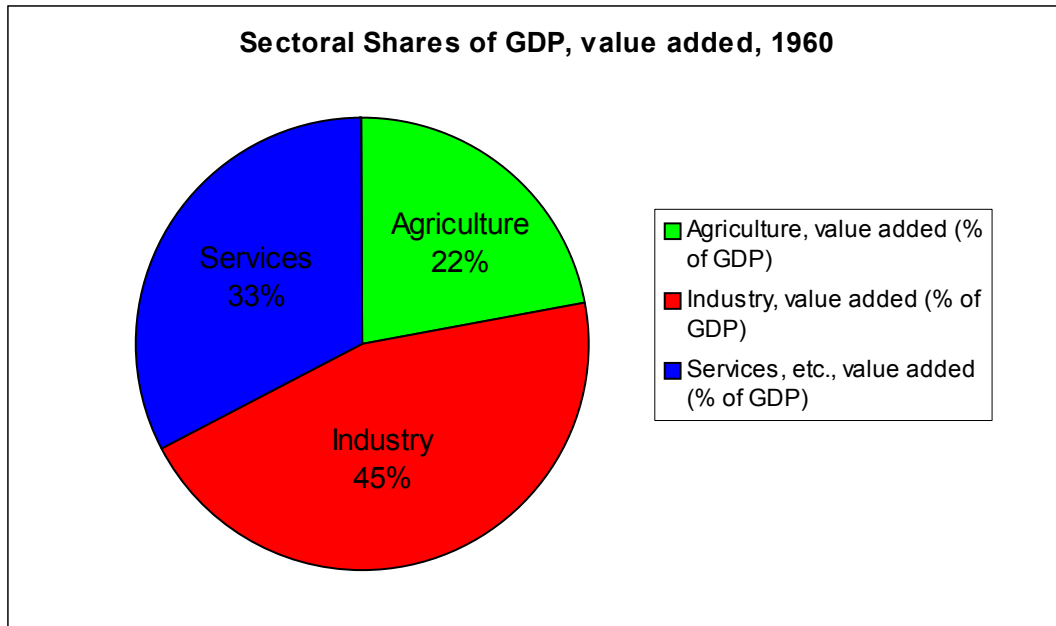
Four. The new leadership took full responsibility for the implementation of China's economic reform agenda. Commitment was total and they went on to implement the agenda. ( Dwight Perkins 1986 and 1988, JEL XXVI, pp. 601-645, JAE 1990, pp. 337-348; Nicholas R. Lardy 1998; Gregory C. Chow 1994, 2002; Liu Guoguang, Wang Lolin & Li Jingwen 2001; M. Dutta, Chang Pei-Kang & Shao-Kung Lin 1990; M. Dutta & Zhang Zhongli 1991; Wu Jiapei, Liang Youcai & Zhang Yaxiong 1995; Zhang Zhongli et al 1991 ( in Chinese) ; Zhang Zhongli et al 1995 (in Chinese); Tsao James (1985, ITC) "China's Economics Development Strategies and Their Effects on US Trade"; Hooley, Richard & Jang Hee Yoo 2002; Gary H. Jefferson, JAE 1990, pp. 333-336; Calla Wiemer & Cao Heping 2004 (forthcoming)).

The immediate focus on agricultural reform was pragmatic. The food supply for a billion-plus people was an urgent consideration. The commune system of the earlier regime was replaced by the FAMILY RESPONSIBILITY SYSTEM. Land now belonged to the family of a farmer, not to the Commune, as was the case in earlier communist regime under which the farmer worked and got a share of the output, the rest going to the government. Under the family responsibility system the land belonged to the family of the farmer as long as the family continued to assume the responsibility of delivering the output as expected. Did the family own the land? So many issues came up for consideration and the leadership responded to them by a series of what we might call executive orders. And it worked to give incentive, market incentive, to farmers and the value-added in agricultural sector output became a record. It became a success story. The Green Revolution came to China as it did in many other economies at earlier decades.

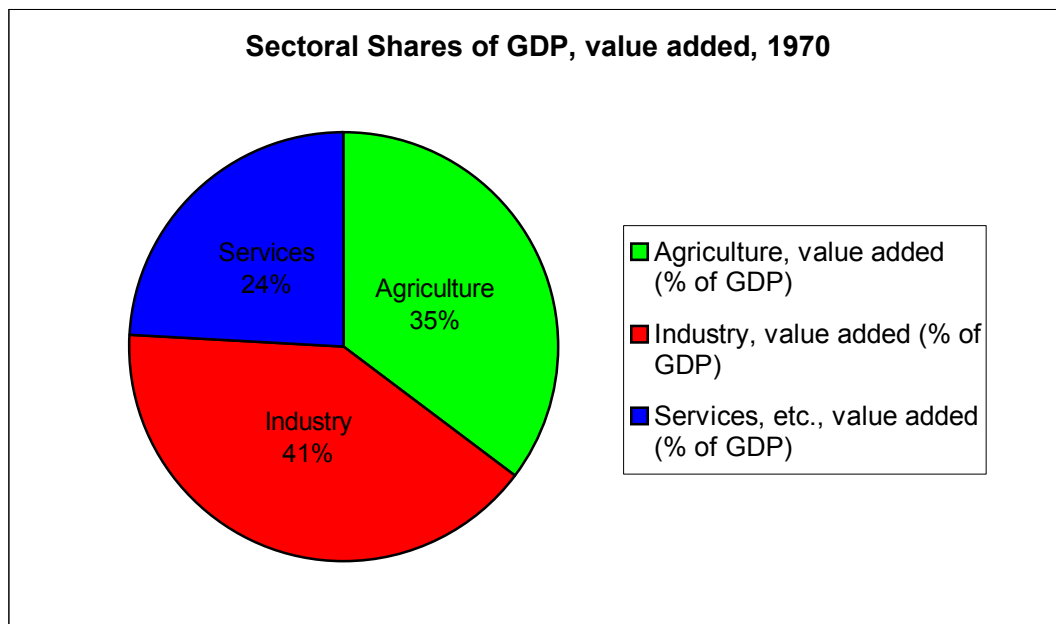
<b>Table 2 Sectoral Shares of GDP, Value Added</b>			
<b>Year</b>	<b>Agriculture, value added (% of GDP)</b>	<b>Industry, value added (% of GDP)</b>	<b>Services, etc., value added (% of GDP)</b>
1960	22.32	44.89	32.80
1961	35.51	32.59	31.90
1962	39.29	32.00	28.71
1963	39.93	33.15	26.92
1964	38.57	35.33	26.09
1965	37.94	35.09	26.97
1966	37.59	37.98	24.43
1967	40.26	33.98	25.76
1968	42.15	31.18	26.67
1969	37.99	35.56	26.45
1970	35.22	40.49	24.29
1971	34.05	42.15	23.79
1972	32.86	43.06	24.09
1973	33.35	43.11	23.54
1974	33.88	42.73	23.40
1975	32.40	45.72	21.88
1976	32.85	45.43	21.72
1977	29.42	47.13	23.45
1978	28.10	48.16	23.74
1979	31.17	47.38	21.44
1980	30.09	48.52	21.39
1981	31.79	46.39	21.83
1982	33.27	45.01	21.72
1983	33.04	44.59	22.37
1984	32.01	43.31	24.68
1985	28.35	43.13	28.52
1986	27.09	44.04	28.87
1987	26.79	43.90	29.31
1988	25.66	44.13	30.21
1989	25.00	43.04	31.95
1990	27.05	41.61	31.34
1991	24.46	42.11	33.43
1992	21.77	43.92	34.31
1993	19.87	47.43	32.70
1994	20.23	47.85	31.93
1995	20.51	48.80	30.69
1996	20.39	49.51	30.09
1997	19.09	49.99	30.93
1998	18.57	49.29	32.13
1999	17.63	49.42	32.95
2000	16.35	50.22	33.42
2001	15.84	50.10	34.07
2002	15.38	51.09	33.53

Source: The World Bank - World Development Indicators

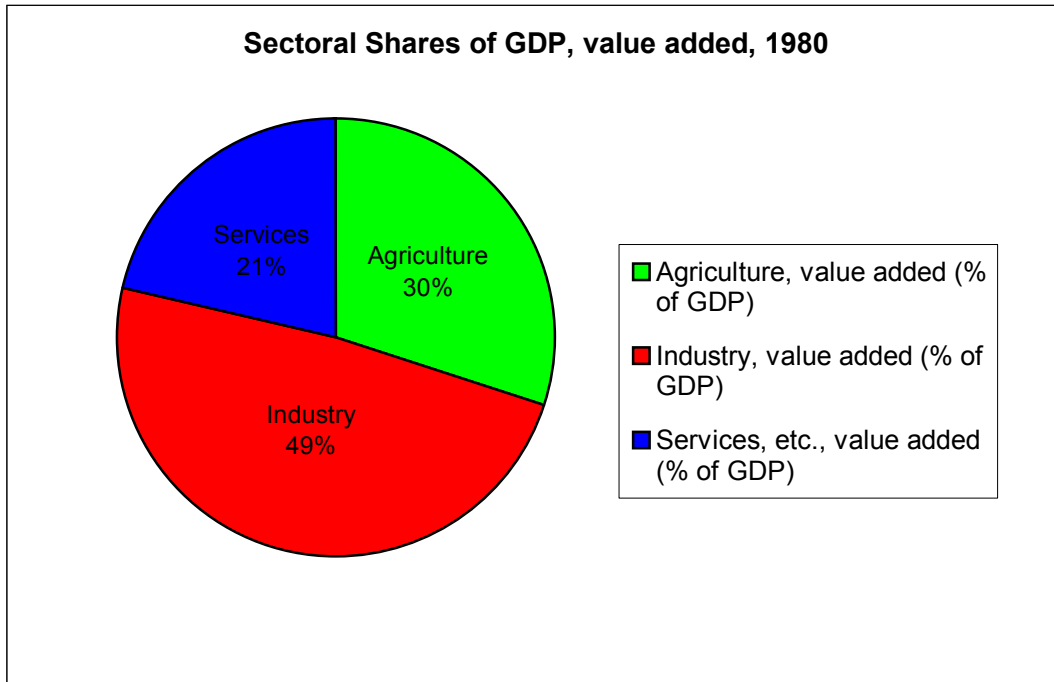
**Figure 1.a**



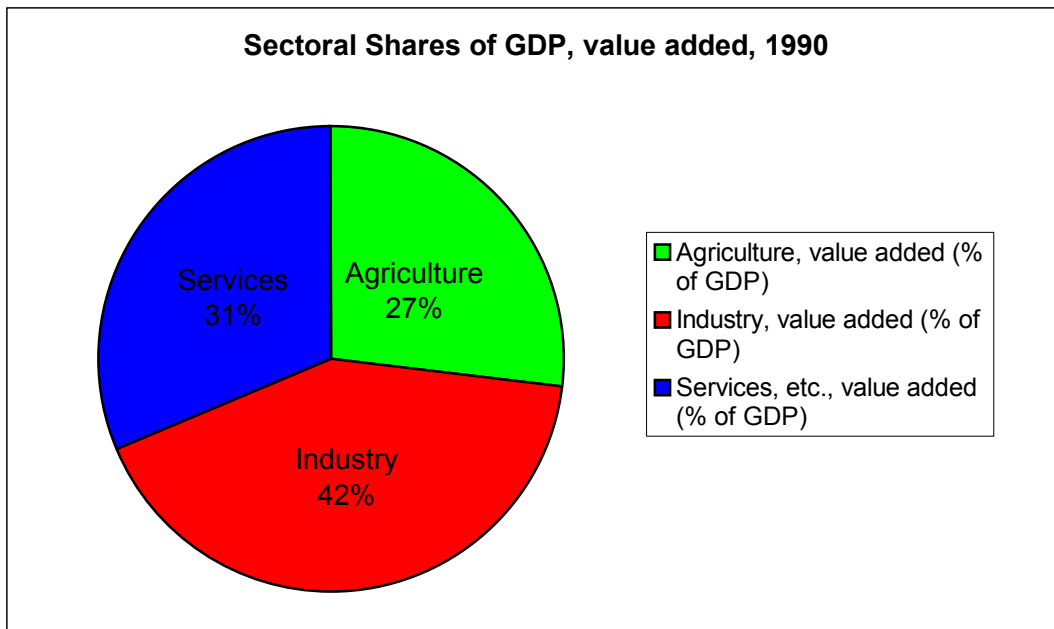
**Figure 1.b**



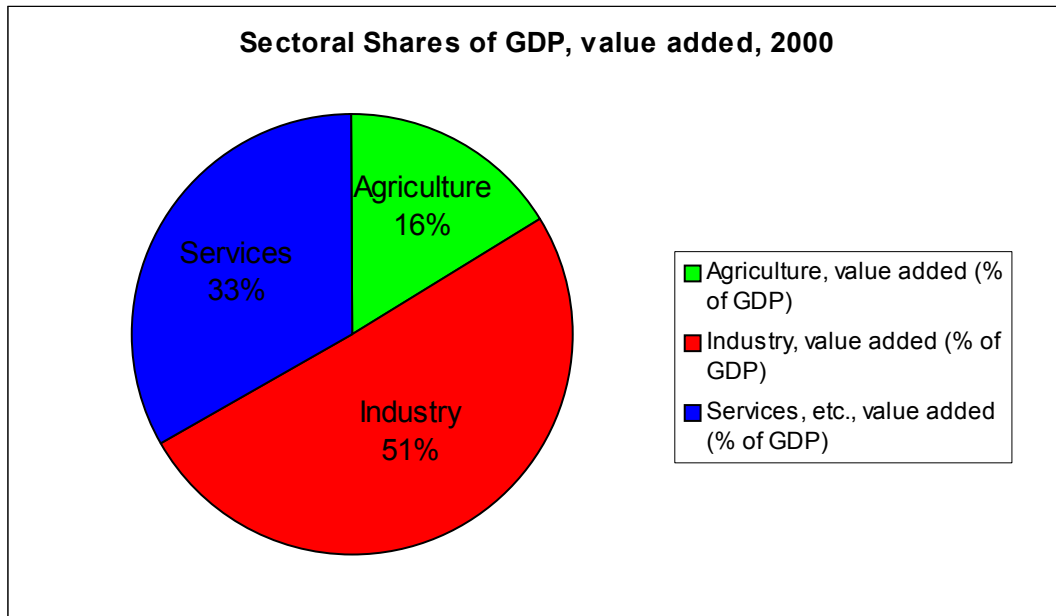
**Figure 1.c**



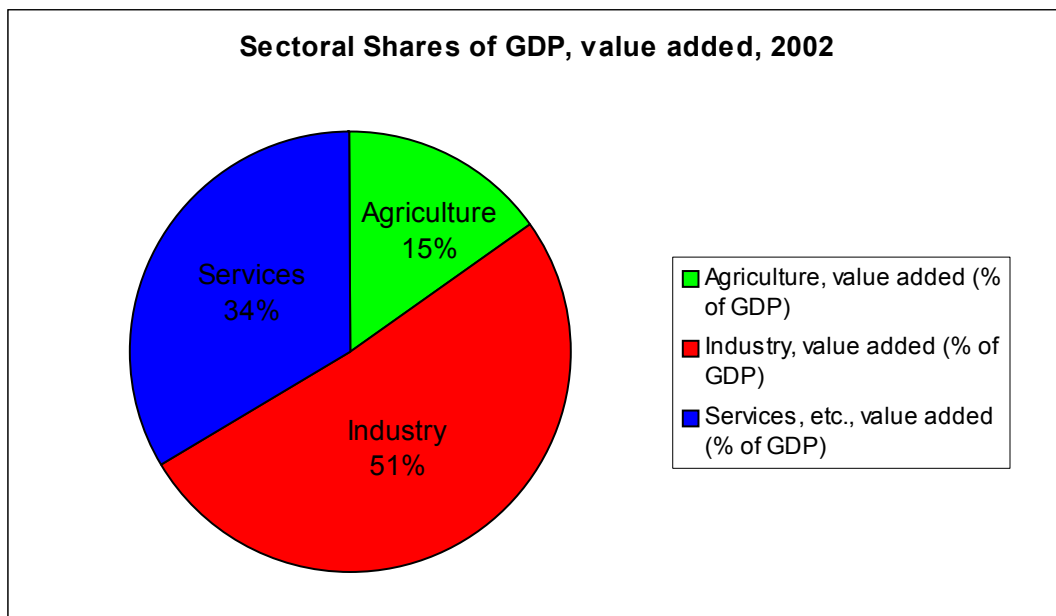
**Figure 1.d**



**Figure 1.e**



**Figure 1.f**



Figures 1.a through 1.f point to the fact that in earlier decades of reform the value added in the agricultural sector was more pronounced. In the later decades the emphasis shifted progressively to the industrial sector. The service sector which includes financial markets did not appear to have expanded to match the demand of the immensely growing industry sector.

**Table 3 . Sectoral Shares of GDP**

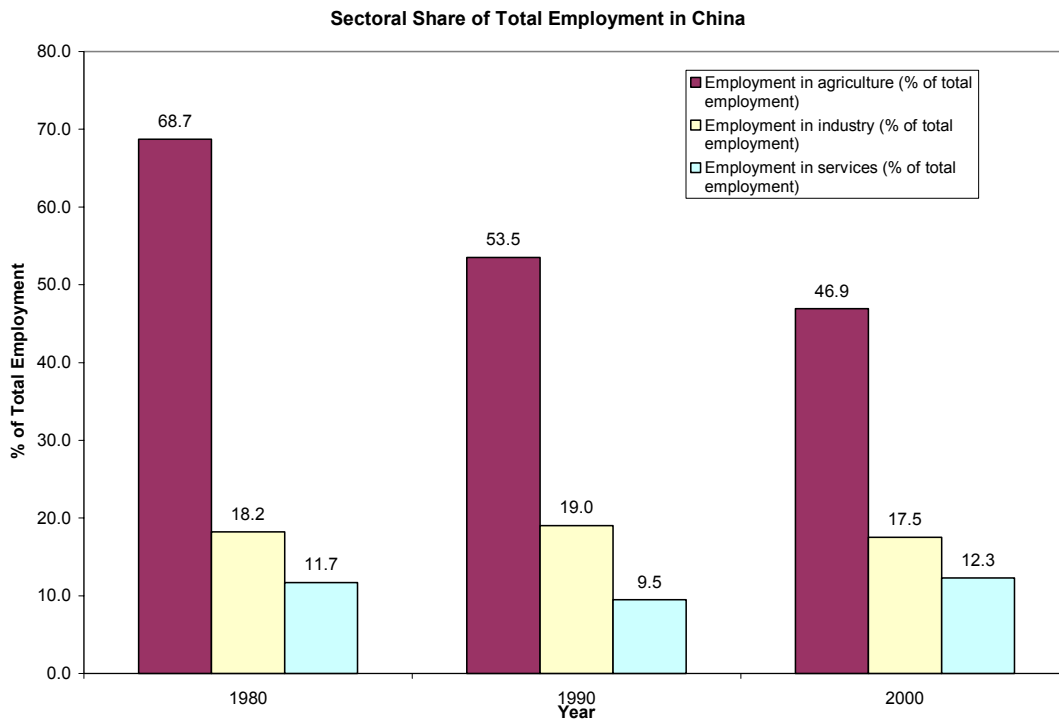
	1970	1980	1991	2000
Agriculture	42.2	25.6	11.8	11.9
Industry	44.6	51.7	75.9	64.0
Service	13.2	22.7	12.3	24.1
<b>Total</b>	<b>100.0</b>	<b>100 .0</b>	<b>100.0</b>	<b>100.0</b>

*Source: Asian Development Outlook, Asian Development Bank, Manila, 1998, p. 239; figures for 2000 ibid, p.213; figures for 1991 ibid, p.293*

Table 3 presents the sectoral shares of GDP. As of 2000, the industrial sector's share of GDP has grown to be about two-third of the total. China has emerged as a leading industrial economy. The share of the agricultural sector of GDP has expectedly declined from 42.2 % in 1970 to 11.9 % in 2000. China's economic development profile has been what it should be. The agricultural sector's total output continues to grow as productivity has increased. Be it noted that the decline in the agricultural sector's share of GDP follows from the fact that China's total GDP due to the expansion of its industrial sector has immensely increased. Has the service sector grown enough to support the overall growth of the Chinese economy?

Figure 2 below presents China's sectoral employment profile. China began as an agriculture-dominant, pre-industrial economy. In 1980, 68.7 % of employment was in its agricultural sector, declining to 53.5% in 1990 and to 46.9% in 2000. Employment in the agricultural sector, declining to 53.5% in 1990 and to 46.9% in 2000. Employment in the industrial sector over the same time period has been around a fifth of the total employment; 18.2%, 19.0% and 17.5% in 1980, 1990, and 2000, respectively. The profile of employment in the service sector has been 11.7% in 1980, 9.5 % in 1990 and 12.3% in 2000. A vast majority of the Chinese continues to depend on the agricultural sector for their employment and income. Compared with the employment profile of the mature industrialized economies of the world, China continues to be too much dependent on its agricultural sector. China's industrial progress has yet to cover her one-billion plus people across the vast territory. (NOTE: Percentages in Figure. 2 do not add up to 100.)

**Figure 2**



Source: *World Development Indicators*, The World Bank

The reform agenda for the manufacturing/industrial sector based on the ENTERPRISE RESPONSIBILITY SYSTEM failed to accomplish parallel success. Indeed, two simple reasons stood in the way. ( 1 ) The scale of production became an important factor for the minimization of unit cost of a product and make the products cost and quality competitive. ( 2 ) Production in the industrial sector is relatively more capital intensive, and the situation was further challenged by the fact that competitively modern and productive machines and equipments, call it the physical stock of capital ( K), was to be imported from abroad.

Successful reform in the agricultural sector made two substantive contributions to the reform in the manufacturing sector. First, the value-added in the agricultural sector pointed to the productivity gain per unit of labor (N). More was produced by a lesser number of farmers. Surplus farmers now became available to migrate to the manufacturing sector and eased the labor demand. Secondly, success of the reform plans in the agricultural sector augmented farmers' incomes and they were ready to spend money on consumption of goods and services, produced by the manufacturing sector and offered for sale in the market. Both the supply and demand levers became features of China's emerging socialist market economy.

The challenge for China to implement its agenda for reform in the manufacturing sector was to import capital goods from the world market. The preliminary efforts to invite contractual joint ventures (CJV), with contractual profit, then with equity joint ventures (EJV) without any such profit commitment failed to work mainly because entrepreneurial cooperation between China's state enterprises, owned and managed one

hundred percent by the Chinese Government, and foreign investors from the capitalist market economies abroad failed to materialize.

Special arrangements apart for petroleum, FOREIGN DIRECT INVESTMENT (FDI), owned and managed by foreign investors one hundred percent, resolved the situation. Foreign investors were attracted by relatively abundant labor supply at a consequently low wage rate and relatively abundant endowment of natural resources waiting to be exploited plus the potential market of one billion-plus consumers in China. China wanted a successful inflow of foreign investment as their domestic savings, given the low income base, could not do the job. They needed employment and income and broadening of the Chinese economy. It could not be done without substantive reform of the manufacturing sector. Be it noted that the inflow of FDI into China over the past 25 years has surpassed US\$ 400 billion (see Table 7). A marriage between China's socialist market economy and the savings-rich, high-income capitalist market economies of the world happily came to take place. China is perceived to be one of the most foreign investment friendly economies of the world. Foreign investors were able to repatriate profit from their investments in China home by way of exporting a part of their Chinese products to the world market and earning export revenues in convertible currencies. Repatriation of profit home encouraged further investment in China by foreign investors. Indeed, it became a win-win game plan.

At this phase of China's industrial revolution, China imported technology and know-how from abroad. They were available in mature industrialized economies and their importation, *à la* FDI, and their adaptation to the indigenous resources, labor - both unskilled as well as skilled, especially in engineering - plus natural resources, became the

key to China's industrial success. Indeed, much of the success story of Asia's newly industrialized economies followed this paradigm. I have referred to it as the paradigm of "*adaptive innovation*" (see Dutta & Tatum, 1988, pp. 17-46). The focus was on **innovation**, so that adaptation of imported technology could contribute to the industrial progress, enabling the pre-industrial, agriculture-dominant economies of Asia to manufacture cost and quality competitive products, part of which could be exported to the world market. They earned export revenues in convertible currencies which became the resource pool for repatriation of profits home by the foreign investors and also for their continuation of investments in China. Lawrence R. Klein (1990, JAE pp. 1-12) emphasized the fact that the growth model was truly "import-export led" while others referred to it as the export-led growth model. The perspective of China's contemporary economic development, references must be carefully appreciated (Dwight H. Perkins (JAE 1990, pp. 337-348) and Gary H. Jefferson (*ibid*, pp. 333-336).

China has successfully accomplished her present phase of industrial revolution. China now must be ready to accept the challenge of the next phase. Progression of industrial revolution is a process and the process can be sustained only by proper augmentation of human capital of China. In this presentation I argue that one of China's three challenges is necessary resource allocation toward human capital, with necessary and sufficient provisions for education, health care, and environmental protection for its man-power. Progression of industrial revolution is a process of the global economies and for China to sustain her competitive ability in the world market, participation in the process is a challenge.

Table 4 presents average annual growth rates of China's GDP, 10-year averages as well as 5-year averages. The process of progress as of 1970s must be noted. The five year period of 1990-1994 recorded an annual average rate of growth of 10.66 %, followed by subsequent years of moderation. Overheating of the economy and consequent inflationary threats had to be contained by administrative measures, softening the rate of growth of GDP.

<b>Table 4 Period Averages of Growth Rate</b>	
Time Period	GDP growth (average %)
Period Average	7.43
<b>10 Year Averages</b>	
1960-1969	2.71
1970-1979	7.44
1980-1989	9.75
1990-1999	9.71
2000-2002	7.83
<b>5 Year Averages</b>	
1960-1964	-1.41
1965-1969	6.83
1970-1974	8.08
1975-1979	6.80
1980-1984	9.64
1985-1989	9.86
1990-1994	10.66
1995-1999	8.76
2000-2002	7.83
*calculated from GDP and Annual Growth Rate table 5 below	

Table 5 and Figures 3a and 3b below present the historical profile of China's GDP growth rate from 1960 through 2002. One notes the economic turmoil of the 1960s and 1970s, and the pattern that followed the economic reform agenda of the later years.

**Table 5 GDP and Annual Growth Rate (%)**

Year	GDP (constant 1995 US\$, in billions)	GDP growth (annual %)
1960	62.92	
1961	45.87	-27.10
1962	43.07	-6.11
1963	47.52	10.34
1964	55.04	15.84
1965	64.05	16.36
1966	70.91	10.70
1967	66.86	-5.70
1968	64.12	-4.10
1969	74.96	16.90
1970	89.50	19.40
1971	95.77	7.00
1972	99.41	3.80
1973	107.26	7.90
1974	109.73	2.30
1975	119.27	8.70
1976	117.36	-1.60
1977	126.28	7.60
1978	141.06	11.70
1979	151.78	7.60
1980	163.62	7.80
1981	172.13	5.20
1982	187.79	9.10
1983	208.26	10.90
1984	239.91	15.20
1985	272.30	13.50
1986	296.26	8.80
1987	330.63	11.60
1988	367.99	11.30
1989	383.08	4.10
1990	397.64	3.80
1991	434.22	9.20
1992	495.88	14.20
1993	562.82	13.50
1994	633.74	12.60
1995	700.28	10.50
1996	767.50	9.60
1997	835.04	8.80
1998	900.18	7.80
1999	964.09	7.10
2000	1,041.22	8.00
2001	1,119.31	7.50
2002	1,208.85	8.00

Source: The World Bank - World Development Indicators

Figure 3.a

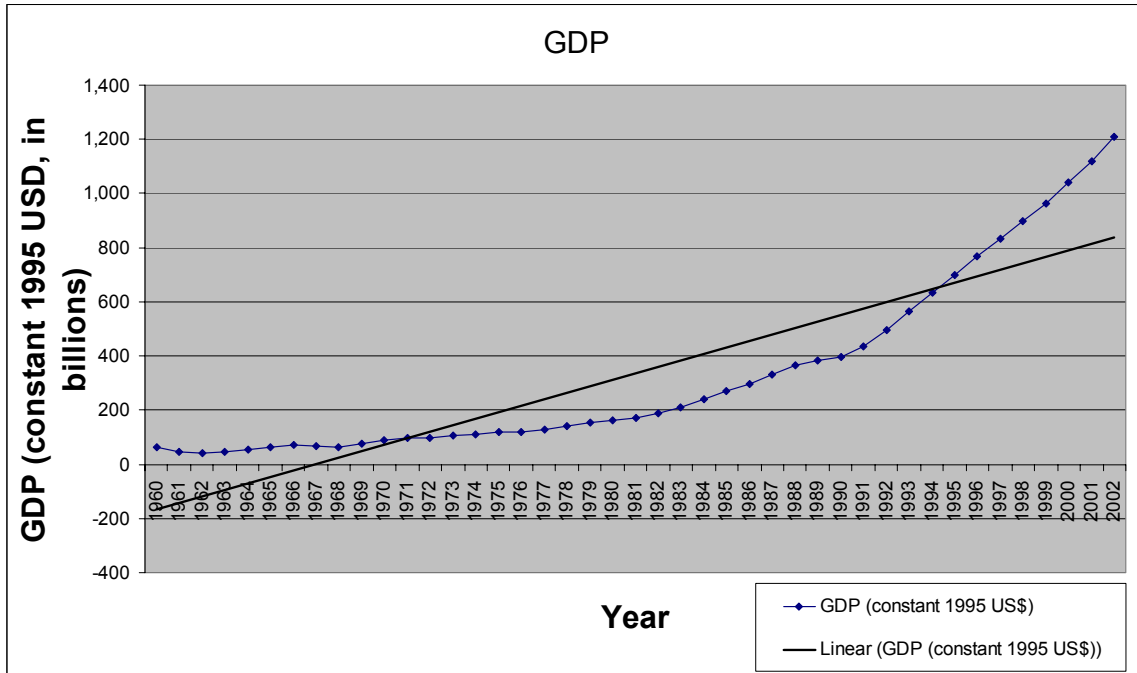
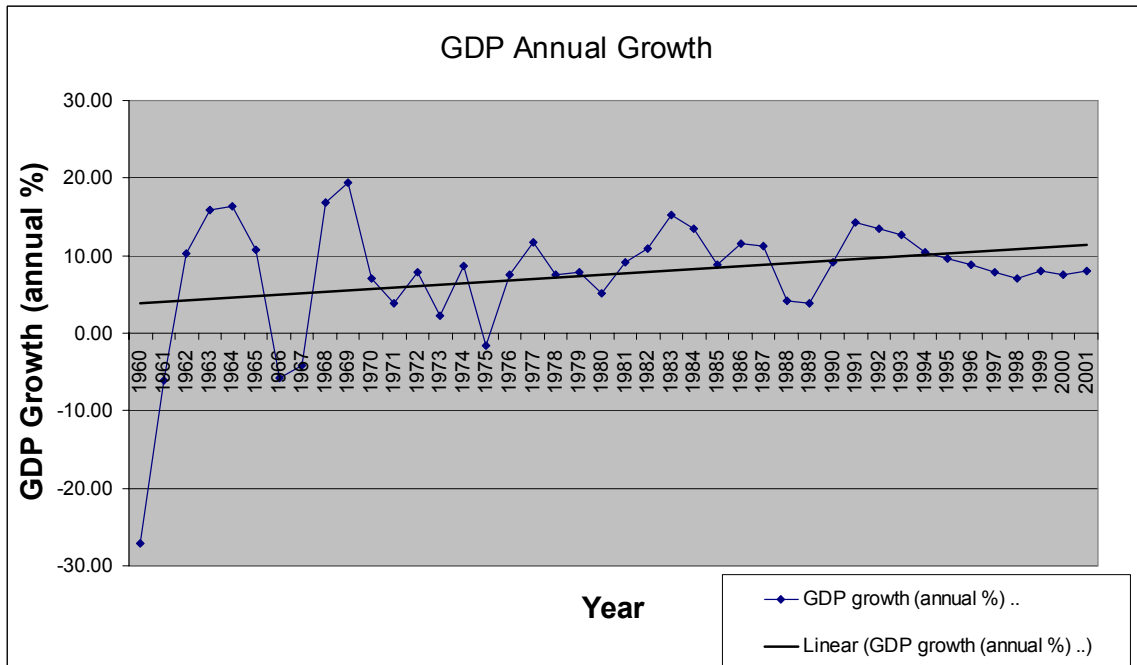


Figure 3.b



<b>Table 6</b>		<b>Employment Growth Profile</b>			
Year	Labor force (total, in millions)	* Female Labor Force (total, in millions)	* Labor Force (% of pop.)	Labor force, female (% of tot. labor)	* Females willing & able to work (% of female pop.)
1960	351	142	52.61	40.50	43.92
1961	347	141	52.51	40.62	43.96
1962	349	142	52.40	40.74	43.99
1963	357	146	52.30	40.86	44.02
1964	364	149	52.19	40.98	44.05
1965	373	153	52.09	41.10	44.09
1966	382	158	51.98	41.22	44.13
1967	391	162	51.88	41.34	44.17
1968	401	166	51.77	41.46	44.21
1969	411	171	51.67	41.58	44.25
1970	422	176	51.56	41.70	44.28
1971	436	183	51.89	41.85	44.74
1972	450	189	52.23	42.00	45.20
1973	464	195	52.56	42.15	45.66
1974	476	201	52.90	42.30	46.13
1975	488	207	53.23	42.45	46.59
1976	498	212	53.56	42.60	47.05
1977	509	217	53.90	42.75	47.52
1978	519	222	54.23	42.90	47.99
1979	529	228	54.57	43.05	48.46
1980	539	233	54.90	43.20	48.93
1981	550	238	55.33	43.37	49.50
1982	562	245	55.76	43.54	50.08
1983	575	251	56.20	43.71	50.67
1984	587	258	56.63	43.88	51.25
1985	600	264	57.06	44.05	51.84
1986	613	271	57.49	44.22	52.45
1987	628	279	57.92	44.39	53.06
1988	643	286	58.36	44.56	53.68
1989	658	294	58.79	44.73	54.30
1990	672	302	59.22	44.90	54.92
1991	683	307	59.33	44.94	55.05
1992	692	311	59.43	44.98	55.18
1993	702	316	59.54	45.02	55.31
1994	711	320	59.64	45.06	55.44
1995	720	325	59.75	45.10	55.58
1996	728	328	59.79	45.12	55.62
1997	736	332	59.83	45.14	55.66
1998	744	336	59.87	45.16	55.70
1999	751	339	59.91	45.18	55.74
2000	757	342	59.95	45.20	55.99
2001	763	345	60.01	45.19	55.34
2002	769	348	60.08	45.18	56.06

Source: The World Bank - World Development Indicators

\*calculated from World Development Indicators

Table 6 presents China's employment growth profile for 1960-2002 and demonstrates the contributions made by the country's female labor force. In 1960, the labor force was 52.6 % of the total population and females constituted 40.5 % of the total labor force. In 2002, the percentages were 60.1 % and 45.2 %, respectively.

Table 7 relates the inflow of FDI into China to the growth GDP from 1981 through 2002. During 1981-92, the share was relatively marginal. In 1993 the share moved up to 6.4 % from the low of 2.8 % in 1992. For 1996-1998, the share declined to about 5 %, while for 1999-2002 it further declined to a share of about 4%.

<b>Table 7</b>		<b>GDP and Foreign Direct Investment Inflows</b>		
Year	GDP (constant 1995 US\$, in billions)	* Foreign direct investment, net (BOP, constant 1995 \$, in millions)	Foreign direct investment, net inflows (% of GDP)	
1981	172	236		0.14
1982	188	400		0.21
1983	208	583		0.28
1984	240	1,178		0.49
1985	272	1,482		0.54
1986	296	1,878		0.63
1987	331	2,852		0.86
1988	368	3,826		1.04
1989	383	3,797		0.99
1990	398	3,910		0.98
1991	434	5,034		1.16
1992	496	13,229		2.67
1993	563	35,865		6.37
1994	634	39,467		6.23
1995	700	35,849		5.12
1996	768	37,769		4.92
1997	835	41,125		4.92
1998	900	41,619		4.62
1999	964	37,687		3.91
2000	1,041	36,995		3.55
2001	1,119	42,119		3.76
2002	1,209	47,080		3.89

Source: The World Bank - World Development Indicators

\* calculated

\* Total FDI for period (BOP, constant 1995 \$, in millions): 433,980

**Figure 4**

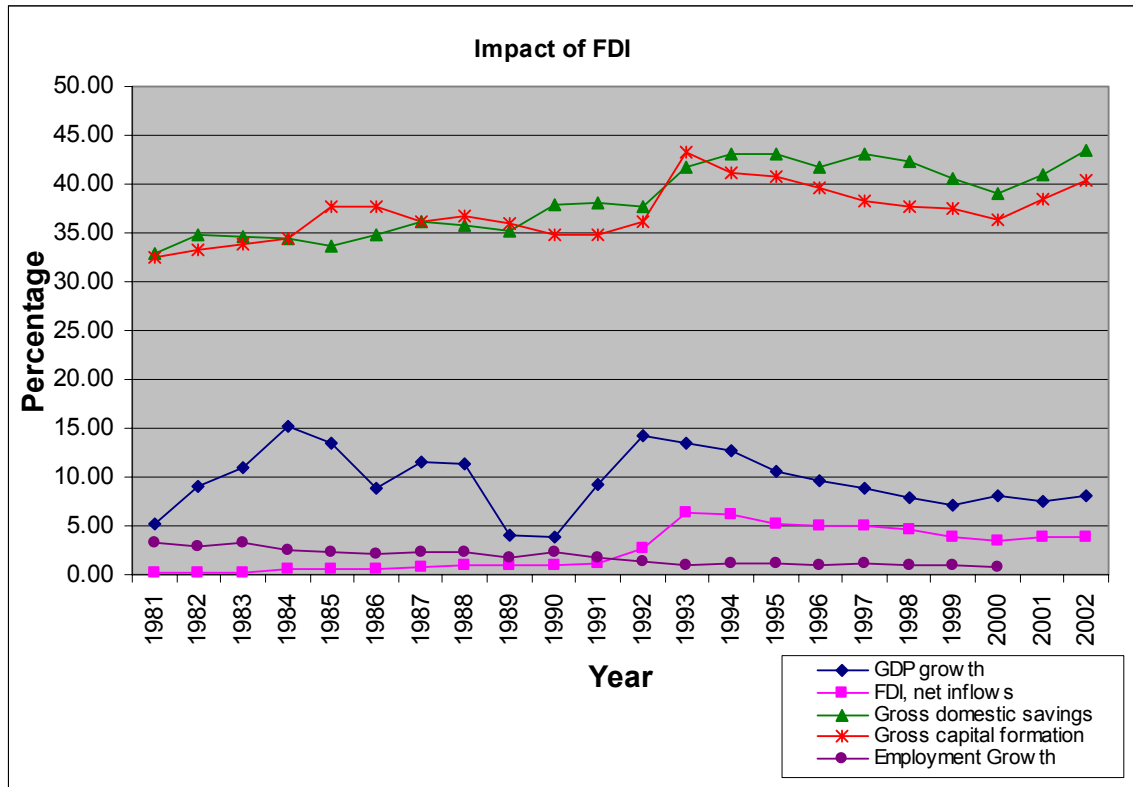


Figure 4 shows the correlation amongst GDP growth, net inflows of FDI, Gross Domestic Savings, Gross Capital Formation, and Employment Growth. The profile demonstrates that China’s socialist market economy is in general following the patterns of a market economy. Table 8 below presents the relevant data set used for Figure 4 above.

Year	Table 8				
	FDI, net inflows (% of GDP)	GDP growth (annual %)	Impact of FDI		
			* Employment Growth (annual %)	Gross capital formation (% of GDP)	Gross domestic savings (% of GDP)
1981	0.14	5.20	3.26	32.51	32.86
1982	0.21	9.10	2.91	33.24	34.80
1983	0.28	10.90	3.21	33.79	34.54
1984	0.49	15.20	2.51	34.42	34.38
1985	0.54	13.50	2.24	37.77	33.64
1986	0.63	8.80	2.06	37.70	34.82
1987	0.86	11.60	2.38	36.13	36.10
1988	1.04	11.30	2.40	36.81	35.75
1989	0.99	4.10	1.67	36.05	35.27
1990	0.98	3.80	2.33	34.74	37.95
1991	1.16	9.20	1.77	34.77	38.11
1992	2.67	14.20	1.40	36.17	37.72
1993	6.37	13.50	1.03	43.30	41.78
1994	6.23	12.60	1.10	41.19	43.06
1995	5.12	10.50	1.17	40.83	43.13
1996	4.92	9.60	1.02	39.58	41.73
1997	4.92	8.80	1.10	38.22	42.98
1998	4.62	7.80	0.93	37.71	42.34
1999	3.91	7.10	1.02	37.41	40.50
2000	3.55	8.00	0.78	36.33	39.00
2001	3.76	7.50		38.49	40.88
2002	3.89	8.00		40.42	43.37

Source: The World Bank - World Development Indicators

\* calculated

In Table 9 we offer to calculate the relationship between capital formation and FDI.

The exercise will have to be further continued once a disaggregation of inflows from

“Other Sources” will have been possible.

<b>Table 9 Capital Formation &amp; FDI</b>			
Year	Savings – Capital Formation	Gross foreign direct investment	Difference
	(in millions)	(in millions)	(in millions)
1982	727.03	440.46	1,167.49
1983	131.44	667.70	799.15
1984	-2,888.15	1,303.98	-1,584.17
1985	-18,083.48	2,043.29	-16,040.18
1986	-14,321.14	2,329.30	-11,991.83
1987	-5,043.29	3,647.54	-1,395.75
1988	-7,429.26	4,844.78	-2,584.48
1989	-5,544.58	4,670.25	-874.34
1990	10,542.65	4,840.32	15,382.97
1991	13,629.60	6,086.39	19,715.98
1992	15,564.82	17,971.92	33,536.75
1993	21,021.32	41,600.79	62,622.11
1994	25,357.15	41,802.87	67,160.02
1995	16,092.05	37,849.20	53,941.25
1996	11,642.22	39,756.57	51,398.78
1997	34,708.47	45,742.09	80,450.56
1998	36,272.87	47,725.67	83,998.54
1999	24,032.88	43,811.01	67,843.89
2000	21,771.27	44,999.18	66,770.45
2001	19,849.17	54,026.43	73,875.60
2002	27,882.90	56,675.98	84,558.88
Source: The World Bank - World Development Indicators			
all data calculated, S-I, FDI inflows * GDP, (S-I)+FDI			

Table 10 extends the analysis to correlate Gross Domestic Savings and Gross Domestic Capital Formation. (Note Gross Domestic Savings in Table 10 below are calculated: GDP x Gross Domestic Savings Percentage.)

<b>Table 10 Gross Domestic Savings and Gross Capital Formation</b>					
Year	Gross capital formation (constant 1995 US\$, in billions)	Gross capital formation (% of GDP)	Gross capital formation (annual % growth)	Gross domestic savings (% of GDP)	* Gross domestic savings (constant 1995 US\$, in billions)
1960	24.45	35.54			
1961	9.68	18.11	-60.40		
1962	5.08	10.51	-47.53		
1963	8.67	16.48	70.61		
1964	12.58	20.10	45.21		
1965	18.07	23.17	43.59		
1966	22.62	27.13	25.20		
1967	17.22	19.44	-23.90		
1968	18.28	19.13	6.20		
1969	20.79	19.84	13.70		
1970	31.89	29.02	53.40	28.96	25.92
1971	34.82	29.55	9.20	29.37	28.13
1972	33.33	27.40	-4.30	27.22	27.06
1973	38.12	29.44	14.40	29.91	32.08
1974	39.34	29.01	3.20	28.76	31.56
1975	44.10	30.17	12.10	30.19	36.01
1976	41.06	27.93	-6.90	28.23	33.13
1977	44.96	28.49	9.50	28.84	36.42
1978	56.25	38.02	25.10	37.70	53.17
1979	58.16	36.51	3.40	35.82	54.37
1980	61.36	35.19	5.50	34.93	57.16
1981	59.40	32.51	-3.20	32.86	56.56
1982	64.62	33.24	8.80	34.80	65.35
1983	71.80	33.79	11.10	34.54	71.93
1984	85.37	34.42	18.90	34.38	82.48
1985	109.69	37.77	28.50	33.64	91.61
1986	117.48	37.70	7.10	34.82	103.16
1987	124.41	36.13	5.90	36.10	119.37
1988	138.97	36.81	11.70	35.75	131.54
1989	140.64	36.05	1.20	35.27	135.09
1990	140.36	34.74	-0.20	37.95	150.90
1991	151.87	34.77	8.20	38.11	165.50
1992	171.46	36.17	12.90	37.72	187.02
1993	214.15	43.30	24.90	41.78	235.17
1994	247.56	41.19	15.60	43.06	272.91
1995	285.93	40.83	15.50	43.13	302.02
1996	308.62	39.58	7.94	41.73	320.26
1997	324.23	38.22	5.06	42.98	358.94
1998	344.91	37.71	6.38	42.34	381.18
1999	366.43	37.41	6.24	40.50	390.47
2000	384.27	36.33	4.87	39.00	406.05
2001	437.76	38.49	13.92	40.88	457.61
2002	496.42	40.42	13.40	43.37	524.30

Source: The World Bank - World Development Indicators

China's rate of industrialization and GDP growth rate became spectacularly high and China became a competitor in the world economy. Countries that invested in China made profits at a market rate and experienced economic growth without inflation. Much to the surprise of many, the traditional Phillips Curve came to be held in abeyance and no inverse relationship between higher rate of employment and growth, and the price level became evident in USA in late 1990s.

Joint ventures are operationally more problematic unless the cooperating economies with joint ventures are at parallel level of industrialization with competitive ability to absorb market shocks. Paradigms that worked for the reconstruction of WWII-ravaged economies in Europe and Asia must remain out of our discussion. Inflow of joint ventures into several other Asian countries in the post-WWII decades under one or another mutual pact also do not belong to our discussion.

Joint ventures between corporate units from mature industrialized rich economies and corporations in newly industrializing economies will have to overcome pragmatic considerations. What will be the basis of partnership? If the foreign investors will be allowed to own more than 50 percent of the investment, the domestic business leaders who built up the industry to begin with will be reduced to a position of junior partnership. If the foreign investors will be invited to own less than 50 percent, they will remain condemned to junior partnership forever. A fifty-fifty partnership may be a novel paradigm of non-action.

Let me restate the six points I have argued in support of foreign direct investment (FDI). (see Dutta 1991, 1999, 2000; Dutta & Merva 1990):

1. With commitment to profit maximization, FDI will bring with it optimum technology and management style. They will have to compete with foreign investors in China from other investing countries. Since the ownership is 100 percent, technology and management style will remain 100 percent under the investing corporate leadership.
2. To begin with foreign investments from mature industrialized countries where employment rate is high, wage rate is consequently high, foreign investors will depend on local labor; ordinary labor will find jobs and earn relatively higher incomes. Foreign investors could not bring all skilled workers: engineers, accountants, economists, research scientists, managers from their respective home countries. Costs would be too high. They will search for talent in China and create jobs for them at competitively high salaries.
3. Foreign investors will have an interest to repatriate profits home, at least a part of it. To do so, they will export some of their products manufactured in China to the world market to earn export revenue in convertible foreign currencies. In the process the manufactured products in China will be introduced to the world market and win consumer acceptance globally. The net result is China's emergence as a member of the world economy.
4. As China's exports grow, her foreign exchange reserve grows and contributes to her international credit rating. China's ability to offer credit instruments in the international market warrants recognition. By the end of 2003, China's foreign exchange reserves have reached the benchmark of US\$ 434 billion.

5. In the process the volume of world trade has expanded enabling China to make a contribution to global economic welfare. China's economic gain is essentially a component of the world economic gain.
6. Competition from foreign investors will contribute to the upgrading of efficiency of China's state enterprises by way of inducing them to produce cost and quality competitive products for the Chinese consumers. If they fail to do so, they will be required to accept the market decision and accept insolvency and/or liquidation. Protection of state enterprises from market competition became responsible for the poor performance of the Chinese economy. Competition from the foreign investors will correct the situation and contribute to the overall efficiency of the Chinese economy in general. (see Wen-Hui Wei (2004) for a survey of official studies by various Ministries of the Chinese Government in support of the above six points.)

**NOTE: THE POLICY OF MARKETIZATION OF STATE ENTERPRISES HAS BEEN IN PROGRESS.**

#### II. A SOURCES OF FDI: A DIGRESSION

A review is in order. Inflows of FDI into China have come from mature industrialized countries: USA, Canada (North America), Japan, Korea, and European Union (EU), supplemented by inflows from Taiwan, Hong Kong, Free Trade Ports (Virgin Islands, Cayman Islands, and Samoan Islands), and Association of South East Asian Nations (ASEAN).

Table 11 Realized FDI Inflow into China by Selected Countries/Regions (1986-2003)

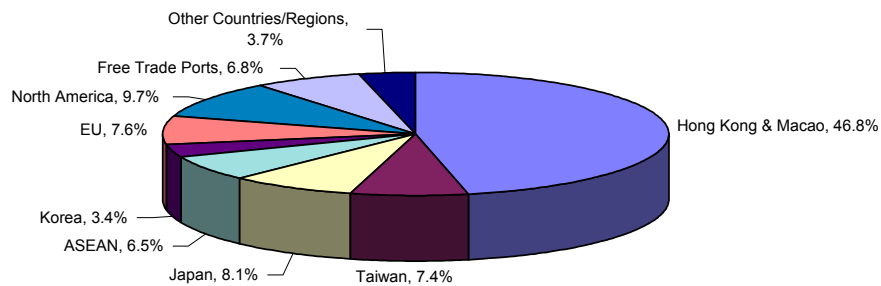
Unit: US\$ billion

	Hong Kong		Taiwan		Korea		Free Trade Ports		USA		Japan		EU		ASEAN	
	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%
1986	1.33	59.3%							0.33	14.7%	0.26	11.6%	0.15	6.7%	0.02	0.9%
1987	1.59	68.7%							0.26	11.2%	0.22	9.5%	0.05	2.2%	0.04	1.7%
1988	2.07	64.8%							0.24	7.5%	0.51	16.0%	0.18	5.6%	0.04	1.3%
1989	2.04	60.1%	0.15	4.4%					0.28	8.3%	0.36	10.6%	0.18	5.3%	0.10	2.9%
1990	2.02	57.9%	0.22	6.3%					0.46	13.2%	0.50	14.3%	0.17	4.9%	0.06	1.7%
1991	2.58	59.2%	0.47	10.8%			<0.01	<0.1%	0.32	7.3%	0.53	12.2%	0.26	6.0%	0.09	2.1%
1992	7.71	70.0%	1.05	9.5%	0.12	1.1%	<0.01	<0.1%	0.51	4.6%	0.71	6.5%	0.25	2.3%	0.27	2.5%
1993	17.44	63.4%	3.14	11.4%	0.38	1.4%	0.01	<0.1%	2.06	7.5%	1.32	4.8%	0.65	2.4%	1.01	3.7%
1994	19.82	58.7%	3.39	10.0%	0.73	2.2%	0.13	0.4%	2.49	7.4%	2.08	6.2%	1.51	4.5%	1.87	5.5%
1995	20.19	53.8%	3.16	8.4%	1.05	2.8%	0.38	1.0%	3.08	8.2%	3.11	8.3%	2.14	5.7%	2.62	7.0%
1996	20.85	50.0%	3.47	8.3%	1.50	3.6%	0.66	1.6%	3.44	8.2%	3.68	8.8%	2.74	6.6%	3.18	7.6%
1997	21.55	47.6%	3.29	7.3%	2.23	4.9%	2.06	4.5%	3.24	7.2%	4.33	9.6%	4.19	9.3%	3.42	7.6%
1998	18.51	40.6%	2.92	6.4%	1.80	4.0%	4.48	9.8%	3.90	8.6%	3.40	7.5%	3.98	8.7%	4.21	9.2%
1999	16.36	40.5%	2.60	6.4%	1.27	3.2%	3.24	8.0%	4.22	10.4%	2.97	7.4%	4.48	11.1%	3.29	8.1%
2000	15.50	38.1%	2.30	5.6%	1.49	3.7%	4.74	11.6%	4.38	10.8%	2.92	7.2%	4.48	11.0%	2.84	7.0%
2001	16.72	35.7%	2.98	6.4%	2.15	4.6%	6.65	14.2%	4.43	9.5%	4.35	9.3%	4.18	8.9%	2.98	6.4%
2002	17.86	33.9%	3.98	7.5%	2.72	5.2%	8.18	15.5%	5.42	10.3%	4.19	7.9%	3.71	7.0%	3.20	6.1%
2003	17.70	33.1%	3.77	7.0%	4.49	8.4%	7.63	14.3%	4.20	7.8%	5.05	9.4%	3.93	7.3%	n.a.	n.a.

Source: Ministry of Commerce of the P. R. China, China Statistical Yearbook various issues. Free Trade Ports includes: Cayman Islands, Virgin Islands and Samoan. FDI reported prior to 1988 include other foreign investment.

<b>Table 12</b>	<b>Share of FDI Stock in China By the end of 2002</b>
Hong Kong & Macao	46.8%
Taiwan	7.4%
Japan	8.1%
ASEAN	6.5%
Korea	3.4%
EU	7.6%
North America	9.7%
Free Trade Ports	6.8%
Other Countries/Regions	3.7%

**Figure 5 Source-Country Composition of FDI Stock by the End of 2002**



Source: Ministry of Commerce of P. R. China. China Statistical Yearbook, various issues. Note: Free Trade Ports include: Virgin Islands, Cayman Islands and Samoan. North America includes USA and Canada. Adapted from the Doctoral Dissertation by Wenhui WEI, 2004.

In 2002, 28.8 percent of FDI into China came from North America, Japan, Korea and EU. Taiwan had a share of 7.4 percent. Be it noted that Taiwan became a high income industrialized economy with a history of its own. Principals of pre-communist market economy of main land China migrated to Taiwan with their entrepreneurial leadership,

and global market access plus capital funds. They offered an integrated strategy for economic development and industrialization with the rest of the world, especially with the USA. Successful management of the macroeconomic policy enabled Taiwan to escape from the Asian financial crisis of 1997-98. Taiwan became a savings surplus country and investment opportunities in China were not missed. Independent of hostile political relationship between Taiwan and China, the economic relationship between the two economies has been so very productive. It has been pointed out that Taiwan's investment in China have been profit oriented, given the shared ethnicity, language, culture, religion, and understanding of the Chinese business procedures which is often too complex for other foreign investors (see Dutta 1999). China does not consider FDI from Taiwan as foreign investment while Taiwan enjoys the freedom to make its investments in special zones designated for foreign direct investments (FDI) and benefit from consequent foreign investment privileges effective in these special zones. It is to the economic gain of all the peoples on both sides of the Channel.

**NOTE: CHINA IS DEMANDING INVESTORS FROM TAIWAN TO EMPLOY MORE LOCAL LABOR AT ALL LEVELS. HOWEVER, GIVEN THE LEVEL OF INDUSTRIALIZATION OF TAIWAN, WHICH APPROXIMATES THE LEVEL OF MATURE INDUSTRIALIZED ECONOMIES, TAIWAN'S WAGE LEVEL IS VERY HIGH AND THE TAIWANESE INVESTORS IN CHINA CANNOT AFFORD TO BRING WORKERS FROM HOME FOR EMPLOYMENT IN CHINA.**

It is to be noted that in 2002, as much as 53.6 percent of FDI came from Hong Kong / Macao and Free Trade Ports. ASEAN share in the year was 6.5 percent. It has been

suggested by some that 60.1 percent of FDI into China came from the Chinese *diaspora*. Is this an overstatement? Hong Kong and Macao and Singapore in ASEAN have historically been outposts of world financial centers under the British imperial regime. One points out to the fact the ownership of the Hong Kong Shanghai Banking Corporation (HSBC) belongs neither to Hong Kong nor to Shanghai. There is no easy way to obtain data for the specific ownership of FDI flows from these sources into China or for that matter into any other country. National ownership of the FDI flows into China from FREE TRADE PORTS, which offer tax shelters to all foreign nationals, remains to be carefully analyzed. Exclusivity of national ownership of all FDI inflows into China from all these sources can at best be rationalized by the fact that their destination is CHINA. China is a very FDI friendly economy with competitively high profit earnings and provisions for repatriation of profits home a la exports of at least a part of products manufactured in China to the world market and earning of export revenues in convertible currencies. More research remains to be done. China is an attraction for foreign direct investments (Hsiao and Hsiao 2004).

I beg your indulgence to suggest that what is important for an economy in its plan for accelerated rate of industrialization and economic growth is **to be perceived by the rest of the world as a foreign investment friendly country, especially FDI - friendly, without making a case for inflows of investments from the specific country's diaspora.** Do we know of another economy with a Hong Kong – Macao - Taiwan trio to help facilitate FDI inflows? Inflow of FDI from mature industrialized economies will have substantial impact for the 6-point scores we have stated earlier. In 2002, China received a little more than 50 percent of FDI inflows from such countries.

## II. B CHALLENGES AHEAD

Let us review the three arguments we have stated to begin with:

1. No economy can continue to grow at an average annual rate of 10 percent indefinitely. Bottlenecks in terms of shortages of labor, specific skill of the labor, physical capital, and technology emerge in the process and crisis management will be in order. We do not plan to discuss if the Republic of Korea borrowed too much and invested too much, or if Thailand made a commitment to over-investment. Nor will our plan be to examine the economic-cum-political debacles in Indonesia and in The Philippines. How Malaysia got out of the financial crisis at the soonest possible time has been discussed elsewhere. However Asian financial crisis of 1997-98 has been a painful reality.

**Table 13 Per Capita Productivity of Labor (N) at an annual rate: 1960-1985**

<u>Country</u>	<u>%</u>
United States	1.2
United Kingdom	2.3
West Germany	3.4
France	3.7
South Korea	5.3
<u>Japan</u>	<u>5.9</u>

Source: Global Competition: The New Reality  
Report of the President's Commission on Industrial Competitiveness,  
Washington, DC, 1985, Government Publication, p. 28

Bottlenecks have been a part of the growth process of most mature industrialized economy inclusive of the USA, the richest economy in this world of ours. This has been a part of the free market economy and the study of the theory of business cycles has been so crucial. In 1980s, the USA experienced a productivity gap and the latest recession in 2002 is on record.

It took some efforts to correct the productivity gap. High-tech production *a la* computerization of the production process became a solution. American productivity in the 1990s became competitively high. Soon came the bubble in Silicon Valley and the recession in 2002 followed. Failure of the centrally planned command economies of the communist countries with no target for accelerated rate of industrialization and growth is on record. The option is to plan for the softening of the high rates of growth to minimize adverse shocks to a given economy. This is not to return to thesis of the *sustainable rate of growth* of an economy, as many economists argue for. An accelerated rate of industrialization and growth of GDP is a necessary condition for a pre-industrialized agriculture-dominant economy, as was China, or the economy cannot become a competitive actor in the world market. Some have called it the theory of *catching up*. I have argued that if the benchmark for average annual rate of growth for a mature industrialized economy is at 4 percent, the newly industrialized economies may have a period of accelerated rate of growth at about 10 percent. A sound economic agenda must be in place to soften the rate of growth at the time when it is necessary for the given economy. The recent performances of the newly industrialized economies in Northeast Asia and Southeast Asia may provide a reference point for China.

2. China's inter-regional income distribution remains a challenge. The challenge is no less for income distribution across the classes of peoples in a given region. True this is a challenge for most mature industrialized economies. In the United States, amongst the fifty states in the Union, the income gap between the top five states and the bottom five states have been noted. Income gap across classes in one state, say the State of New Jersey, which is one of the top five states based on family median income, is well documented. Several hundred millionaires and billionaires live in the state along with millions of low income or poor New Jerseyans facing serious economic hardships. China cannot afford to ignore her share of the income distribution problem, across the 31 provinces or within a given province. If one man in an economy is poor the rest of the people remain a little bit poorer. China must be able to share her affluence with all the people of China across the 31 provinces over the immense territory.

The World Development Indicators reported in 2001 nearly 17% of people in China were living on less than \$1 a day and nearly 47% of the population was living on less than \$2 a day. Reportedly at the opposite end, 10% of the people in China have become progressively high income groups. The World Bank Indicators (2004, p. 60, ranked by per capita consumption when data refers to consumption shares by percentiles of population) reports the income distribution profile of China: lowest 20% at 4.7%, second 20% at 9.0%, third 20% at 14.2%, fourth 20% at 22.1%, highest 20% at 50.0%, and with the top 10% at 33.1% . China, with her gross national income per capita at US\$ 960, (2002 *ibid.*, p. 14, calculated using the *World Bank Atlas Method*) lags significantly behind several of her Asian neighbors.

3. Accelerated rate of growth cannot be sustained if productivity, defined by average annual output per unit of labor, is not increasing to match the growth rate. This relates to the augmentation of human capital by way of making sufficient provisions for education health care and environmental pollution containment. The Chinese labor has been known for its competitive ability and skill. Now China must accept the global challenge.

Free movement of labor is an essential part of open economic policy with free flow of trade in goods and services and free flow of investment. One model is to allocate available limited resources toward necessary augmentation of the supply of human capital in the economy. The other model is to adapt immigration and naturalization laws to invite necessary quantity and quality of labor from other countries. Many mature industrialized countries inclusive of USA, Germany, France, United Kingdom, Japan Australia, and New Zealand have been receiving immigrants with necessary skill by way of following this model. However, at a given time there is a limited supply of human capital in the global market. The core issue is addition to available human capital by optimum allocation of resources to that end. Given the immense magnitude of the Chinese economy, China must prioritize allocation of resources to face this challenge.

### III.A MACROECONOMIC AGENDA

I argue that an appropriate macroeconomic agenda can address to all the three challenges. Senator Clinton has written a famous monograph, IT TAKES A VILLAGE Each individual in splendid isolation will never become what we should become. We need to belong to a village, to a group, to a society and we accept membership of a nation-state economy. Several hundred years ago, an Indian political economist

Chanakya (also known as Kautilya) wrote a treatise, ARTHASHASTRA, which taught the principles of taxation, a core area of macroeconomic agenda for India. (The book is now translated and published in English but not widely circulated).

Adam Smith in his WEALTH OF NATIONS advised his readers what is good for East India Company is not necessarily good for the people of England. How can we ever forget his “Canons of Taxation”? Karl Marx in his DAS CAPITAL presented an articulate treatise on macroeconomics, as Lawrence R. Klein refers to in his THE KEYNESIAN REVOLUTION. John Maynard Keynes in his GENERAL THEORY OF EMPLOYMENT, MONEY AND INTEREST made an eloquent exposition of the theory of macroeconomics.

As China moved on to the paradigm of the Socialist Market Economy the theory of macroeconomics posed to be a critical study (see Dutta-Chang-Lin 1990). Allocation of available limited resources toward maximization of economic gains of a group of people who have unlimited ends leads to what we may call the theory of decision-making. The optimum decision-making will result in optimum output and income creation and its optimum distribution to the factors of production will follow. That is the study of economics. The study of economics to be complete must cover both its micro and macro components.

In traditional communist economic model individual actors, households and business units – were denied freedom to choose and the central planning authority made resource allocations as per their adopted agenda. In the extreme case of capitalist market economy, the individual actors assume their freedom of choice – for households the doctrine of consumer sovereignty and for business units the doctrine is profit maximization.

However, the system cannot be operationally successful in the absence of an optimum macroeconomic framework.

The framework will provide one money for the system to be managed by a lawfully constituted monetary authority. Provision will also be made for a fiscal system to be managed by a social authority, a government representative of the people of the system. A macroeconomic framework for a market economy, be it capitalist or socialist, is very much in order. Even the proactive supply-side economists who argue that government is the problem, not a solution to all problems and a return to the pure market system by way of a tax-cut paradigm, have failed to propose a zero rate of taxation and a zero government establishment. Indeed “gently expanding” government activity was the theme of President Eisenhower, who could not be accused of being a champion of liberalism. For his or her survival and fuller manifestation, an individual’s belonging to a “village”, to a social group, managed by a representative government, hopefully democratic and pluralistic.

III.B CHINA’S MACROECONOMIC STRUCTURE: THE PEOPLE’S BANK OF CHINA (PBC) & THE GOVERNMENT BUDGET: THE CASE FOR A RESTRUCTURING

III.B (i) THE PEOPLE’S BANK OF CHINA & CHINA’S MONETARY POLICY

China’s macroeconomic structure defines her monetary and fiscal policy. The People’s Bank of China (PBC) is China’s central bank with its lawful authority and responsibility to manage China’s monetary policy. The PBC thus discharges the two core

functions of a central bank - the quantity of money to be supplied to the Chinese economy and the core rate of interest.

<b>Table 14 Money &amp; Rates of Interest</b>							
Year	Money (current LCU) (in billions)	Money and quasi money (M2) as % of GDP	*M2 (in billions)	Deposit interest rate (%)	Real interest rate (%)	Lending interest rate (%)	Inflation, CPI (annual %)
1978	58.04	24.12	34.02				
1979	92.15	27.46	41.67				
1980	114.88	33.19	54.30	5.40	1.21	5.04	
1981	134.52	37.52	64.58	5.40	2.67	5.04	
1982	148.84	40.07	75.25	5.76	7.41	7.20	
1983	174.89	41.95	87.35	5.76	6.07	7.20	
1984	244.94	44.01	105.58	5.76	2.20	7.20	
1985	301.73	47.26	128.69	7.20	-2.02	7.92	
1986	385.90	55.01	162.96	7.20	3.17	7.92	
1987	457.40	59.80	197.70	7.20	2.72	7.92	7.22
1988	548.74	58.81	216.43	8.64	-2.79	9.00	18.74
1989	583.42	62.08	237.82	11.34	2.33	11.34	18.33
1990	700.95	70.29	279.50	8.64	3.49	9.36	3.06
1991	898.78	76.98	334.24	7.56	1.79	8.64	3.54
1992	1,171.43	80.57	399.54	7.56	0.68	8.64	6.34
1993	1,546.94	86.63	487.58	10.98	-3.12	10.98	14.58
1994	1,967.43	88.33	559.75	10.98	-7.44	10.98	24.24
1995	2,308.35	92.05	644.64	10.98	-0.99	12.06	16.90
1996	2,756.38	100.79	773.55	7.47	3.93	10.08	8.32
1997	3,480.65	112.78	941.79	5.67	7.76	8.64	2.81
1998	3,869.05	126.00	1,134.21	3.78	9.00	6.39	-0.84
1999	4,697.64	138.06	1,331.01	2.25	8.22	5.85	-1.41
2000	5,454.10	143.63	1,495.48	2.25	4.86	5.85	0.26
2001	6,168.85	150.22	1,681.43	2.25	4.61	5.85	0.46
2002	7,266.54	163.76	1,979.57	1.98	5.62	5.31	-0.77

Source: The World Bank - World Development Indicators

\* Calculated from World Development Indicators

The figures below point to the correlation between money supply, growth of GDP, and rate of inflation (Figure 6) and money supply and interest rates (Figure 7).

Economic theory teaches us an increase in money supply is necessary to support growth of GDP. However if growth fails, an increase in money supply will result in an increase in the rate of inflation. China has experienced periodic inflations and adopted necessary

measures to contain inflation. Formulation of a proper monetary policy and its implementation must warrant attention.

Figure 6

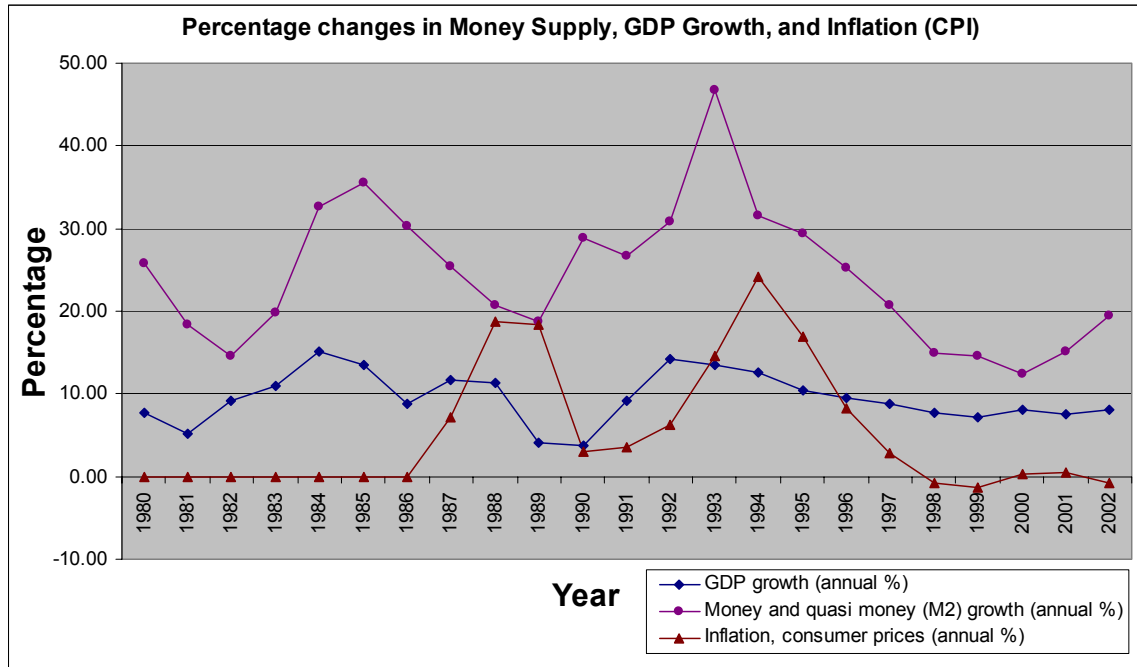


Figure 7

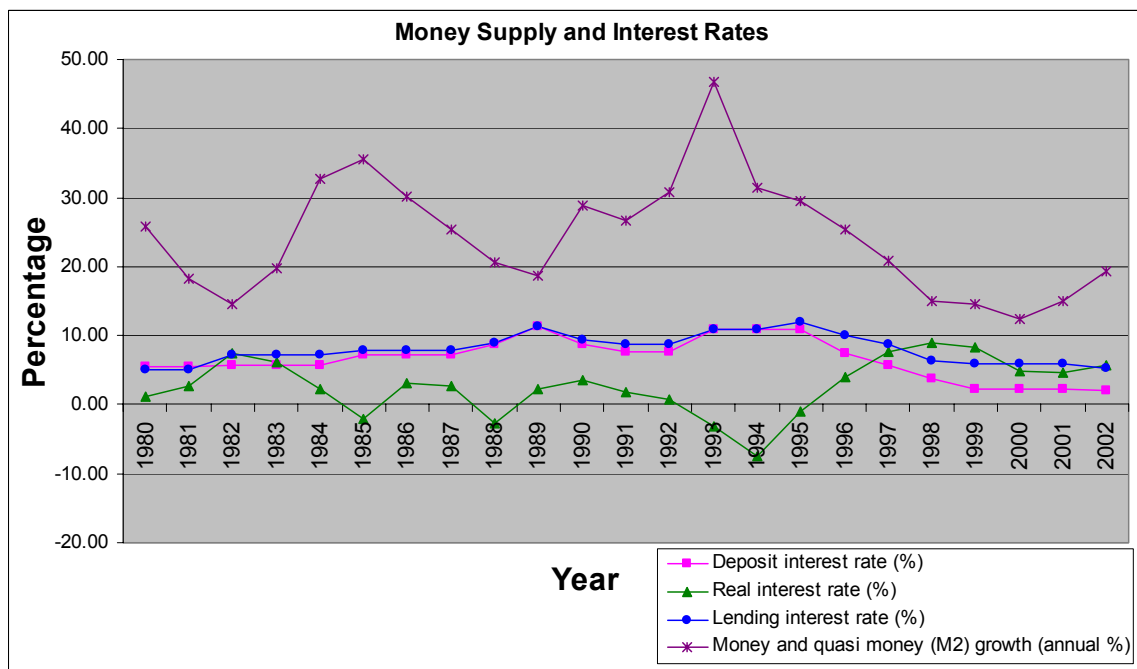


Figure 7 relates money supply and interest rates. Further research will be needed to analyze three different types of interest rates and its correlation with money supply.

Two comments are in order.

1. Let us examine first the issue of independence of the PBC. Typically a central bank enjoys a degree of independence from the political authority running the government. The central banking law defines that authority by giving a fixed tenure to the office of the principals of the central banks. In the USA, the Chairman of the Federal Reserve System is nominated by the President and approved by the United States Senate, has a fixed tenure and he/she cannot be removed from the office for the period without going through the process of impeachment. The European Central Bank (ECB), established on January 1, 1999, manages the monetary policy for the twelve EU members. (ECB has since added ten new members.) The six members of the ECB's Executive Committee have a fixed tenure for seven years and they cannot be removed during their tenure. They of course are barred from seeking reappointment.

True, individual members at a time may be a member of one or another political party. However, the independence *à la fixed tenure ensures that the decisions taken by the individuals for developing and administering the monetary policy will be immune from political and partisan politics in a pluralistic democratic form of government.* China may reform the Central Bank Act and ensure this independence of the monetary authority as exercised by the PBC (Dutta 1995 JAE pp.291-96; 2002, JAE 13.4, and UNITAR Workshop, July 04, 2002, JAE 11.1, 2000 (translated and published in Japanese 2001, abridged versions in Korean and Chinese 2002), JAE 1996, 7.3, pp. 357-364, and *ibid*

1996 JAE 7.3 pp. 537-549, “ PRC and Asia-Pacific Economic Cooperation,” (1998, mimeo), an invited lecture at the international symposium on the occasion of the 40<sup>th</sup> founding anniversary of SASS, Shanghai, China; Lawrence R. Klein 1995 Journal of Asian Economics, pp.261-65; *ibid*, 1998 9.1. pp.1-11, *ibid*. 1990 1.1, pp.1-12, *ibid*, 1994 pp. 313-334, “The Treatment of Pacific Economies in the LINK System,” “Use of Econometric Models in the Policy Process. In P. Ormerod (Ed.). Economic Modelling, pp. 309-29. London: Heinemann. 1979, “An Introduction to Econometric Forecasting and Forecasting Models. (Jointly with Young, R. M.), 1980, Lexington Books; John M. Letiche Journal of Asian Economics 2000 11.3 pp.276-300, *ibid* 1998 9.2, pp. 181-191, *ibid*, 1993 4.1. pp.191-206; Robert P. Forrestal 1995, JAE 267-74, Otmar Issing 2001 Journal of Asian Economics 12.1, pp.1-20, 1999 Journal of Common Market Studies, 37, pp.503-509, 1996 Occasional Paper #98, Europe: Political Union Through Common Money, The Institute of Economic Affairs, London, UK

Independence based on fixed tenure immune from easy political interferences will enable the principals of PBC to take an independent non-partisan review of the state of the economy and make necessary decisions with respect to the quantity of money to be supplied and the core rate of interest where market conditions will be the dominant factors. The PBC authorities will make presentations to the National People’s Congress and to the governmental authorities with their evaluations of the state of the economy. The PBC will also make periodic direct reports which may be called RED REPORTS. Transparency is the issue. Let no telephone power make them do what they elected not to do based on their review of the state of the economy.

Significance of the role of monetary policy management can hardly be overstated. In recent years, Federal Reserve System raised the core rate of interest five times in a year in 1998 and reduced it 11 times in 2002. In 1998 the goal was to contain the rate of growth of GDP and thus the rate of inflation. In 2002, the objective was to induce growth. Among others, international uncertainty and decline in consumer confidence were cited as two of many other difficult points monetary policy could not address to. We all have read the prophetic assertion that it is easy to make a horse *not* to drink water, and it is not easy to make the horse drink water. The issue of the consumer confidence level must remain the focus. One concludes that international uncertainty can not be contained by monetary policy.

In my presentation at the Shanghai Conference in 1994, I made a second point. Given the dimension of the Chinese economy spread over an immense geographical territory, and given the inter-regional differences in the state of the Chinese economy across her 31 provinces, there exists a good case for institution of regional PBC system under the umbrella of the PBC in Beijing. The Federal Reserve System in USA has done very well with its twelve regional FEDs. Each regional FED has the special responsibility for studying the state of the economy in its region and make necessary adaptations of the monetary policy, subject of course to the approval of the Federal Reserve System. One of the three issues of post-industrial revolution challenges stated in this study is interregional income distribution. Each regional PBC will do its job, under coordination of the PBC in Beijing, and the monetary policy can be related to the exigencies of regional divergences.

On June 3<sup>rd</sup>, 2002, at a personal conference with Vice Governor Shuqing Guo at his PBB office in Beijing, I was assured that necessary legal provisions are in place for the institution of regional PBCs. The process of implementation of the program is a matter of time. I was advised that independence of PBC Governor by way of giving him/her a fixed tenure had never been an issue under consideration of the Chinese authority.

III. B (ii) EXCHANGE RATE

Management of foreign exchange reserve and China's exchange rate relates to the monetary policy, as formulated and administered by the PBC. China's currency is pegged to US\$ 8.28 (2002) at a Unitary Rate (World Development Indicators, The World Bank 2004, p. 280). Given the Purchasing Power Parity (PPP) conversion rate at 1.8 and the Ratio of PPP conversion factor to the official exchange rate, The World Bank reports the real effective exchange rate (index 1995 = 100) is 121.4 for 2002.

<b>Table 15 Foreign Exchange Reserves</b>			
Year	Total reserves (includes gold, current US\$) in billions	Total reserves minus gold (current US\$) in billions	* Gold Reserves in billions
1977	4.46	2.35	2.11
1978	4.45	1.56	2.89
1979	8.71	2.15	6.55
1980	10.09	2.55	7.55
1981	10.11	5.06	5.05
1982	17.15	11.35	5.80
1983	19.83	14.99	4.85
1984	21.28	17.37	3.92
1985	16.88	12.73	4.15
1986	16.42	11.45	4.96
1987	22.45	16.30	6.15
1988	23.75	18.54	5.21
1989	23.05	17.96	5.09
1990	34.48	29.59	4.89
1991	48.17	43.67	4.49
1992	24.85	20.62	4.23
1993	27.35	22.39	4.96
1994	57.78	52.91	4.87
1995	80.29	75.38	4.91
1996	111.73	107.04	4.69
1997	146.45	142.76	3.69
1998	152.84	149.19	3.66
1999	161.41	157.73	3.69
2000	171.76	168.28	3.49
2001	220.06	215.61	4.45
2002	297.74	291.13	6.61

Source: World Development Bank - World Development Indicators

\* calculated, Total Reserves - Total Reserves minus gold

Given China's foreign exchange reserve at some US\$ 400 billion, pressure on China to make its currency convertible is mounting. The issue warrants more careful investigation. Pegging a currency to US dollar is not unique for China. Other currencies have been so pegged to the US dollar. Ever since fixed gold value of US dollar was removed on August 15, 1971, exchange rate coordination has become an issue of concern. The International Monetary Fund (IMF) struggles to do its assignment for coordination of exchange rates of 184 member nations. A return to 100 percent gold

standard, as some economists hoped for, failed to materialize. At a conference of the Group of Five in New York City in 1987 the leading five industrialized rich countries made an exclusive arrangement. The G-5 soon became G-7 and now with Russia, it is the G-8. At the same time, as of January 1, 1999, twelve EU economies inclusive of Germany, France, and Italy adopted one currency and for them the exchange rate management ceased to be an economic issue. Most of the remaining member nations of IMF contributed marginal shares to its share capital based on their respective shares of world output and trade, which were marginal. Restructuring of the IMF and the World Bank remains an issue of concern. Pending that, pegging currencies of China and of other countries to that of a dominant currency, the US dollar which represents about a fifth of world output and trade, may remain a valid option. A competing currency, the Euro of EU may soon emerge as a competing currency for pegging, as Euro's share of world output and trade will be competitively larger, even larger.

A country with a huge foreign exchange reserve is expected to make investments abroad. China is doing so by buying US bonds. This matches the fact that much of China's foreign exchange reserve is earned on exports of manufactured products in China, much attributable to foreign direct investments in China. Lawrence R. Klein and Robert A. Mundell have expressed their views in this respect.

## II. B (iii) CHINA'S NATIONAL BUDGET AND FISCAL POLICY

The Chinese Government budget provides the other aspect of China's macroeconomic framework. The tax policy will be a tool to correct the imbalance of income distribution amongst various income groups in a province or a region. Canons of taxation are well known. A progressive tax policy must be the norm. Revenues collected and expenditures incurred by the government will close the budget each fiscal year. The options are a balanced budget or a deficit or a surplus budget. Accumulation of deficits over time will give us the sum of national debt, if any. The budget deficit may be related to the economy's gross domestic product (GDP) as national debt beyond a limit will compromise the credit rating of the government, nationally as well as internationally.

In framing the annual budget, the government will have to make a decision how much to allocate to military, law and order, defense, and security and how much to allocate to civil expenditures for education, basic research, health care, and environmental protection. They are items with externalities and private market can hardly meet the demand for such goods and services. Private education and health care provisions have limited scope. Environmental protection by private efforts shall remain a remote possibility. Hence social action under government programs will be in order. These expenses will contribute to human capital formation and help China maintain her competitive level of productivity, enabling China to produce goods and services - cost and quality competitive for both domestic and world markets.

The fiscal policy of the government will be an important factor for ( a ) correcting the imbalance of income distribution across income classes in each province/region and also

for progressive augmentation of human capital which will enable China to be a competitive actor in the world economy.

Education and basic research must receive priority consideration. Competition is global. The core principle of economics teaches us that effective global competition will contribute to the maximization of global economic gains. Given the population base of China, facilities for higher education and basic research warrant substantive expansion. Some recent studies have reviewed the scope for higher education and basic research in overseas academic centers. Will they come back home or engage in more advanced research and academic work overseas? Let another study examine such issues. We conclude that there is room for reviewing China's priorities for higher education and basic research in the immediate future. The World Bank compilations for China and USA are revealing.

**Table 16A. PUBLIC EXPENDITURE ON EDUCATION & HEALTH:  
CHINA, USA AND COUNTRIES OF MIDDLE AND HIGH INCOMES**

	EDUCATION	HEALTH
	% of GDP ( 2001)	% of GDP 2001/02
CHINA	2.2	2.0
USA	4.9	6.2
Middle Income Countries	4.5	3.1
High Income Countries	5.2	6.3

Source: World Development Indicators, The World Bank (2004) pp.68-70.

**Table16B. SCIENCE & TECHNOLOGY: CHINA AND USA**

	CHINA	USA
Researchers in R&D (1990-2001) (Per Million of People)	584	4099
Technicians in R&D (1990-2001) (Per Million of People)	202	Not Available
Scientific & Technical Journal Articles (1999)	11,674	163,526
Expenditures in R&D (% of GDP) (1996-2002)	0.54	2.80

Source: World Development Indicators, The World Bank (2004) pp.298-300.

Year	Public spending on education, total (% of GDP)	* Public spending on education	Scientific and technical journal articles
1980	2.51	4.11	
1981	2.51	4.32	1,100
1982	2.59	4.86	
1983	2.61	5.44	
1984	2.51	6.02	
1985	2.51	6.83	1,943
1986	2.57	7.61	2,911
1987	2.27	7.51	3,146
1988	2.17	7.99	3,989
1989	2.21	8.47	4,325
1990	2.34	9.30	4,999
1991	2.23	9.68	4,986
1992	2.02	10.02	5,602
1993	1.86	10.47	5,882
1994	2.39	15.15	6,093
1995	2.46	17.23	6,995
1996	2.47	18.96	7,212
1997	2.49	20.79	9,081
1998	2.18	19.65	10,155
1999	..		11,675

Source: The World Bank - World Development Indicators  
\* calculated, public spending on education % \* GDP

Environment is indeed a global issue. The Kyoto Protocol merits urgent attention of the governments of the world. The sensational news stories reminding people of the world the increase in the volume of global air pollution as the billion-plus people in China move on to drive automobiles at half the rate of driving population in the rest of the world must not receive misplaced emphasis. Mature industrialized economies must assume their respective responsibilities first. A newly industrialized economy, as China is, will then follow the proper course. How can we expect the Chinese to do what other industrialized countries tell them to do? They will do as we do.

### III.C ECONOMIC REGIONALIZATION

The European Union with its Euro revolution has offered a challenging new economic paradigm. ( DUTTA 2004, 2002, 2001, 1999). The three simple principles define this paradigm.

1. Integration of economies of a region, observed to be together on the map of the world. It denies the togetherness under the old imperial model where Hong Kong was together with the British Empire and Macao was together with the Portugal's empire. The collapse of the imperial model is real.
2. Economies of the region become integrated into one common market with free flow of trade, free flow of investment and free movement of labor within the region given a common economic policy with regard to the rest of the world.
3. The intra-regional macroeconomic framework with its monetary and fiscal policy parameters well specified and transparent for operational effectiveness.

European Union (EU) is a learning model. As of 2005, Europeanization of Europe, as EU membership will have expanded to 25 from its present 15 will have been complete. The issue is not one of replication of the EU in Asia. EU must however be a learning model. It provides unity in diversity – economic unity with diversities in language, religion, culture and life style. This unity based on geography removes the potential of intra-regional conflicts and wars. One common economy is placed on one common geography and aimed at maximization of intra-regional economic prosperity. The concept of sovereign nation state based economic units, hitherto much in common is under challenge and intra-regional economic groupings in various forms have been widely noted in post-WWII and post Cold War decades ( Dutta 1999, 1985).

I emphasized in my presentation at the Harvard Asia Business Conference (2004) Asian countries may not have to wage a series of wars to learn why the EU model came to materialize. I have written on Asian economic community with its micro-and-macro economic parameters, (2000, 2001) and my paper has been translated and published in Japanese at full length, and also in Korean and Chinese in abridged versions.

Ever since 1998, Korea, China and Japan along with Singapore, Malaysia, Thailand, Indonesia and the Philippines have been meeting regularly to explore the possibilities of Asian monetary and fiscal cooperation. These conferences are held at the sub-cabinet level and no communiqué is released. This has been referred to as the 3 plus 5 model. In 2002, the Asian Economic Summit held in Indonesia invited India and Myanmar, Laos, Cambodia, Vietnam and Brunei Darussalam, making it 4 plus 10 model.

Their belonging to the map of Asia is obvious. The Asian Economic Community (AEC) will have a competitive share of world output and trade. The post-WWII Breton

Wood Institutions, The World Bank and The International Monetary Fund warrant restructuring. In my presentation at the UNITAR Workshop at the United Nations Headquarters in New York City (DUTTA 2002), I argued that with USA, EU and AEC, each unit with a competitive share of world output and trade will make competitive contributions to the share capital of these institutions and will share equal responsibility for its functional effectiveness.

The African Economic Union (AEU) is being explored and a PREPARATORY COMMITTEE headed by President of South Africa has been constituted. A SECRETARIAT has also been established. The American Hemispheric Economic Cooperation with all the economies in the North and South Americas, excluding the Republic of Cuba has been under study. Since 1997, Free Trade Area of the American Hemisphere (FTAA) has been subject of several hemispheric conferences. The Asia-Pacific Economic Cooperation (APEC) has made little progress. One reason, I argue, that belonging together of the 21 sovereign nation-state member economies of APEC are not observed to be on the map of Asia. If the Atlantic Ocean has been a divide between Europe and the American Hemisphere, the Pacific Ocean is a larger divide between the 21 APEC members, some on the far shore of the Pacific while others on the American shore.

China has been a leading participant in the 3 plus 5 model of Asian economic community. China continues to lead in the 4 plus 10 model. China will be a natural leader in the Asian Economic Community. The continental economic regionalization will be the message of the European Union (EU) paradigm. If Europe has taken one half of one

century to accomplish what has been accomplished, the presence of EU as a learning model will help progression of the paradigm in other continents.

#### IV. CONCLUSION

China's industrial revolution has been a subject of study by many. This study offers to add to the fast growing literature on this subject. We begin by stating **three** issues of concern for China's transitional economy.

- 1) The need for softening the rate of growth, because no economy can grow at an average annual rate of 10% for an indefinite period.
- 2) China's income distribution problem both inter-regional and intra-regional – warrants urgent attention.
- 3) Progressive augmentation of China's productivity is very much in order, so that China can sustain her ability to compete in the world market.

We argue for a restructuring of the macroeconomic framework of China's socialist market economy. Further reform of monetary and fiscal policies will help restructure China's macroeconomic order. Indeed, proper restructuring of the macroeconomic framework will help China address the above three issues. In addition, we argue for continental economic regionalization of Asia where China must play a leadership role.

China's economic accomplishment is an eloquent testimony to the fact that the socialist market economy has anchored itself into the core principle of the market economy by way of offering incentives to production agents in all sectors of the economy toward maximization of economic gains. China's economic reform agenda adopted the open economic policy, because without internationalization, China's industrialization

would not have been operationally successful. The process of marketization of China's state owned and managed enterprises must be progressively completed. China is now a member of the world economic community and must accept its share of responsibility for doing what all remains to be done for the world economy.

*ACKNOWLEDGMENT: My sincerest appreciation to Lawrence R. Klein who taught Economics and Econometrics to me, and to Robert J. Alexander who remains a source of inspiration to me, for me doing what all I continue to do. I also owe my thanks, to Dwight H. Perkins, Gregory C. Chow, John M. Letiche, Anthony M. Tang, Gary H. Jefferson, Calla Weimer, and to Chang Peikang, Zhang Zhongli, Liu Guoguang, Li Jingwen, Huang Fanzhang for introducing me to the study of China's economy and also for helping me to understand China's industrial revolution and economic development. Wenhui Wei for all his help deserves a special mention. Laura F. Liang did a good deal of statistical work and has earned my thanks. My very special thanks are due to Debra A. Holman. I remain responsible for all my mistakes.*

BIBLIOGRAPHY (all sources cited in the text)

**For Communications**

Professor M. DUTTA  
Economics Faculty  
Faculty of Arts & Sciences  
Rutgers – The State University of New Jersey  
75 Hamilton Street  
New Brunswick, NJ, 08901-1248 (USA)

e.mail: MDUTTA@rci. Rutgers.edu

OR,

DUTTA@ECONOMICS. RUTGERS.EDU

NOTE: This paper will be available on my WEB SITE

<http://economics.rutgers.edu/home/dutta>