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Globalization and WTO: Impact on India's Economic Growth and Export

Alok Kumar Pandey*

Globalization has been dynamic and versatile during about past five decades pointing towards globe as an inclusive single place. In the ten years from 1988 to 1998, almost all nations of the world regardless of ideology reduced their economic activities while private sector has expanded and thus gradually replaced the government as major economic agent from the world scene. All this has created new market like service, consumer, financial, new agents like MNCs, WTO, Regional Blocks, and Policy Co-ordination group like G-77, G-10, G-22 and OECD, new norms and policy as individualized, liberalism, democracy, human rights, consensus on global environment and peace, multilateral agreements etc (UNDP 1999).

In early 1991, Indian economy faced several economic crises, like fiscal imbalances, mounting inflationary pressure and severe balance of payment crisis. The congress government, which assumed office at the end of June 1991, responded quickly to these problems. As a result, the policy of Structural Adjustment Programmes (SAPs) was introduced in July 1991. Apart from other regulatory measures to correct the prevailing distortions in the Indian economy, the broad approach was to initiate reform in the external sector, which was emphasized in the report of the high level committee on Balance of Payment. The objectives of reform in the external sector were conditioned by the need to correct the deficiencies that were responsible for payment imbalances of 1991. Before 1991, although several committees have recommended measures to correct the anomalies in the foreign trade sector of the Indian economy, but these recommendations failed to bring the desired reform in the external sector of the Indian Economy.

The World Trade Organization (WTO) which came into existence on January 1, 1995 with a view to ensure global cooperative trade environment, to raise incomes and to

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create ample job opportunity for the nations through fair and open trade, has added new dimensions in the India's Foreign Trade Sector. India is the one of the founding members of the GATT (1947) and WTO (1995) and favors multilateral approach to trade relations.

Review of Literature

The role of export in economic growth assumes importance, which is corroborated by several studies [Emery (1967), Balassa (1978, 1985), Ram (1985), Rana (1988), Rana and Dowling (1990), Fosu (1990), Salvatore (1983), Fajana (1979) and Williamson (1978)]. In addition, Hong Kong, Singapore, South Korea and Taiwan have attained remarkable economic growth over the past two decades and this growth was accompanied with perennial expansion in their export (Jin 1996). However there are several other studies [Michaely (1977), Dodaro (1991), Tyler (1981), Moschos (1989), Singer and Gray (1988), Watanabe (1985), Sayron and Walsh (1968), and Kavoussi (1985)], which reveal that relationship between export and economic growth is quite complex and is context specific. But there is unanimous opinion among the researchers and policy makers that export is one of the major and vital determinants of economic growth of a country. Recently, some empirical studies pertaining to India's export performance [Gill and Ghuman (1982), Wadhva (1998), Prasad (1997), Bhattacharyya (2001), Kaushik and Paras (2000), Nilanjan (2001)] for the last one and half decades have been made.

WTO and India

The eight round of GATT negotiations started in 1986 at Uruguay, under the chairmanship of Arthur Dunkel. One of the important features of the Uruguay round was transforming GATT into a permanent watchdog named as WTO (World Trade Organization) in 1995 with a status equal to IMF and World Bank. The preamble of WTO states that, "there is a need for positive efforts to ensure that developing countries and especially the least developed among them, secure a share in the growth of international trade commensurate with the needs of their economic development". It also categorically states that, "the developing countries will be benefited from the increased exports and better treatment with respect to measures taken by the other WTO member". The new World Trade Organization (WTO) which replaces the General Agreement on Tariffs and Trade (GATT) has come into effect from Jan 1st 1995 with about 85 founding

members including India. The major agreements under WTO regimes are TRIPS (Trade Related Intellectual Property Rights), TRIMS (Trade Related Investment Measures), GATS (General Agreement and trade and services), Dispute Settlement and Monitoring of Trade Policies.

India has adopted the policy of most favored nation (MFN) to all its trading partners. As a member of WTO, India is committed to ensure that the sector in which the developing countries enjoy a comparative advantage are adequately opened up to international trade. India is also committed to ensure that the special and differential treatment provisions for developing countries under different WTO agreements are translated into specific enforceable dispensations. Currently, India has adopted WTO norms in these sector likes Agriculture, Trade and Industry, Intellectual property and services (WTO: Report on India's trade policies Review, May 2002).

Consequent upon WTO Arrangement, it was expected that India's export and its GDP performance would improve. It is against this backdrop, the export and GDP performance of the Indian economy for the period 1985-86 to 2004-05 has been investigated keeping in view the economic reform of 1991 and commencement of WTO in 1995.

Objective of the Study

The objective of the study is to examine the growth performance of GDP of Indian economy as well as Indian export, considering the impact of major structural change, if any, after 1991 due to introduction of Structural Adjustment Programmes and WTO Arrangement in 1995.

Data Structure and Research Methodology

In order to sketch India's economic growth and export performance, the relevant time series data for the period 1985- 86 to 2004-05 has been taken from various issues of Economic Survey (since 1991 to 2005) and Handbook of Statistics on the Indian economy (2005-06). In order to estimates GDP and export performance of the Indian economy growth in GDP and Export have been measured keeping in view the structural break, if any, in the time series export data during 1991 and 1995 when economic reforms and WTO Arrangements respectively came into existence. For this purpose, the technique of slope dummy and intercept dummy has been employed (Gujarati, 2003). More

specifically in the present study, we have adopted the regression equation as mentioned below:

$$\ln Y_i = \alpha_0 + \alpha_1 t + \alpha_2 D_1 + \alpha_3 (D_1 * t) + \alpha_4 D_2 + \alpha_5 (D_2 * t) + u_i \dots\dots\dots(1)$$

Where, Y_i is the GDP and export for the period 1985-86 to 2004-05, t is time trend, D_1 is the first dummy variable measuring impact of economic reforms of 1991 on India's GDP and export which takes value 0 for the period 1985-86 to 1990-91 and 1 for the period 1991-92 to 2004-05 and D_2 is the second dummy variable measuring impact of WTO Arrangement of 1995 on India's GDP and export which takes value 0 for the period 1991-92 to 1994-95 and 1 for the period 1995-96 to 2004-05 and u_i is the random disturbance term.

In the above regression equation, the growth in the period 1985-86 to 1990-91 will be measured by

$$g_{yx\ 1985-90} = \hat{\alpha}_1 * 100 \dots\dots\dots(2)$$

Also growth in the period 1991-92 to 1994-95 will be given by

$$g_{yx\ 1991-92} = (\hat{\alpha}_1 + \hat{\alpha}_3) * 100 \dots\dots\dots(3)$$

Similarly growth in the period 1995-96 to 2004-05 will be given by

$$g_{yx\ 1995-04} = (\hat{\alpha}_1 + \hat{\alpha}_3 + \hat{\alpha}_5) * 100 \dots\dots\dots(4)$$

The policy makers and researchers may assume that India's GDP have increased over the years. In view of this we may assume that per annum growth in India's GDP during post WTO regime (1995-96 to 2004-05) has been higher during 1991-92 to 1994-95 as compared to the period 1985-86 to 1990-91. In terms of regression coefficients of equations 5 to equation 12, above-mentioned conditions may be stated as,

$$g_{yx\ 1995-04} > g_{yx\ 1991-92}, \text{ and } g_{yx\ 1991-92} > g_{yx\ 1985-90}$$

India's Gross Domestic Product Performance (1985-86 to 2004-05): At Current Prices

This section attempts to sketch the performance of Gross Domestic Product and its components at current prices of India for the period 1985-2004. Table1 contains GDP and its components at current prices for the period 1985-2004 along with relevant statistics like mean, media, maximum, minimum, standard deviation, skewness, kurtosis etc.

Percentage change in GDP and its components (at current prices) over previous year during the period 1985-2004 have been shown in Table 2.

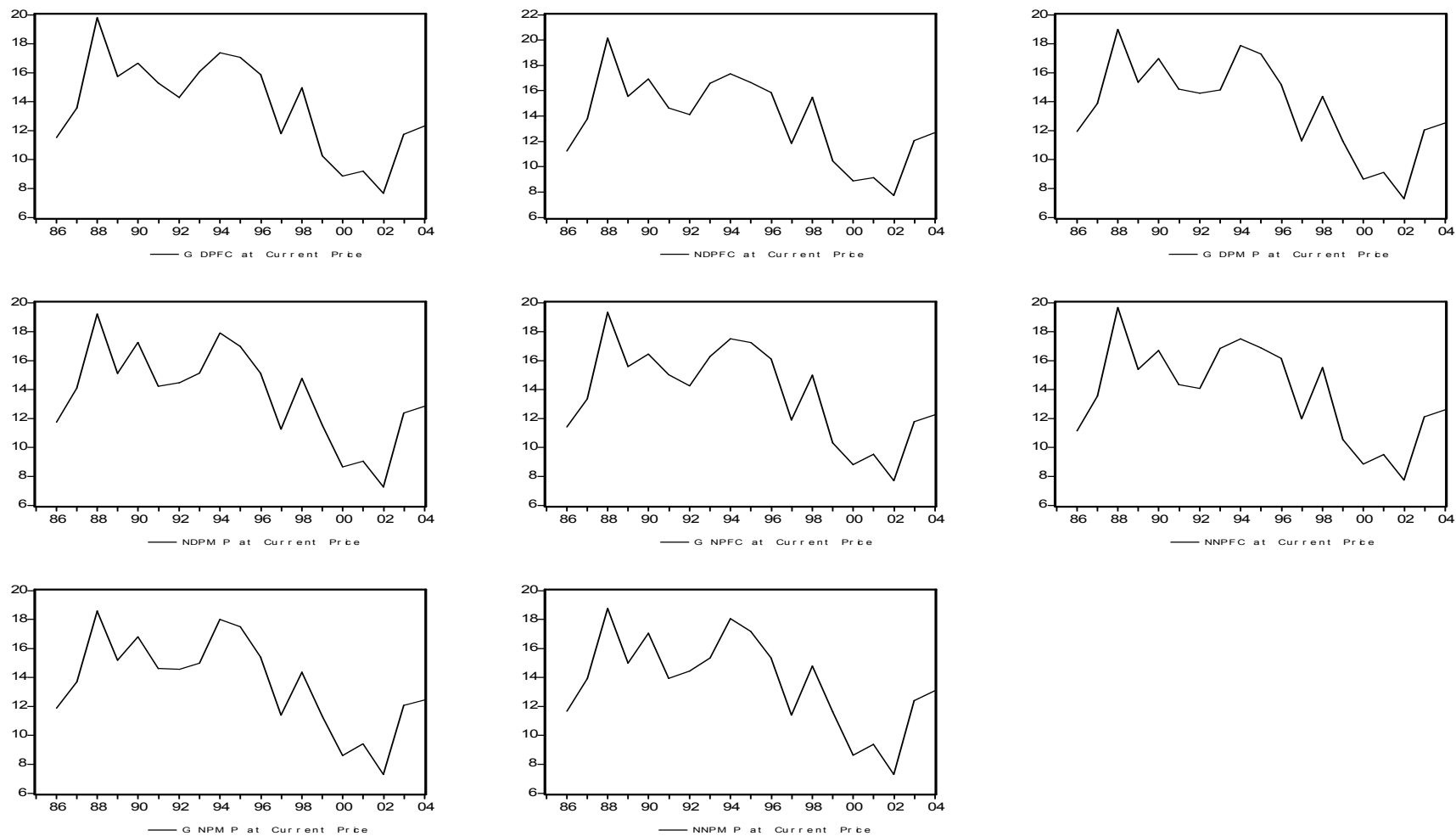
Table 1: India's GDP and its components at current prices (1985-2004) and its descriptive statistics

Year	GDPFC	NDPFC	GDPMP	NDPMP	GNPFC	NNPFC	GNPMP	NNPMP
1985	249547	222830	277991	251274	248118	221401	276562	249845
1986	278258	247869	311177	280788	276453	246064	309372	278983
1987	315993	282019	354343	320369	313374	279400	351724	317750
1988	378491	338798	421567	381874	373995	334302	417071	377378
1989	438020	391460	486179	439619	432289	385729	480448	433888
1990	510954	457690	568674	515410	503409	450145	561129	507865
1991	589086	524684	653117	588715	579009	514607	643040	578638
1992	673221	598709	748367	673855	661576	587064	736722	662210
1993	781345	697992	859220	775867	769265	685912	847140	763787
1994	917058	819064	1012770	914776	903975	805981	999687	901693
1995	1073271	955345	1188012	1070086	1059787	941861	1174528	1056602
1996	1243546	1107043	1368208	1231705	1230464	1093961	1355126	1218623
1997	1390148	1238151	1522547	1370550	1376943	1224946	1509342	1357345
1998	1598127	1430061	1740985	1572919	1583159	1415093	1726017	1557951
1999	1761932	1579573	1936925	1754566	1746501	1564142	1921494	1739135
2000	1917724	1719868	2104298	1906442	1900310	1702454	2086884	1889028
2001	2094013	1876955	2296049	2078991	2081350	1864292	2283386	2066328
2002	2254888	2021936	2463324	2230372	2241722	2008770	2450158	2217206
2003	2519785	2266148	2760025	2506388	2505707	2252070	2745947	2492310
2004	2830465	2553334	3105512	2828381	2812758	2535627	3087805	2817968
Mean	1190794.	1066476.	1308964.	1184647.	1180008.	1055691.	1298179.	1174227.
Median	995164.5	887204.5	1100391.	992431.0	981881.0	873921.0	1087108.	979147.5
Maximum	2830465.	2553334.	3105512.	2828381.	2812758.	2535627.	3087805.	2817968.
Minimum	249547.0	222830.0	277991.0	251274.0	248118.0	221401.0	276562.0	249845.0
Std. Dev.	811913.5	730822.9	886566.6	805480.9	807802.6	726721.8	882451.6	802159.9
Skewness	0.540386	0.554368	0.542238	0.555200	0.547308	0.562106	0.548605	0.565363
Kurtosis	2.037441	2.060498	2.047406	2.069558	2.041714	2.065457	2.051363	2.082163
Jarque-Bera	1.745491	1.759965	1.736270	1.748926	1.763749	1.781018	1.753151	1.767470
Probability	0.417803	0.414790	0.419734	0.417086	0.414006	0.410447	0.416206	0.413237
Observations	20	20	20	20	20	20	20	20

*Sources: Handbook of statistics on Indian economy 2005-06, Reserve Bank of India,

** Descriptive statistics has been calculated on the basis of data given Hand Book of Statistic on Indian Economy, Reserve Bank of India

Graph-1: Percentage change in the GDP and its Components at Current Prices (1985- 2004)



Note: Figure has been drawn on the basis of the Table 2.

One important features regarding percentage change in GDP over previous year that emerging from Table 2 is that change in GDP has been positive with minimum change in the year 2002 over the year 2001 and maximum change in the year 1988 over the year 1987. Figure-1 shows the percentage change in the GDP and its Component at current prices over the previous year

Table 2: Percentage change in GDP and its Components (at current prices) over the previous year (1985-2004)

Year	GDPFC	NDPFC	GDPMP	NDPMP	GNPFC	NNPFC	GNPMP	NNPMP
1985	-	-	-	-	-	-	-	-
1986	11.51	11.24	11.94	11.75	11.42	11.14	11.86	11.66
1987	13.56	13.78	13.87	14.1	13.36	13.55	13.69	13.9
1988	19.78	20.13	18.97	19.2	19.34	19.65	18.58	18.77
1989	15.73	15.54	15.33	15.12	15.59	15.38	15.2	14.97
1990	16.65	16.92	16.97	17.24	16.45	16.7	16.79	17.05
1991	15.29	14.64	14.85	14.22	15.02	14.32	14.6	13.94
1992	14.28	14.11	14.58	14.46	14.26	14.08	14.57	14.44
1993	16.06	16.58	14.81	15.14	16.28	16.84	14.99	15.34
1994	17.37	17.35	17.87	17.9	17.51	17.51	18.01	18.06
1995	17.03	16.64	17.3	16.98	17.24	16.86	17.49	17.18
1996	15.87	15.88	15.17	15.1	16.1	16.15	15.38	15.33
1997	11.79	11.84	11.28	11.27	11.9	11.97	11.38	11.38
1998	14.96	15.5	14.35	14.77	14.98	15.52	14.36	14.78
1999	10.25	10.45	11.25	11.55	10.32	10.53	11.33	11.63
2000	8.84	8.88	8.64	8.66	8.81	8.84	8.61	8.62
2001	9.19	9.13	9.11	9.05	9.53	9.51	9.42	9.39
2002	7.68	7.72	7.29	7.28	7.71	7.75	7.30	7.30
2003	11.75	12.08	12.04	12.38	11.78	12.11	12.07	12.41
2004	12.33	12.67	12.52	12.85	12.25	12.59	12.45	13.07

Note: Estimated on the basis of data given in Table-1.

In this section an attempts has been made to estimate average annual growth in GDP and its components (at current prices). More especially we have fitted following regression model based on dummy variables keeping in view the structural reform of 1991 and WTO settlement in 1995 (see research methodology).

$$\ln Y_i = \beta_0 + \beta_1 t + \beta_2 D_1 + \beta_3 (D_1 * t) + \beta_4 D_2 + \beta_5 (D_2 * t) + \varphi_1 \dots \dots \dots (5-12)$$

Where, Y stands for the GDP at current price of the government of India. i=1, 2,, 8 varies for the different components of GDP at current prices. Interpretations of β_j 's where $j=0, 1, \dots, 5$ are same as explain in equation (1). And, φ_i stand for random disturbance term.

Regression equations have been estimated on the basis of data on Table 1. Estimated regression results have been shown in Table 3.

Table 3: Growth rate of the GDP and its Components at current prices (1985-2004): Regression results

Equation	Constant	t	D ₁	D ₁ t	D ₂	D ₂ t	R ²	Adj. R ²	SER	RSS
Equation 5	12.255	0.146	-0.009	0.001	0.556	-0.044	0.999	0.998	0.025	0.008
	(526.31)	(24.489)	(-0.094)	(0.098)	(5.285)	(-3.883)				
Equation 6	12.139	0.147	-0.019	0.002	0.549	-0.045	0.999	0.998	0.025	0.009
	(504.854)	(23.846)	(-0.190)	(0.131)	(5.057)	(-3.750)				
Equation 7	12.367	0.145	-0.002	-0.0004	0.539	-0.043	0.999	0.999	0.023	0.007
	(577.53)	(26.453)	(-0.017)	(-0.003)	(5.566)	(-4.070)				
Equation 8	12.264	0.146	-0.009	0.0002	0.50	-0.043	0.999	0.999	0.023	0.007
	(559.10)	(25.933)	(-0.105)	(0.020)	(5.353)	(-3.946)				
Equation 9	12.251	0.144	-0.031	0.004	0.562	-0.045	0.999	0.998	0.024	0.008
	(527.20)	(24.205)	(-0.317)	(0.338)	(5.347)	(-3.919)				
Equation 10	12.135	0.145	-0.044	0.005	0.556	-0.045	0.999	0.998	0.025	0.009
	(505.95)	(23.546)	(-0.435)	(0.392)	(5.126)	(-3.791)				
Equation 11	12.364	0.144	-0.021	0.003	0.543	-0.043	0.999	0.999	0.022	0.007
	(579.73)	(26.234)	(-0.234)	(0.229)	(5.636)	(-4.111)				
Equation 12	12.261	0.144	-0.032	0.003	0.534	-0.043	0.999	0.999	0.023	0.007
	(561.87)	(25.717)	(-0.342)	(0.272)	(5.413)	(-3.981)				

Note: Calculated on the basis of the data given as in Table 1.

Based on coefficient of regression results as given in Table 3, growth of GDP and its components at current prices of the Indian economy for the three specific time period i.e. 1985-90, 1991-94 and 1995-04 have been presented in Table 4. Facts reveal that for the period 1985-90 (pre economic reform period) per annum growth in GDP and its components (at current prices) were found more than 14 percents. For example, average annual growth in GDP at Factor cost for the period (1985-90 was recorded 14.6, which increases and stood at 14.7 percent during the period 1991-94 (i.e. post economic reform period).

It is important to note that shift in GDP and its components during the period 1991-94 over the period 1985-90 were found to positive. It is evident from the Table 4, that per annum growth in GDP and its components during the post reform period (1991-94) was not high as recorded as in post economic reform period (1985-90). And finally, from the table that per annum growth in GDP and its components were found more than 10 percent during the post WTO period i.e. 1995-2004. For example, GDP at factor cost at current prices during this period stood at 10.3 percent. It is also significant to observe that as compare to pre economic liberalization period, post economic liberalization period i.e.,

1991-94, shift in GDP and its components were found negative and more than -4 percent during post WTO period (1995-2004).

Table 4: India’s GDP and its Components at current prices (1985-2004): Growth rate (in percent)

Components of GDP	Pre-Reform Period (1985-90)	Post-Reform Period (1991-94)	Shift in Growth Rate during Post reform Period	Post-WTO Period (1995-04)	Shift in Growth Rate during Post-WTO Period
GDPFC	14.6	14.7	0.1	10.3	-4.4
NDPFC	14.7	14.9	0.2	10.4	-4.5
GDPMP	14.5	14.5	0.0	10.2	-4.3
NDPMP	14.6	14.6	0.0	10.3	-4.3
GNPFC	14.4	14.8	0.4	10.3	-4.5
NNPFC	14.5	15.0	0.5	10.5	-4.5
GNPMP	14.4	14.7	0.3	10.4	-4.3
NNPMP	14.4	14.7	0.3	10.4	-4.3

Note: Calculated on the basis of Table3.

India’s Gross Domestic Product Performance (1985-86 to 2004-05): At Constant Prices

Table 5 contain GDP and its components at constant prices along with relevant statistic like; mean, media, maximum, minimum, standard deviation, skewness, kurtosis etc during the period 1985-86 to 2004-05. Table 6 deals with the percentage change in the GDP and its components (at constant prices) as compare to the previous year during the period 1985-86 to 2004-05. From this table two important features may be noticed; first of all maximum percentage change was observed in the year 1988 as compared to 1987 and secondly percentage change in GDP at factor cost in 1991 was merely 1.3 percent as compare to the previous year, which corroborated the deteriorating position of overall Indian economy during the terminal year of eighties. Eventually, this has led the genesis of introduction of economic reforms in India in July1991. Also Figure 2 shows the percentage change in GDP at constant price during the period 1985- 2004.

This section also deals with estimation of average annual growth in GDP and its components at constant prices. In order to measure average annual growth for the sub periods like; 1985-90, 1991-94 and 1995-2004 following regression equation have been employed.

$$\ln Y_t = \gamma_0 + \gamma_1 t + \gamma_2 D_1 + \gamma_3 (D_1 * t) + \gamma_4 D_2 + \gamma_5 (D_2 * t) + v_i \dots\dots\dots(13-20)$$

Interpretations of γ_j 's where $j=0,1,\dots,5$, are same as explain in equation (1), v_t stand for random disturbance term and Y is the India's GDP and its components at constant prices. On the basis of Table 5 regression equations (13-20) have been estimated for the India's GDP and its components at constant prices. Estimated regression results have been presented in Table 7.

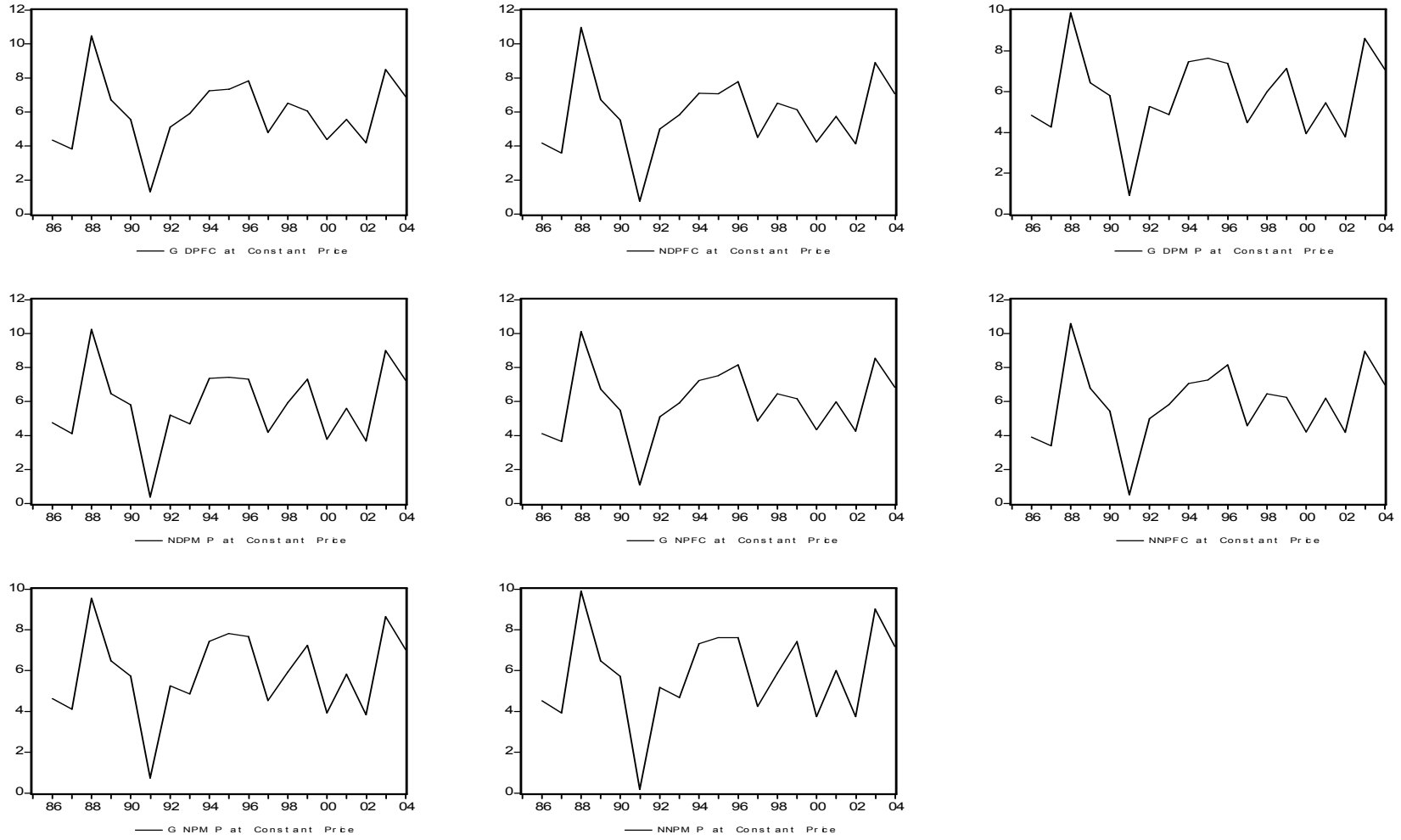
Table 5: GDP and its components at constant prices (1985-2004) and its descriptive statistics

Year	GDPFC	NDPFC	GDPMP	NDPMP	GNPFC	NNPFC	GNPMP	NNPMP
1985	513990	462117	570267	518394	511060	459187	567337	515464
1986	536257	481393	597850	542986	532021	477158	593614	538751
1987	556778	498681	623371	565274	551409	493312	618002	559905
1988	615098	553463	684832	623197	607207	545572	676941	615306
1989	656331	590741	728952	663362	648108	582518	720729	655139
1990	692871	623407	771295	701831	683670	614206	762094	692630
1991	701863	628092	778289	704518	691143	617372	767569	693798
1992	737792	659599	819318	741125	726375	648182	807901	729708
1993	781345	697992	859220	775867	769265	685912	847140	763787
1994	838031	747573	923349	832891	824816	734358	910134	819676
1995	899563	800411	993946	894794	886961	787809	981344	882192
1996	970083	862808	1067445	960170	959360	852085	1056722	949447
1997	1016594	901734	1115247	1000387	1005945	891085	1104598	989738
1998	1082748	960555	1182021	1059828	1070774	948581	1170047	1047854
1999	1148442	1019371	1266358	1137287	1136840	1007769	1254756	1125685
2000	1198685	1062616	1316340	1180271	1186246	1050177	1303901	1167832
2001	1265429	1123543	1388139	1246253	1257043	1115157	1379753	1237867
2002	1318362	1169793	1440632	1292063	1310471	1161902	1432741	1284172
2003	1430548	1274074	1564620	1408146	1422479	1266005	1556551	1400077
2004	1529408	1364259	1675500	1510351	1519749	1354599	1665841	1500692
Mean	924510.9	824111.1	1018350.	917949.8	915047.1	814647.3	1008886.	908486.0
Median	868797.0	773992.0	958647.5	863842.5	855888.5	761083.5	945739.0	850934.0
Maximum	1529408.	1364259.	1675500.	1510351.	1519749.	1354599.	1665841.	1500692.
Minimum	513990.0	462117.0	570267.0	518394.0	511060.0	459187.0	567337.0	515464.0
Std. Dev.	311454.4	274795.7	336861.0	300211.1	310458.8	273808.8	335862.3	299220.1
Skewness	0.408203	0.426000	0.410833	0.427499	0.426757	0.447242	0.428047	0.447002
Kurtosis	1.982224	2.022299	1.992743	2.030987	1.988831	2.030335	1.998711	2.038131
Jarque-Bera	1.418655	1.401502	1.408086	1.391674	1.459124	1.450292	1.446232	1.437028
Probability	0.491975	0.496212	0.494582	0.498657	0.482120	0.484254	0.485238	0.487476
Observations	20	20	20	20	20	20	20	20

* Source: Hand Book of Statistic on Indian Economy 2005-06, Reserve Bank of India;

** Descriptive statistics has been calculated on the basis of data given Hand Book of Statistic on Indian Economy, Reserve Bank of India

Graph-1: Percentage change in the GDP and its Components at Constant Prices (1985- 2004)



Note: Figure has been drawn on the basis of the Table 6.

Table 6: Percentage change in GDP and its Components (at constant prices) over the previous year (1985-2004)

Year	GDPFC	NDPFC	GDPMP	NDPMP	GNPFC	NNPFC	GNPMP	NNPMP
1985
1986	4.33	4.17	4.84	4.74	4.1	3.91	4.63	4.52
1987	3.83	3.59	4.27	4.1	3.64	3.39	4.11	3.93
1988	10.47	10.99	9.86	10.25	10.12	10.59	9.54	9.89
1989	6.7	6.74	6.44	6.44	6.74	6.77	6.47	6.47
1990	5.57	5.53	5.81	5.8	5.49	5.44	5.74	5.72
1991	1.3	0.75	0.91	0.38	1.09	0.52	0.72	0.17
1992	5.12	5.02	5.27	5.2	5.1	4.99	5.25	5.18
1993	5.9	5.82	4.87	4.69	5.9	5.82	4.86	4.67
1994	7.25	7.1	7.46	7.35	7.22	7.06	7.44	7.32
1995	7.34	7.07	7.65	7.43	7.53	7.28	7.82	7.63
1996	7.84	7.8	7.39	7.31	8.16	8.16	7.68	7.62
1997	4.79	4.51	4.48	4.19	4.86	4.58	4.53	4.24
1998	6.51	6.52	5.99	5.94	6.44	6.45	5.93	5.87
1999	6.07	6.12	7.13	7.31	6.17	6.24	7.24	7.43
2000	4.37	4.24	3.95	3.78	4.35	4.21	3.92	3.74
2001	5.57	5.73	5.45	5.59	5.97	6.19	5.82	6.00
2002	4.18	4.12	3.78	3.68	4.25	4.19	3.84	3.74
2003	8.51	8.91	8.61	8.98	8.55	8.96	8.64	9.03
2004	6.91	7.08	7.09	7.26	6.84	7.00	7.02	7.19

Note: Estimated on the basis of data given in Table 5.

Table 7: Growth rate of the GDP and its Components at constant prices (1985-2004): Regression results

Equation	Constant	t	D ₁	D ₁ t	D ₂	D ₂ t	R ²	Adj. R ²	SER	RSS
Equation 13	13.071	0.063	-0.027	-0.004	0.055	-0.003	0.998	0.998	0.013	0.003
	1061.345	19.868	-0.511	-0.581	0.979	-0.4155				
Equation 14	12.962	0.063	-0.022	-0.005	0.037	-0.001	0.999	0.998	0.014	0.003
	962.381	18.300	-0.385	-0.735	0.605	-0.194				
Equation 15	13.179	0.063	-0.009	-0.007	0.035	-0.0004	0.999	0.999	0.013	0.002
	1131.66	21.008	-0.193	-1.071	0.661	-0.070				
Equation 16	13.082	0.063	-0.004	-0.008	0.017	0.001	0.997	0.998	0.013	0.003
	1031.46	19.416	-0.065	-1.221	0.294	0.148				
Equation 17	13.066	0.061	-0.036	-0.003	0.046	-0.002	0.999	0.999	0.013	0.002
	1067.30	19.482	-0.698	-0.369	0.834	-0.249				
Equation 18	12.957	0.0615	-0.033	-0.004	0.027	-0.0001	0.999	0.998	0.014	0.003
	966.984	17.884	-0.573	-0.523	0.448	-0.018				
Equation 19	13.174	0.061	-0.018	-0.006	0.027	0.001	0.999	0.999	0.012	0.002
	1145.14	20.783	-0.366	-0.884	0.516	0.098				
Equation 20	13.077	0.062	-0.013	-0.007	0.008	0.002	0.999	0.998	0.014	0.003
	1043.07	19.156	-0.236	-1.037	0.137	0.325				

Note: Calculated on the basis of the data given as in Table 5

Per annum growth in India's GDP and its components at constant prices for the three specific time period i.e. 1985-86 to 1990-91, 1991-92 to 1994-95 and 1995-96 to 2004-05 based on the regression coefficient as given in Table 7, have been presented in Table 8. Gross Domestic Product and its components (at constant price) registered more than 6 percent average annual growth rate for the period 1985-90, while for the period 1991-94 the average annual growth rate in GDP and its components (at constant price) registered less than 6 percent. Here it is significant to observe that shift in GDP and its components during the period 1991-94 over the period 1985-90 were found negative. This table also reveals that per annum growth in GDP and its components (at constant price) was found less than respective per annum growth in the components of GDP during the period 1995-2001 over the period 1991-94.

Table 8: India's GDP and its Components at constant prices (1985-2004): Growth rate (in percent) (in percent)

Components of GDP	Pre-Reform Period (1985-90)	Post-Reform Period (1991-94)	Shift in Growth Rate during Post reform Period	Post-WTO Period (1995-01)	Shift in Growth Rate during Post-WTO Period
GDPFC	6.3	5.9	-0.4	5.6	-0.3
NDPFC	6.3	5.8	-0.5	5.7	-0.1
GDPMP	6.3	5.6	-0.7	5.56	-0.04
NDPMP	6.3	5.5	-0.8	5.6	0.1
GNPFC	6.1	5.8	-0.3	5.6	-0.2
NNPFC	6.2	5.8	-0.4	5.79	-0.01
GNPMP	6.1	5.5	-0.6	5.6	0.1
NNPMP	6.2	5.5	-0.7	5.7	0.2

Note: Calculated on the basis of Table7.

It is highly interesting to note that the India's GDP and its components have decreased in terms of per annum growth after the economic reform of 1991 were introduced, again it has declined after 1995 when WTO arrangements were introduced.

India's export performance during the period 1985-2004

This section attempts to sketch India's export for the period 1985-86 to 2004-05. Facts reveal that share of Indian export in world exports has been almost stable at 0.6 percent (International financial statistics February 2003) during the first decade of economic reform. Table 9 reveals export of India for the period 1985-2004. Descriptive Statistics related to Indian export like; mean, media, maximum, minimum, standard deviation,

skewness, kurtosis etc are also presented in this table for the period 1985-86 to 2004-05. In this Table percentage change in Indian export over the previous year for the period 1985-2004 also presented. Salient feature regarding percentage change in Indian export has been positive with minimum change i.e. 2.68 percent in the year 2001-02 over the year 2000-2001 and maximum change in the year 1991-92 i.e. 35.29 percent over the year 1990-91.

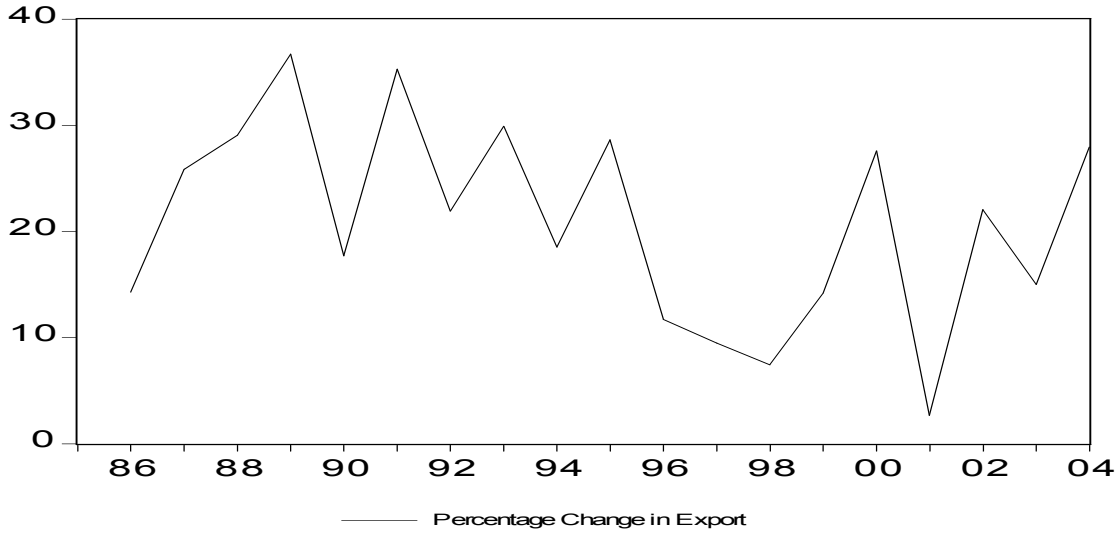
Table10: India's Export, Descriptive Statistic and percentage change (1985-2004)

Year	Export	Percentage change in Export
1985	10895	-
1986	12452	14.29
1987	15674	25.88
1988	20232	29.08
1989	27658	36.7
1990	32553	17.7
1991	44041	35.29
1992	53688	21.9
1993	69751	29.92
1994	82674	18.53
1995	106353	28.64
1996	118817	11.72
1997	130100	9.5
1998	139752	7.42
1999	159561	14.17
2000	203571	27.58
2001	209018	2.68
2002	255137	22.06
2003	293367	14.98
2004	375340	27.94
Mean	118031.7	
Median	94513.5	
Maximum	375340.0	
Minimum	10895.0	
Std. Dev.	103912.8	
Skewness	0.95573	
Kurtosis	3.0594	
Jaque-Bera	3.04768	
Probability	0.217	
Obs.	20	

*Source: Economic Survey (various issues from 1991) Ministry of Finance, Government of India.

** Descriptive statistics has been calculated on the basis of data given Economic Survey

Graph 3: Percentage change in Indian export (1985-2004)



Graph 3 shows the percentage change in Indian export for the period 1985-2004. In order to estimate growth of Indian exports keeping view the structural reform of 1991 and WTO Settlement in 1995, we have fitted following regression model:

$$\ln X = \eta_0 + \eta_1 t + \eta_2 D_1 + \eta_3 (D_1 * t) + \eta_4 D_2 + \eta_5 (D_2 * t) + \psi_i \dots \dots \dots (21)$$

Interpretations of η_j 's where $j=0,1, \dots,5$ are same as explain in equation (1). And, ψ_i stand for random disturbance term and X is the India's export for the period 1985-2004.

Regression equations have been estimated on the basis of Table 10. Estimated regression results have been shown in Table 11. Based on coefficient of regression results as given in Table 11, growth in export from India for the three specific time period i.e. 1985-86 to 1990-91, 1991-92 to 1994-94 and 1995-96 to 2004-05 have been presented in Table 12.

Table 11: Growth rate of the Indian export (1985-2005): Regression results

Equation	Constant	t	D ₁	D ₁ t	D ₂	D ₂ t	R ²	Adj. R ²	SER	RSS
Export	9.007	0.232	0.178	-0.017	0.822	-0.079	0.998	0.997	0.0572	0.0459
	168.866	16.942	0.790	-0.583	3.407	-2.985				

Note: Calculated on the basis of the data given as in Table 10

Average annual growth in Indian exports declined 1.7 percent during the period 1991-92 to 1994-95 over the period 1985-86 to 1990-91 (per annum growth in India's export during 1985-86 to 1990-91 is 23.2, while it was 21.5 percent during 1991-92 to 1994-95).

Table 12: Growth rate of the Indian export (1985-2004)(in percent)

Components of GDP	Pre-Reform Period (1985-90)	Post-Reform Period (1991-94)	Shift in Growth Rate during Post reform Period	Post-WTO Period (1995-01)	Shift in Growth Rate during Post-WTO Period
Export	23.2	21.5	-1.7	13.6	-7.9

Note: Calculated on the basis of Table 11.

The decline in India's export continued unabated later on after introduction of WTO Arrangement in 1995. Empirical results reveal that per annum growth in overall Indian exports declined by 7.9 percent during 1995-96 to 2004-05 over the period 1991-92 to 1994-95 (per annum India's export growth was 21.5 percent during the period 1991-92 to 1994-95, while it declined later further and stood at 13.6 percent during the period 1995-96 to 2004-05).

Concluding Observation and Suggestion

India's economic reforms of 1991 were supposed to introduce a package of better incentives for export promotion. Similarly the WTO Arrangements of 1995 was also aimed at to simplify the world trade and rectify the prevailing trade barriers among the nations. The actual scenario is some thing else, India's GDP, its components and export have decreased in terms of per annum growth after the economic reform of 1991, again it has declined after 1995 when WTO arrangements were introduced. In view of the facts that Indian exports and GDP in terms per annum growth has declined during the period 1991-92 to 1994-95 and during the period 1995-96 to 2004-05, there is an urgent need to reconsider about Indian export strategies in order to augment the growth of Indian exports in future. It is essential because if we have to attain the target of 8 percent per annum growth in GDP during the Tenth Five-Year Plan, we need substantial export earning in the future.

The decline in India's export continued unabated later on after introduction of WTO Arrangement in 1995. The decline in India's exports during the post WTO regime may be attributed due to various restrictions imposed by various countries on Indian exports. This is certainly against the spirit of WTO. In this connection, it is significant to observe that India's export as well as India's GDP have declined quickly during the post WTO era. This is because of fact that while developed nation are not reducing subsidies on their farm products and at the same time they are arguing for reduction in subsidy on farm

products for developing nations including India which has ultimately reduced the degree of competitiveness of Indian farm products in the international market. This partial trade policy as introduced by the developed nations deliberately which is hampering the economic interest of the developing nations has ultimately resulted in failure of the Cancun Summit [EPW (2003), Sukumar Murlidharan (2003), Walden Bello (2003)].

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