Impact of World's Economic Recession on India's Growth Perspective – Theories and Facts

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There is a consensus among economists that every economic expansion is followed by recession. During the boom, when economic growth is too fast and unsustainable, inflation increases. To reduce it, the governments deflate the economy by various ways which result into credit crunch and falling prices. Cost push inflation squeezes incomes and reduces disposable income. This causes a collapse in confidence of finance sector and 'real economy'. Indian economy also passed through these stages during the year 2008. The economic growth rate, which was above 8% for consecutive period of three years since 2006, suddenly plunged to an average of 5.5%. Developed world is under the fear that recession may not turn out to be continuous process resulting into great depression. Generally recessions are for two quarters, but depression is a severe economic downturn that lasts several years. Earlier India was affected less by external world depressions as it relied more on internal consumption, saving and import substitutions. However, after 1991 India opened up its economy to global players, share of exports, both goods and services, in GDP grew significantly. This paper is an attempt to analyse the variables responsible for India's recent growth, impact of world recession on these variables and their significance. It needs to validate

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whether India's economy has shifted away from consumption and saving to external sector dependence. Section II explores the studies relating to present world scenario, Section III explores pre-reforms and post-reforms scenario in India. Section IV analyses the data from April, 1973- March 2009 (in short 1973 to 2008), and also examines short term quarterly data from 2006 to 2008 as well as monthly exports from 2006 to 2008. Section V concludes.

2. Present World Scenario

The Great Depression of 1929 lasted for ten years with severe falling growth rates during 1930 (-8.6%), 1931 (-6.4%), 1932 (-13%) and 1933 (-1.3%) in USA. During the Depression, unemployment was 25% and wages fell 42%. Total U.S. economic output fell from $103 to $55 billion and world trade plummeted 65% as measured in dollars. As per NBER (National Bureau of Economic Research, USA, 2008), ten recessions have been observed since 1945 in USA. From mid 1940s till 2007, the average recession lasted for 10 months, while the average expansion lasted 57 months, giving an average business cycle of 67 months or about 5 years and seven months. In this period, the shortest recession lasted only 6 months, from January to July 1980. The two longest recessions during this period lasted 16 months each, one extending from November 1973 to March 1975, and the other from July 1981 to November 1982. There was a noticeable decline in real GDP in both of these periods. The shortest expansion period from the mid-1940s until 2007 lasted only 24 months, from April 1958 to April 1960.

UK also underwent recessionary period during 1981 and 1991. The recession of 1981 was caused by strong pound which made exports costly. Government attempted to reduce inflation with tight monetary and fiscal policies. Similarly in 1991, economy got heated resulting in high inflations and government took measures to control money supply with various means. During earlier recessions, developed countries remained the pivot.

The 2008 crisis has not precipitated through Keynesian or Marxian route of deficient aggregate demand surfacing as under-consumption or overproduction. The dollar crisis might have helped to stimulate aggregate demand, but the fact remains that real investment or consumption did not fall dramatically to precipitate the crisis. It is the negative wealth effect which shook the foundations of the financial sector and destroyed confidence, (Amit, 2009).

Epicentre of the present crisis is the US financial system that holds together most of the threads of financial globalisation. The possibility of a financial crisis was foreseen by several non-mainstream economists, but their voices were not heard as marketers were on a wonderful trip from the stock market to the housing market bubble till it lasted. Economic theory cannot tell when a bubble will burst. The first possible bubble was the collapse of dollar as the US increasingly became the largest debtor country in the world with a continuous current account deficit since the last quarter century. The world seems to have been tolerating this arrangement for at least two major reasons, one economic and the other political. Economically, US net imports provided the largest global market for selling goods, and most countries enjoying export-led growth in the post-war years. Japan, South Korea, the East Asian "tigers" as well as West Germany were next in the rank. A look at the list of these countries makes the accompanying political reason clear. The common factor was their military alliance and dependence on the US during the cold war era, (Amit, 2009).

The US personal consumption expenditure shot up to 70 per cent of GDP in the period 2000-05. The personal saving rate in the US dipped to -1 per cent, the lowest since the Great Depression of 1933. These get reflected in the prevailing bubbles in the consumer goods and housing sectors. Further, the high current account deficit is being financed by financial inflows, in turn feeding the housing and consumer loans, leading to historically high household debt to GDP ratios. This resulted into deep adjustment in US demand and in its current account in 2006 or thereafter. Any correction in US demand from 2006 has been exacerbated by further exogenous shocks such as petroleum price hike, erratic weather, and a market test of new Federal Reserve policies. The US is living beyond its means and net household savings, (Shome, 2006).

During 2008 and preceding years, in free market scenario, bankers and financers continued to innovate new credit instruments with little regulation. The whole game could be played within the private financial system virtually without regulation. Finally, by treating each other's debt as asset in the capital base for lending, the volume of lending could be expanded enormously. "Low margin, high volume" by pushing loans to more risky borrowers became the name of the game. This was symbolised by subprime lending, (Amit, 2009, Rajiv, 2009).

The acuteness, unpredictability and speed of the economic downturn can be gauged by the frequent downgrading of forecasts by the IMF. An IMF assessment in early November 2008 projected that the world output would grow by 2.2 per cent in 2009 as compared to 3.4 per cent in 2008 and 5.2 per cent in 2007 (IMF, 2008b and 2009b). This has been revised in January 2009 to as low as 0.5 per cent and there is talk of the global GDP actually contracting in 2009 if major emerging economies are unable to compensate for the massive loss of external demand. There is a stunning decline of exports in some major economies in the third and fourth quarters of 2008. In January 2009, exports fell sharply in Japan by 46.3 per cent, in Germany by 20.7 per cent, China by 17.5 per cent, in India by 15.9 per cent and in UK by 6.7 per cent. Japan and Taiwan saw a fall in exports of around 35 per cent and 40 per cent respectively in their exports in December 2008, (Rajiv, 2009).

Impact on India

Economists attempted to find the ramifications of US economic behaviour on economies such as China and India. It is likely that Indian economic growth could turn out to be more sustainable than that of China. (i) While Chinese industrial production has been growing at 16-17 per cent per annum, China is more export dependent at 35 percent of GDP. Thus, any belt tightening in the US will hurt China significantly. (ii) In turn, East Asian economies that are dependent on Chinese demand, such as Japan, Korea and Taiwan, would be adversely affected. (iii) Given that personal consumption as a percentage of GDP in China is less than 45 per cent – lower than that of India – it is safe to assume that India's internal demand would act as a better buffer than that of China in the likely event of a US downturn, (Shome, 2006).

3. Indian Scenario

Pre-reforms Scenario:

It is a known fact that India's first Prime Minister, Nehru, was more sympathetic to socialist beliefs. This resulted in a cautious policy environment where self-reliance, import substitution policy and indigenous efforts were vigorously encouraged by government. During the 1970s the Indian state eventually developed an intricate body of rules and regulations, which led to a highly protected economy where government departments displayed increasing levels of interventionism in the basic functioning of the economy. The key outcome was that private industry lobbied for and received protection behind tariffs and quota walls, which ultimately undermined the competitiveness of Indian industry in general and led to high-cost inefficient production, (Sharma et al, 2003). Public sector became dominant with the share of public sector in GDP exceeding 25% and in the economy's capital stock of about 45% at the end of the eighties. All nationalized banks accounted for over 90% of the financial sectors in the early nineties. Policy of subsidized and directed credit became unsustainable that eroded the net worth of the banking sector. Bhagwati (1992) divided the factors, explaining Indian economic failure into three groups – i) Extensive bureaucratic controls over production, investment and trade, ii) Inward looking trade and foreign investment policies and iii) A substantial public sector, going well beyond the conventional confines of public utilities and infrastructure.

Until the 1991 reform measures, government control over production, investment, technology and location choice, prices and foreign trade had become so extensive that there was no possibility of exercising the discretion vested in the layers of bureaucracy by the system of controls in a rational manner. It was a chaotic system of incentives and opportunities of rent seeking. India's share of foreign trade (exports plus imports) fell from its level above 2% at the independence to about 0.5% in 1990. The share of foreign trade (exports plus imports) in GDP at market prices was virtually unchanged, increasing from 12% in 1950-51 to 14% in 1990-91, (Bipin Chandra et al, 1999).

Srinivasan (1996) observed that extent of poverty went down since independence, and reduction in poverty arising from a more rapid debt-led growth without structural reforms, meant its future sustainability was doubtful. In contrast to the targets for income growth of 5.5% - 7.5% per year in the various five-year plans since the second, except the fifth, national income grew only at an average rate of less than 4% per year in the forty years period (1950-51 to 1990-91). Self-sufficiency, at very modest levels of consumption, has been achieved in a number of commodities including food grains. The share of gross domestic capital formation in GDP almost doubled from 14.7% in 1950-51 to 23.6% in 1990-91. However there was no commensurate increase in the rate of growth of GDP because of capital-intensive character of the investment.

However Rakesh et al (2008) have positive views. It is widely believed that the Indian economy witnessed near stagnation in real GDP growth till the late 1970s. A closer review of the performance of the Indian economy, however, suggests a continuing increase in real GDP growth over each decade since independence, interspersed with an interregnum during the 1970s. There are two other features of this growth. First, agricultural growth has been subject to large variation over the decades.

The 1970s interregnum is particularly marked by the severe deceleration in agricultural growth, followed by a marked recovery in the 1980s, and a slowdown thereafter. Second, until the 1990s, little note had been taken of growth in the services sector. The slowdown of growth witnessed during the 1970s was reversed during the 1980s; the pick-up benefited from the initiation of some reform measures aimed at increasing domestic competitiveness.

Post Reform Scenario

The financial and others problems faced by Indian economy in 1991, triggered reforms. The fall of communist governments in the former Soviet Union and Eastern Europe, development experiences of South Asian countries during the last two decades, Chinese economic reforms towards liberalization and out-ward orientation as well as lesson of India's experimentation with a closed economy and state directed policy regime during the first four decades of planning, further necessitated economic reforms in India (Sankar, Kalingam 2001, Sachdeva, 2005). A balance of payments crisis in 1991 led to the initiation of an ongoing process of trade liberalisation. This corrected the in built systemic bias against exports. Increased competition and firm presence in foreign markets injected a greater degree of quality consciousness and customer orientation. In the past foreign firms were largely absent from the protected market. Flow of capital increased liquidity and confidence. These changes reduced the tendency of Indian firms to seek and obtain protection from foreign imports. India started building up new areas of strength in export markets by moving to computer software exports, exports of pharmaceuticals and engineering manufactures in addition to traditional export strengths in gems, jewellery, textiles and primary products, (Srinivasan 1998, Sharma et al, 2003).

Restructuring measures by domestic industry, overall reduction in domestic interest rates, improved corporate profitability, a benign investment climate amidst strong global demand and commitment rules-based fiscal policy led to real GDP growth. Gross domestic savings increased continuously from an average of 9.6 per cent of GDP during the 1950s to almost 35 per cent of GDP at present; over the same period, the domestic investment[2] rate also increased continuously from 10.8 per cent

[2] Broadly difference of capital formation and saving rates remained only 1% GDP in India since 1991.

in the 1950s to approximately 36 per cent by 2008-09. Public sector also showed improvement. The savings rate of the overall public sector improved from (-) 2.0 per cent of GDP in 2001-02 to near 3.5 per cent of GDP in 2008-09. Public sector savings gave an indirect lift to private domestic savings from 23.5 per cent to 34.8 per cent over the same period. The public sector investment rate increased from 6.9 per cent of GDP in 2001-02 to 7.8 per cent in 2008-09, but this level is still significantly lower than the public sector investment rates of the 1970s, 1980s and early 1990s. The macroeconomic review of the Indian economy does suggest a strengthening of the fundamentals in terms of movement to a higher growth path in recent years, supported by investment, savings and improvement in productivity, (Rakesh, 2008).

Indian economy has become much more integrated with the world economy now than the pre-reform period. Liberalization in industry, investment, foreign trade, financial sector and capital flows that was undertaken after the balance of payment crisis in early 1990s led to India becoming well integrated with the world economy. Total trade flows (receipts and payments on merchandise and invisibles[3]), as a proportion of GDP, rose from 20 per cent to 53 per cent during the period 1990-91 to 2008-09. Capital flows (inflows plus outflows) had been just 12 per cent of GDP in 1990- 91, and in 2007-08 they rose to 64 per cent of GDP. Interestingly, these ratios are significantly higher than those in the US for which in 2007 trade in goods and services constituted a lower 41 per cent of GDP and capital flows were only 25 per cent of the GDP in that year.

However, Sharma at al (2003) analysed the data from 1971 to 2000 by Johnson's co-integration procedure and found that a co-integration relationship between exports and GDP did not exist. Granger causality test also did no provide any evidence that there was any relation between exports and GDP. But Shome, (2006) feels that despite high household savings, consumers are credit rich. Domestic demand is expected to remain high.

India has faced three major crisis since 1980s,- i) 1991-92 balance of payment (BOP) crisis; ii) 1997-98 fallout from the Asian financial crisis; and ii) 2000-02 crisis caused by the worldwide bursting of the dotcom bubble and 9/11 incident. Rajiv (2009) finds that export growth slumped by 12 percentage points during the crisis periods. But the export sector recovered in just one year after the slump in all the three major crises. The sudden recovery of exports can be due to the huge depreciation that

[3] Invisible receipts are mostly from exports of services like software exports.

is seen during the crises period. He further noted that import growth starts falling two years prior to the crises. The fall in import growth in the three major crises is greater than the fall seen in export growth. Import growth fell at an average of 14 percentage points and recovery also takes longer than for exports. The sharp depreciation during the crisis period makes the imports more expensive, hence, leading to their prolonged slump.

The global financial sector meltdown precipitated by the collapse of Lehman Brothers in September 2008 and the subsequent virtual nationalization of AIG, the world largest insurance company, impacted India at a time when the economy was already in the midst of a cyclical slowdown. Spooked by market rumors and some circumstantial evidence, depositors sought safety by shifting their deposits away from private banks to large public sector banks as reflected in the State Bank of India (SBI) seeing an increase in deposits of more than Rs. 1000 crore per day during that period. Foreign institutional investors (FIIs) withdrew from the Indian markets to provide the much-needed liquidity to their parents in the US or Europe. This resulted in a net repatriation of about $ 13 billion by the FIIs in 2008 on account of equity disinvestment, though small, has resulted in a sharp decline in equity prices and market capitalization.

With the increased linkage with the world economy, India cannot remain immune to the global crisis. Basically there are three channels through which India is affected by the global crisis: (i) financial markets, (ii) trade and (iii) exchange rate. Major Causes of Slow down in India during 2008-09 are i) Impact of Monetary Tightening ii) Industrial Sector Weakness and iii) Monsoon-dependent Agriculture iv) Investment weakness v) Fiscal measures

Indian experience shows that high fiscal deficit hurts economic growth. Due to monetary and fiscal policies to cool the heated economy and control inflation, the combined overall fiscal deficit of centre and states would be about 11 per cent of GDP in 2008-09 as against 5.4 per cent in 2007-08. This high fiscal deficit marks a sharp reversal of fiscal consolidation happening over the last 6 years. Attempts to raise public sector consumption to revive aggregate demand crowd out both private consumption and investment. It has no longer impact on output. On the other hand, government expenditure on infrastructure investment crowds in private investment; and public investment in manufacturing adversely affects private investment. With the fiscal deficit estimated to be above 10 per cent of GDP in 2008-09, the ratio of public debt to GDP is set to exceed 87 per cent of GDP at the end of the year. This is likely to rise further in 2009-10 as preliminary estimates for the fiscal deficit for the next fiscal year are also above 10 percent and could be higher if the GDP growth slows down further.

The trade channel has worked negatively with the collapse of global demand for Indian exports, both merchandise and services. As a result, growth in India's exports slowed down sharply in September 2008 and turned negative from October onwards. Merchandize exports have been growing at 29 per cent till September 2008. Software exports grew by 22 per cent in H1 2008-09 and remittances by 49 per cent. A 10 per cent decline in the growth of export of goods and services could bring down the GDP growth significantly. Further, the rupee has been depreciating since January 2008 as a direct result of the huge reverse flow of capital out of India. From an average Rs. 40.36 per US dollar in March 2008 it fell to an average of Rs. 49.00 in November 2008, depreciation of about 18 per cent and further to nearly Rs 52 at the beginning of March 2009. This is a decline of 22 per cent over the same month in 2008. Depreciation is good for Indian exports but it will have adverse effects on corporate who borrowed abroad and will raise the cost of external debt servicing. Outstanding commercial borrowing at end- March 2008 had been US$ 62 billion (GOI, 2008). Rise in budget deficit may reduce investment by increase in the rate of interest and therefore trade deficit may not rise. Ricardian Equivalence hypothesis, however, emphasises the adjustment in savings to budget deficit, Suparna et al (2005).

Rajiv at al (2009) estimated India's growth rate by Leading Indicators Index for the year 2008-09 and 2009-10 using Principal component index with quarterly series for the period 1997-2008. According to them GDP growth rate for the year 2008-09 would by 6.3 % and for year 2009-10 would be 5.5% provided the shocks are moderated by policy response otherwise growth rates would be 6.3% and 4.8% with shocks.

Pulapre (2007) et al analysed the data of public savings and comment that the largest magnitude of capital formation is occurring in the manufacturing sector, though the percentage increase in "community, social and political services" is large. In agriculture, after a lacklustre performance for two or three years, capital formation has picked up since 2005- 06. Yet, Capital formation in the group "agriculture, forestry and fishing" is less than that in "transport and communications" and "financing and insurance", Pulapre (2007).

4. Facts (Data Analysis)

It is almost 18 years when economic reforms with structural adjustment programmes were initiated during July, 1991. Indian records are maintained April to March every year. So data for the period 1973-74 to 2008-09 (in short 1973 to 2008) collected from Hand Book of Indian Economy published by Reserve Bank Of India (The Central Bank of India) annually has been analysed. Quarterly and monthly data has been collected from the Ministry of Statistics and Programme Implementation, New Delhi site http://mospi.nic.in and its various press releases during the period 2006 to 2008. Data for eighteen years before and eighteen years after the reforms have been analysed by calculating Compounded Growth Rates (CGR) and its significance, testing the series for Unit Root, their cointegration, de-trending the series, Granger Causality Test, and multiple regression of residuals to see their speed adjustment in short run.

Growth rate of GNP Components[4]

The effects of opening of the economy can be seen from Table 1 which depicts the CGR of GNP at Market Prices, Private Consumption (Con), Government Expenditure(GE), Capital Formation (CF), (all at constant prices with a base of 1999), Exports of Goods(ExpG) and Exports of services(ExpS) (both at current prices in Indian rupee). CGR of GNP at constant prices has shifted from 4.66% to 6.53% after reforms. Similarly Private Consumption growth rate has increased from 4.22% to 5.4%. Growth rate of Government Expenditure has increased from 0.66% to 5.72%. The highest change is in export of goods and services. Exports of services which were falling at the rate of 18.29% before reforms are growing at the rate of 28.41% after reforms.

Table 1: CGR of Major GNP Components

	Before 1991		After 1991	
	CGR	P-value	CGR	P-value

[4] There is a consensus that major compositions of demand growth are Private final consumptions expenditure (Con), Government Final Consumptions Expenditure (GE) and Gross fixed capital formations (GF), Export of Goods (ExpG) and services (ExpG)

GNP	4.66	0.000	6.53	0.000
Con	4.22	0.000	5.40	0.000
GE	0.66	0.000	5.72	0.000
CF	5.44	0.000	9.46	0.000
ExpG	13.73	0.000	17.31	0.000
ExpS	-18.29	0.210	28.41	0.000

Table 2. Cause of various components on GNP
Granger Causality Test F values Pre and post reforms

	Period 1973 to 1990		Period 1991 to 2008	
	F	P-value	F	P-value
Con	0.76	0.3971	6.3816	0.0233
GE	3.01	0.1032	4.94	0.0420
CF	1.5324	0.2351	11.77	0.0037
ExpG	0.76	0.3953	6.11	0.0259
ExpS[5]	0.414	0.5297	2.794	0.1153

Granger Causality Test

Granger Causality test has been performed taking GNP to study the impact of various components on GNP and vice versa. Government expenditure Granger caused GNP which is statistically significant at 10% level before reforms. After reforms, private consumption, Government Expenditure, Capital Formation (i.e. Savings), exports Granger cause GNP, which are statistically significant as mentioned in the table. Export of services and invisible receipts also Granger cause GNP which is statistically not significant at 10% level, table 2.

Table 3 shows the Granger cause test results how GNP impacts on components. It has been observed that cyclic effect of GNP started after reforms. Reverse tests show that before reforms GNP caused Personal Consumptions, Exports of goods and services. After reforms consumption, Government expenditure and export of services are also caused by GNP.

Table 3. Cause of GNP on various components
Granger Causality Test F values Pre and post reforms

[5] Shown as invisible receipts in public accounts.

	Period 1973 to 1990		Period 1991 to 2008	
	F	P-value	F	P-value
Con	3.0526	0.1010	11.646	0.0039
GE	0.1769	0.8960	6.2416	0.0246
CF	1.4454	0.2479	0.0378	0.5477
ExpG	9.3224	0.0080	0.1501	0.7903
ExpS	17.8268	0.000	4.3284	0.055

Table 4 Coefficients of Residual Series to see the speed of change in short run

	Coefficients of						
	U_{CON}	$[L]U_{CF}$	$L]U_{ExpG}$	$[L]U_{ExpS},)$	R^2	F	n
Before reforms	**0.96***	**0.24**	**0.95**	**0.44**	**0.91**	**16.04**	**17**
After reforms	**1.2701***	**1.2153**	**2.98***	**3.3071***	**0.92**	**20.57**	**17**

***statistically significant at 1% level.**

GNP model on Consumption, Savings and Exports

Series were de-trended by $U_t = \Delta Y_t - \beta_0 - \beta_1 Y_{t-1} - \beta_3 t$ after testing for unit root with drift. Based on various analysis following model is proposed for Indian Economy

$$U_{GNP} = f(U_{CON}, [L]U_{CF}, [L]U_{ExpG}, [L]U_{ExpS},)$$

The model does not include Government expenditure. The models explain the speed how residuals adjust themselves for the long term series. Table 4 shows that before reforms only private consumption was statistically significant. However after reforms consumption, export of goods and export of services have also become significant along with private consumptions. There is no doubt that opening of the economy has increased consumption with the sharp rise in exports. Though capital formation has increased five times to effect GNP but it is statistically insignificant with p-value as only 0.24 (not shown in table).

Table 5 Quarter on Quarter Growth Rate during Year 2007 and 2008

		Q1	Q2	Q3	Q4
GDP	2007-08	9.16	8.82	9.41	8.85
	2008-09	**8.23**	**7.77**	**4.78**	**4.13**
Con	2007-08	8.37	7.52	8.91	9.01
	2008-09	**4.53**	**2.09**	**2.26**	**2.70**
GE	2007-08	-2.39	10.04	2.02	18.57
	2008-09	**-0.19**	**2.19**	**56.56**	**21.49**
CF	2007-08	13.63	16.03	14.11	8.76
	2008-09	**9.23**	**12.50**	**5.05**	**6.38**
ExpG	2007-08	-3.99	-4.82	6.14	9.84
	2008-09	**25.65**	**24.32**	**7.13**	**-0.80**
ExpS	2007-08	5.49	23.03	16.98	15.26
	2008-09	**50.98**	**78.67**	**42.47**	**39.96**

Recent Quarterly Trends of GDP

From the above analysis, it is clear that consumption and GNP effect each other similarly exports of goods and Government Expenditure are also affected by GNP, it is pertinent to see short term effect of world recession. It is a fact that growth rate of GDP at constant prices has fallen during the last two quarters of year 2008-09 in comparison to earlier corresponding period, Table5. Growth rate which was 9.41 % during the third quarter corresponding to earlier quarter fell to 4.78%. Similarly during 2008-09, 4th quarter growth also fell to 4.13 to its corresponding quarter of 2007-08. Similarly private consumption, capital formation, exports of goods have also fallen during the last two quarters of 2008-09 in comparison to corresponding quarters in earlier year. Even the exports of goods have gone to negative in the last quarter of the year 2008-09. However the good sign is services and invisible receipts which have grown 39.96% corresponding to it earlier quarters. India could not escape the shocks of world recession, as Indian economy moves along the world economy.

Monthly Export Trends

Monthly Export of Goods data has been analysed for the period from April, 2006 to March, 2009 (in short 2006 to 2008). It has been observed that time trend during this period is statistically significant at 1% level but exports are below trend line during this period as show in Fig 1

Monthly Compounded Growth rate of exports of goods for the three period was 1.14% which is statistically significant at 1% level, however during the period 2008 there is a fall at the rate of 1.17% in monthly exports which is statistically significant at 5% level.

The upper envelop has further been tested with following model

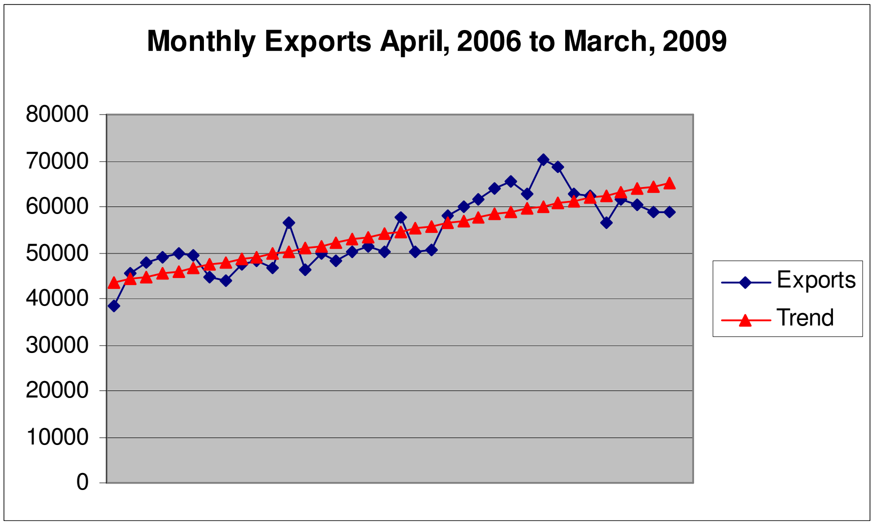
$$ExpG = 41110.99 + 771.74t + 54295.6\,D - 1822.79\,Dxt^{*}$$

$R^2 = 0.87$, $F = 36.49$ $n = 36$, * means statistically significant at 1% level.

Table 6 Monthly CGR of Exports of Goods

Period	CGR
2006	1.34%
2007	2.19%
2008	-1.17%**
2006-2008 (Total)	1.14%*

Fig 1 Monthly Exports of Goods since April, 2006.



Forecast by ARIMA

First difference of quarterly series of GDP, Personal Consumption, capital formation and exports for the period 2006 to 2008 have been calculated and subjected to ARIMA forecast using dummies for series. Year on year growth rate of forecasted value has been observed and it is found GDP shall grow at the rate of 5.6% during the year 2009-10. Consumption shall increase by 4.2% and exports shall fall by 1.6%.

5. Conclusions

India initiated its structural adjustment program to free its global trade, liberalise internal market and privatise means of production in 1991. Opening up of the economy resulted in increased GNP growth rate, private consumption, government expenditure, savings (in turn capital formation), and exports of goods and services. Increased GNP caused further increase in consumption, exports and government spending. During the years 2006-07 and 2007-08 the growth rate has been seen above 9%. The world slow down started during the second quarter of 2008, India's economy has fallen to growth rate of 4.5% during last two quarters of 2008-09. With the increased linkage with the world economy, India cannot remain immune to the global crisis. Indian exports have fallen by 1.17% on monthly basis during this year. This is significant fall.

Nonetheless, on the basis of earlier crisis experience, it is felt that it would take a year's time to normalise exports and two years to normalise imports. Silver lining lies in private consumption which causes GNP to increase and vice versa. However rising fiscal deficit due to expected heavy Government Expenditure may result in inflation which may not allow economy to rise in short term.

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