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Enterprising Entrepreneurship & Start-Ups : Models for Growth and Financing of Micro, Small & Medium Enterprises (MSMEs) in times of Recession

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Abstract

Nation's worldwide are en-tasked with responsibility to build sustainable future for all while maintaining appropriate environmental discipline and stable socio-economic growth. The changing structure of world investment, trade, capital flow and the need for deeper integration, strengthening regulatory framework and signaling system is greater. The paper outlines framework for challenges & opportunities before MSMEs in the Global Economy through an integrated model approach of (a) reducing Financial Volatility; (b) fostering Employment Growth and Economic Development ; (c) fostering Sustainable Environment ; (d) restructuring Pension Systems and Societal Setups; (e) Self-Assessment Financing Model for Inducing Sustainable Growth; (f) Goal Programing Model for Capital Structure Decision; (g) focus on Organic Agriculture, Empowering & Doubling Farmer's Income; (h) setting in Fiscal Discipline & re-orienting role of IMF; (i) re-energizing multi-lateral trade agreements (WTO) along with bi-lateral FTAs.

I. Introduction

1.1 *Financial Trends and Global Scenario*

THERE ARE OVER US$ 8 trillion worth of transactions that take place on a daily basis, which is equivalent to the total world trade every year. The persistent rise in the dispersion of current account balances of the world as a whole, wherein the sum of surpluses match the sum of deficits has grown substantially since the World War II. Since 1990, the un-regulated financial markets were set to induce growth for emerging and developed economies. However the economies have been hit one after the other with the fashion

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and need for market driven capitalist and liberalized economic systems. The emergence of the crisis in the last 36 years since 1982 beginning with USA (1982, 1989, 2007-08), India (1991), Russia (1992, 1998), Mexico (1994), East and South East Asian (1997), Brazil (1999), Argentina (2001), Greece (2012-14) and the most recent financial turbulence observed since 2008 in US and Europe estimating an impact of over US$ 8 trillion with over US$ 4.5 trillion already bailed out by the US Treasury in 2009-10 clearly bringing forth the failure of Banking and Financial Institutions which serve as the back bone of an economy and the life blood of an organization.

Nation's worldwide are en-tasked with responsibility to build sustainable future for all while maintaining appropriate environmental discipline and stable socio-economic growth. The changing structure of world investment, trade, capital flow and the need for deeper integration, strengthening regulatory framework and signaling system is greater (Agarwal, Agarwal and Agarwal, 2006). Globalization has altered the economic frameworks of both developed and developing nations in ways that are difficult to comprehend. Innovation has seeded the need to finance development and growth in rural regions. Also the emergence of unregulated global markets appears to have moved towards a more stable and growth oriented economic globe. What is needed today is to develop sensitivity sensor systems to promote technology within the financial framework as an integrated approach to keep markets from busting and causing socio-economic panics.

The India, China, Japan and the Uzbek Model of Economic Development have brought forth reform process for the nation's economic stabilization. Several phases of this process brought about miraculous effect in these economies. The main objectives of these models have been to create conscious instrument for purposeful economic development. The GNP growth, wages and the potential resources and sources of economic growth like investment, fuel, financial, energy, crediting, and material resource were the initial areas this model stressed on. Further the aspects related to price, currency, fiscal money and foreign economic policies were also added. The industrial and agricultural sectors are given equal importance for the developmental programmes. The government-led industralization and import substitution programs have induced growth with a focus on utilization of (a) cash crops and natural resources (including energy and non-ferrous metals) ; (b) public capital investment (c) promote growth in small business and entrepreneurship. This has contributed to the economies success in mitigating and reversing the output decline post-independence since 1991 (Zettelmeyer, 1998)

Faced with these uncertainties, it is especially important that policymakers undertake the required policy adjustments for a sustained global expansion. As well, supervisory and regulatory authorities need to continue to strengthen energy financial market infrastructure to underpin the resilience of the ecosystem towards sustained development and clean

tomorrow. In an attempt to build sustainable future of Nations in an interlocked global economic environment it is critical to focus on the following issues –

a. reducing Financial Volatility
b. fostering Employment Growth and Economic Development
c. fostering Sustainable Environment
d. restructuring Pension Systems and Societal Setups
e. Self-Assessment Financing Model for Inducing Sustainable Growth
f. Goal Programing Model for Capital Structure Decision
g. re-focus on Organic Agriculture, Empowering Farmers and Doubling Farmer's Income
h. setting in Fiscal Discipline & re-orienting role of IMF
i. re-energizing multi-lateral trade agreements (WTO) along with bi-lateral FTAs
k. Case Study on India
l. Case Study on Uzbekistan

We have attempted to address some of the above mentioned issues in our paper.

1.2 *The World Economy and Global Financial Turmoil*

The current financial crisis and global economic slowdown has fostered the need for unprecedented international policy coordination globally with key role players as US, Europe, Russia, China and India. The regulators of developed and developing regions have to work closely with each other, actively participate in the international Financial Stability Forum and the standard-setting bodies operating under the aegis of the BIS, World Bank, IMF, UN and other international agencies. There needs to be a tight focus today between the monetary policy and the fiscal policy, especially in meeting of the liquidity and trade needs of our increasingly globalised financial markets.

Agarwal (2004) clearly forecasted and projected at the IFC Chile on 7th January 2004 that the World Economy is heading for serious financial turmoil with US slowdown and the projected Oil Shock. Agarwal also said that the financial architecture built in the 1950 is not robust and efficient to meet the dynamism of today. The projections of early 2004 which came forth to be true in mid-2004 for Oil Price rise and 2007-08 for Global Financial Turmoil are quoted below

"The slow down of the US economy has a compound effect on the growth of the world economy by adversely affecting the demand for the products of partner countries as well. The effect of the impending slow down will be more severe on the growth rate of world trade which is likely to reduce to nearly a fifth of the rate achieved in 2000 to around 2.7 and 5.2 per cent in 2001 and 2002, respectively."

"The volatility of oil prices is a highly destabilizing factor for the world economy. It is more devastating for oil importing developing countries than for other countries. Given the strong cartel in the form of OPEC operating in this

market, it is not possible to rule out oil price shocks of the type faced in the early 1970s, early 1980s, early 1990s and 2000 or even in the future. It is imperative for international community to create a mechanism to regulate and stabilize oil prices at a certain reasonable and sustainable level. The intervention should bring the OPEC and other oil producers to observe some international discipline. Further, there should be some special fund to moderate the impact of volatility in oil prices for the poorer developing countries. The OPEC decision to cut output whenever oil prices tend to fall as witnessed in early 2001 indicates that oil prices will fluctuate around $ 30-35 per. barrel. Therefore, oil importing countries will have to adjust their economies to the new level of oil prices in the coming years."

"It is clear, however, that the challenges of globalization today and the resultant volatility in the international financial markets cannot be adequately handled by a system that was largely designed for the world 50 years ago. Changes in international economic governance have to keep pace with the growth of international interdependence."

"The world community need to consider the issues involving International Development Cooperation, Restructuring IMF, International Borrowing and Lending, Private Capital Flows, Portfolio Equity Flows, Short-term capital movements, Capital Account Convertibility and Domestic Resource Management, Strengthening banking and financial systems, more seriously to match them with the needs and requirements of home countries, regions and the world economy. Of course the financial systems as enumerated above need to be regulated controlled and developed to reap the fruits of financial developments in the world economy to provide stability in the financial markets and to make the world a better place for living. Finance would be required not only for construction and development of economies but also for reconstruction and rebuilding economies."

Fromlet (2005) rightly identified that China and India are the two biggest countries accounting for 40% of world population. Fromlet outlined the weakness and strengths of the two nations in sustaining the growth path adopted by them with one having deep routed democracy and the other with substantial autocratic controls fostering faster growth. Given that these countries started their opening and reforming processes at different times and chose different strategic approaches which is bringing them sharply up the global ladder in trade and investment. The long-term outlook for these two giants hence is important given that they provide a sustainable base for markets and production capacities.

The EMU and EURO's introduction has had a remarkable achievement in the European Integration process. The run-up to the EURO's establishment and the experience of the past decade have been associated with an unprecedented degree of policy coordination among the sovereign states within the Euro area, including cooperation in the areas of fiscal and regulatory policies as well as monetary policy (Bernanke, 2008). The integration process has been a shield and growth contributor to the EURO zone for the last one decade. However the Global Financial Meltdown, US$

depreciation against EURO and absence of Fiscal Control Mechanism creates pressures to de-stabilize the region and pose threats to the EMU system. Agarwal (1999) addressed on the challenges before integrating Europe suggesting the need for formulation of the European Constitution and the Fiscal Policy Board, which is finding place within Europe and European Institutions with the 1st draft of European Constitution submitted before the people in June 2004 and the Fiscal Stabilty Board (FSB) setup in 2017 (Agarwal, 1999; 2007). The need for Europe to focus on global partnerships and interdependence to take care of challenges faced in last 14 years due to higher un-employment (i.e. blue and white collor workers), lower growth within the region, US recession, inflationary pressure within Europe leading to internal dissatisfaction with the integration process is extensively stressed in the work. Agarwal (2007) and Agarwal, Agarwal and Agarwal (2017) highlighted that these issues are a matter of concern, as they may cause de-stabilization of the Global Financial Stability & Development within Europe.

Recent travails brings' forth the pertinent need for the financial regulatory framework requiring fundamental reform (Agarwal, 2004) even though the financial architecture is broader than the government's regulatory and supervisory response. The new financial architecture needs to properly understand and account for the dynamic relationship between private-market actions and public-sector structures. The economy's financial architecture is said to be a function of the relationship among financial institutions and market participants that transfer capital and risk between borrowers and savers. But the architecture has to evolve to be a mix of prescriptions and postures of the Political bodies, the Administration, the financial regulators (including central banks), NGOs and academic research centers in a more dynamic and robust form.

1.2.1 *Oil Volatility Factor*

The volatility in the oil prices is also a highly destabilizing factor for the world economy. It is more devastating for oil importing developing region of the world than for the others. Given the strong cartel in the form of OPEC operating in this market, it is not possible to rule out oil price shocks of the type faced in the early 1970s, the early 1980s, the early 1990s, 2000, 2004-08, 2012-13 and 2018 or even in the future. It is imperative for international community to create a mechanism to regulate and stabilize oil prices at a certain reasonable and sustainable level. It is commendable to see the efforts made by the OECD and other international agencies to bring forth suggestions to streamline the global oil shocks (OECD Observer, November 2004 and other eds). Also, we at the Indian Institute of Finance (IIF) have been working extensively to provide possible solutions to economies and international agencies since 1987. Some of our suggestions and research forecasts have been very apt and have helped nations to build shields against oil shocks. A recent forecast by Prof. J. D. Agarwal, indicated that oil prices were expected to shoot up, hence economies and international agencies needed to initiate effective steps to offset the shocks. Suggestions to this

effect were also considered in his paper, which appeared in Finance India, March 2004. This piece was written in December 2003, when no market indication of such a scenario was visible. Three suggestions which have been made by IIF at various forums are,

- firstly, to create an Oil Pool Account in 1990-91 by J. D. Agarwal, which was duly initiated by India and some other countries, has helped India live with the shock which the world has seen in the last two years and
- secondly, to development more active derivative markets (both financial and commodity) with products on oil (OECD Observe, July 2005) and their use by markets globally would help to bring discipline to the oil market and a reduction of pure dependence on OPEC or a select few nations.
- thirdly, to strengthen domestic currency specially in a case like India, where market pressures are there for the INR to appreciate countered by the RBI and the MoF, as most countries suffer on account of imports bills from Oil, which are purely in-elastic in nature. Incase of India itself, we only produce about 36% of Oil Consumption needs. The balance 64% is imported from defferent parts of the world in the Arabic Region, US, Russia, South East Asia and others.

It was high time that the global economies and the developed world understood the severity of high oil prices which had led the world economy to observe a steep rising inflationary trend. In such a scenario, the above suggested means or other mediums need to be adopted immediately to stabilize and bring down the oil prices to an appropriate sustainable level of around US$ 40 – US$ 50 per barrel given that Jet light fuel (air-travel fuel) had been hovering around US$ 18-22 per barrel (in 2009 and also in 2018). Henceforth, the world has seen a steep rise to US$ 124 per barrel (2012-13), with fall to US$ 30 per barrel (in 2016) and a highly volatile commodity between 2017-18 with sharp rise and falls. In 2019, it is expected to stabilize around US$ 55 per barrel if the world wish to contain over growing inflation and economics falling to the knees.

1.2.2 *Money Laundering, Financial Markets & the Real Estate*

Money Laundering is generally characterized by the intensity of fluctuations affecting the price in financial markets and generation of illegal money and a facilitator breading terrorism in the long run. In a global financial environment of global imbalances, economic sluggishness/ slowdown in Developed regions, Pension Problems, Un-employment on a rise the buoyancy in the Real Estate Market, The Capital Markets and the Bullion Market are a cause of concern and are required to be checked (Agarwal and Agarwal, 2008; Agarwal, Agarwal, Agarwal and Agarwal, 2017; Agarwal, Agarwal and Agarwal, 2018)

Estimates arising from forecasts bases on regression lines and those of economic intelligence units indicate that globally Money Laundering amounts to more than US$ 2 trillion to US$ 2.5 trillion annually (i.e. about 5-6% of World GDP 2006 [44.444 trillion]) (Fabre, 2005; Agarwal and Agarwal,

2006), through formal channels. Our earlier estimates show that the money laundering magnitude with the banking sector along in 2004 was around US$ 500 billion to One Trillion (Agarwal and Agarwal, 2004). Money-laundering is not only economically destabilizes for an economy but also exposes it to terrorist attacks, threatening the integrity and sovereignity of the nations concerned. It conceals the huge, illegal profits generated by unscrupulous organized criminal groups in various fields of crime. Money laundering generally involves a series of multiple transactions used to disguise the source of financial assets so that these assets may be used without compromising the criminals who are seeking to use the funds.

The Real Estate has been one of the most common and the simplest means to launder money for over a century now. The last two decade (1995 onwards) has seen leaps and jumps in the real estate markets globally (Banker, 2005; Baker and Rosnick, 2005; Schneider, 2005; FCEN Report, 2006; The Economist, 2007) to the tune of over 300% increase in the real estate prices in prominent urban cities and about 100% as an average of the global economy in general. Is this rise in tune with a fundamental basis for the Real Estate price increase is a question to be asked. Also it is interesting to note that this steep rise in the Real Estate markets till the early 2008 has been coupled with a high degree of correlation with the sharp rise in capital markets, the bullion markets and the international flows globally particularly in the last 15 years.

1.2.3 *US & the Foreign Policy*

A 200 year old nation has not only provided the waive for modern financial system (since early 1900s), but has also emerged to be a world leader in structures, strictures and policy frameworks adopted by the World Economy and its global institutions. In the last 25 years post emergence of a single polar world, it is visible that the US role has extensively enhanced in global issues with deep interest in different country policies and alliance they adopted. This came as a resultant of the US growth in the post World War scenario, which got factored in by the services sector having an average contribution to over 70% of US-GDP through the re-building of Europe and War tore nations. The US policy framework had great shifted from domestic growth focus to foreign policy led growth (post 1970s) as an outcome of their role play getting inception with the Bretton Woods System (July 1944).

The emergence of the Global Financial Crisis having clear routes in US and the US President Trump coming in place, will foster needs for US to bring extensive re-structuring of their domestic economy, labour markets and financial architecture (Agarwal, 2008c; Agarwal, Agarwal and Agarwal, 2018). This can also be observed if we look at the electoral mandates and the addresses made by Donland Trump as part of the Election campain. This would enlighten a strong life support the US ailing economic framework and give breathing space for Nations under extensive stress and/or purview by US, to develop their independent policies to induce growth and meet with the current Financial Turmoil, not having US as a parenting figure around them.

1.2.4 *Europe & the European Integration*

The EMU and EURO's introduction has had a remarkable achievement in the European Integration process. The run-up to the EURO's establishment and the experience of the past decade have been associated with an unprecedented degree of policy coordination among the sovereign states within the EURO area, including cooperation in the areas of fiscal and regulatory policies as well as monetary policy (Bernanke, 2008). The integration process has been a shield and growth contributor to the EURO zone for the last one decade. However the Global Financial Meltdown, US$ depreciation against Euro and absence of Fiscal Control Mechanism till 2017 had created pressures to de-stabilize the region and pose threats to the EMU system.

Agarwal (1999) addressed on the challenges before integrating Europe suggesting the need for formulation of the European Constitution, strong European Identity and the Fiscal Policy Board amongst other key suggetions. Three of the suggestions have been able to find place within Europe and European Institutions with the 1st draft of European Constitution submitted to the people in June 2004; the emergence of the European Identity over National Identity in the last 19 years and the formulation of the Fiscal Stability Board in 2017 (formalizing the Fiscal Policy Board proposed and informally exisiting since 2003 onwards). The need for Europe to focus on global partnerships and interdependence to take care of challenges being faced in last 15 years due to higher un-employment (i.e. blue and white collor workers), lower growth within the region, US recession, inflationary pressure within Europe leading to internal dissatisfaction with the integration process is extensively stressed in the work. Agarwal and Agarwal (2007) and Agarwal, Agarwal and Agarwal (2018) highlighted that these issues which are a matter of concern, as they may cause de-stabilization of the Global Financial Stability and the Development within Europe.

II. Employment Growth and Economic Development Model

Economic growth is extensively dependent on Employment growth. Many developed economies have shifted these resources to only one segment namely Services. The GDP contribution of services sector is between 60-80% for most developed economies in the last 4 decades. It is important that there is homogenous distribution of other sectors – agriculture and industry to contribute and have sustainable economic growth. This is despite the fact that corporations see economically benefiting externalities in economic havens, low cost economic zones and developing regions of the world. It is important that the government steps in to create avenues for domestic and foreign participants contribute in the growth of the three sectors to have homogenous contribution to the GDP with small year-on-year variations. We have been proposing two forms of employment growth structures (a) Startup and Venture Finance Model for HR Capacity Building in Global Dis-equilibrium (Agarwal, Agarwal and Solojentsev, 2008, 2009, 2014) and (b) Theory of Employment, Wealth and Efficient Labour Market through National Labour Exchange (Agarwal, Agarwal, Agarwal and Agarwal, 2017). Both of these have been explained below.

2.1 *Start-Up and Venture Finance Model for HR Capacity Building in Global Dis-equilibrium (Agarwal, Agarwal and Solojentsev, 2008, 2009, 2014)*

Venturing and adapting economic systems to fast changing market orientations in troubled times in different regions of the world have been observed to play critical role in inducing economic growth and boasting employment. Agarwal (1974, 1988) Goal Program Model for decisions under Risk and Uncertainty and Agarwal, Agarwal and Solojentsev (2008) Human Resource Capacity Building Model in Venture Capital funded ventures provide solution to enable organizations adapt to fast changing environments.

The genesis of modern venture capital in existing literature is traced to the activity of Spanish Queen Isabella of Spain who sponsored the voyage of Christopher Columbus. DuPont (1919) is regarded as the first modern day venture. DuPont purchased thirty eight percent of equity interest in General Motors. IBM was established in 1924 by a group of wealthy individuals by merging a few smaller companies. Ralph Flanders, president of Federal Reserve Bank of Boston proposed creation of fiduciary funds which would enable institutional investors to invest five percent of their assets in equity of new ventures. Xerox Corporation is an excellent example of corporate venture finance whereby Haloid Corporation invested in the technology developed by Chester Carlson and Battelle Memorial Institute. The first venture capital firm in California – Draper, Gaither and Anderson was founded in 1958 and led to development of formal venture capital firm in Silicon Valley and San Francisco (Florida and Kenney, 1988).

In India, Chankaya (350-283 BCE) a Professor at Takshashila University on being thrown out by the Nanda King ventures in to make a boy wandering in the streets the first Maurayan Emperor Chandragupta. Chandragupta Maurya (340 BC - 298 BC) reign is remembered for defeating Alexander's Macedonian Satrapies, Nanda Empire and Seleucus and for unifying India. The period of Mauryan Empire (322 BC - 185 BC) is regarded as the Golden Age in Indian History with trading done in *Silver Pannas*. Taksha, an ancient Indian king ventured into creating a centre of advanced learning called Takshashila (5th century BC) for teaching of Vedas and advanced knowledge in eighteen arts including archery, hunting, elephant lore, law, medicine and military science. The Nalanda University (1197BC-527 BC) was the first university to be setup in the world housed over 10,000 students and over 2,000 teachers on the campus. The Nalanda University attracted students and scholars from all across the globe in a period when global information flow and transportation was negligible. The idea of Pandit Madan Mohan Malaviya to set up a Hindu University which will spread oriental learning and theology contributed to the development of the prestigious Banaras Hindu University (1915), a centre of excellence even today. Kashi Naresh and Sri Rameshwar Singh Bahadur, Maharaja of Darbhanga funded this venture. In agriculture the share cropping institution (in which input costs and output revenues are shared by cultivator and

Table I
Genesis of Select few Key Venture Finance Projects

The current research traces the genesis of Venture Finance in India to fifty century BCE Classical Venture Finance, which can be traced to development of Nalanda University, Takshashila, Mauryan Empire and in recent times to Biocon and VLCC. Corporate Venture Finance can be traced to emergence of Alexandra Cotton Mill, Benaras Hindu University, Yarn and Jute Mill of Goenka, Lijjat Papad, Infosys and Kshema Technologies. Institutional Venture finance started in late 1980s with the development of TDICI in 1988.

Year	Venture	Venture Finance Provider / Contributor	Country
527 BC	Nalanda University (527BC to 1197)	Kumaragupta	India
518 BC	Takshashila	King Taksha	India
350 BC	Chandragupta Mauryan Empire (350-283 BC)	Chankaya (Kautilya)	India
1492	Christopher Columbus expedition (Colonization)	Isabella, Queen of Spain	Spain
1869	Alexandra Cotton Mill	Jamsetji TATA	India
1906	Xerox	Haloid Corporation	US
1908	General Motors	DuPont (VF in 1920)	US
1915	Banaras Hindu University (Oriental learning and Theology)	Kashi Naresh and Sri RS Bahadur, Maharaja of Darbhanga	India
1919	Yarn and Jute Mill	Ramnath Goenka	India
1924	IBM (Punched Card)	TMC (1896), CSC(1891) and ITRC (1900) merged	US
1926	Bajaj motors (Motor Vehicles)	Seth Bachhraj	India
1938	Eastern Airlines and Douglas Airlines	Laurance Rockerfeller funded Venrock	US
1946	Amul	Gujarat Co-operative Milk Marketing Federation Ltd.	India
1950	Share cropping farming institution (Tobacco)	Landlords and farmers	India
1957	Digital Equipment Corp. (now HP)	Georges Doriot, Ralph Flanders and Karl Compton/ ARDC	US
1959	Fairchild Semiconductor (Practical integrated circuit)	Laurance Rockefeller funded Venrock	US
1959	Lijjat Papad	Shri Mahila Griha Udyod	India
1960	Florida Foods Corporation (Nutritional one minute juice)	J.H. Whitney and Company	US
1962	Reliance Commercial Corp.	Dirubhai Ambani	India
1968	Intel (X86 Microprocessors)	Robert Noyce and Gordon Moore	US
1977	Oracle (Database software)	Larry Ellison, Bob Miner & Ed Oates	US
1978	Microsoft, DOS (Disk Operating System)	Bill Gates and Paul Allen	US
1978	Biocon	Biocon Biochemical Ltd. (Ireland) and Kiran Mazumdar Shaw	India
1981	Infosys	Sudha Murthy	India
1984	Cisco (Router)	Len Bosack and Sandy Lerner	US
1987	Business Finance Education in India	Indian Institute of Finance	India
1987	3i Group	Bank of England	UK
1989	VLCC	Vandana Luthur and family	India
1992	MASTEK	ICICI and UTI promoted TDICI	India
1994	Amazon.com (Online Book store)	Jeffrey P. Bezos	US
1994	Yahoo (Search Engine)	Sequoia Capital	US
1996	Hotmail (Free Webmail service)	Draper Fisher Jurvetson	US
1997	Kshema Technologies (Customised IT Services)	Anant Koppar	India

Source : Self Formulated from Historical Archives, Encyclopaedias & Wikipedia

land owner) of land tenancy lead to development of entrepreneurship in Indian farmers. Share cropping form of land tenancy promoted farming in a number of non conventional items including tobacco. Most of the MBA's offered do not focus on a number of financial issues which have attained vitality post 1985 with organization failures due to poor management and understanding of Finance. There exists an over-emphasis on other streams of management which were on the peaks of organizational success in the 1950 to 1980s leading them to create general MBAs with specialization in only one semester having two to four papers in specific management discipline. Indian Institute of Finance recognising this need pioneered business finance education in India in 1987.

2.1.1 *Human Resource Capacity Building Model*

The production function in any firm requires two critical inputs i.e. Capital and Labour. In a venture capital funded venture, human capability augmentation takes place at one end with capital provider and on the other hand with the capital receiver. Labour in a venture capital firm includes both office and administrative staff and floor level workers. As in the consumer theory the objective of a firm is to maximise output represented by

$$\text{Maximise } F(K, L) \tag{1}$$

where, K is capital and L is labour

$$\text{Subject to the cost constraint } wL + rk = C_0 \tag{2}$$

For cost minimisation the necessary condition includes that the marginal products of all production inputs must be equal when these marginal products are adjusted by the unit cost of each input i.e.

$$MP_L/w = MP_K/r \tag{3}$$

So to minimise the cost and for achieving the results as represented by equation (3) both the capital provider and receiver must ensure that human capabilities are engaged in a manner that provides the maximum output to an economy

As per the linear programming format of the Stochastic Goal Programming Model (Agarwal, 1976) a firm will try to

$$\text{Minimise } C = (P_i d_i^+ + P_i d_i^-) \tag{4}$$

$$\text{Subject to} \quad ax_i + u_i x_i + d_i^- - d_i^+ = b_i \tag{5}$$

$$x_i, d_i^-, d_i^+ > 0 \tag{6}$$

where, P_i refers to priority coefficients, $d_i^{+/-}$ refer to positive and negative deviational variables, u_i is a random variable which is normally distributed with mean zero and variance-covariance matrix Σ "a" is a matrix of fixed coefficient representing row vector, x_i are the column vector and b_i is a function of all the goals i.e. Given that a venture capital firm receiver and provider desire to achieve particular goals $(x_1, x_2, \ldots, x_n)$ then $b_i = f(x_1, x_2, \ldots, x_n)$

Now by using equation (1) to equation (6) for Human resource capacity building a priority based model is proposed. The extent to which human personnel are employed depend on the priority the venture capital provider and receiver pay to each of the below mentioned variables. Therefore a priority based model for the pre investment phase is as follows.

2.1.2 *Pre-Investment Human Resource Capacity building Model*

Schumpeter (1942); Baumol (1968); Leibenstein (1968); Tyebjee and Bruno (1984); Drucker (1985); Kirzner (1985); MacMillan; Zemann and Narasimha (1987); Rumelt (1987); and Teece (1987) have elaborated on the functions of an entrepreneur and how his functionality is different from that of a manager. However, there exists very little empirical evidence on how does an entrepreneur lead to human resource augmentation in a new venture. With increasing large scale retrenchment in the light of global financial crisis of 2008 it is important how does an entrepreneur can involve such retrenched staff and help tackle increasing unemployment and contribute to growth in the real sector. Entrepreneur has been kept as the alpha coefficient in our model because of the ability to combine tangible and intangible resources in novel fashion (Kirzner, 1973) and can specialise in development of new business activities (MacMillan, Kulow and Khoylian, 1989). Akerlof (1970) discussed the Information asymmetry problem in the used car market. In venture finance information asymmetry also arises between the entrepreneur and the VC firm. The entrepreneur is reluctant to share the entire details of the project with the finance provider and the investor in a new venture tries to know more and more about the venture. This contributes further in hiring of more individuals to prevent adverse selection by the fund provider. During the pre investment phase human resource has to be employed by the venture capital provider for accepting, screening, negotiating, drafting and signing on the contract. The entrepreneur has to employ human personnel that can help in preparation of proposal

$$\text{Maximise } HRCB_1 = \alpha + P_1^{+/-} DPS + P_2^{+/-} DAS + P_3^{+/-} DSS + P_4^{+/-} DNS + P_5^{+/-} DM \quad (7)$$

where,
- α Entrepreneur and/ or innovator
- DPS^1 Deal proposing staff
- DAS^2 Deal accepting staff processing both solicited and unsolicited proposals
- DSS^3 Deal screening staff undertaking technical and economic feasibility of the venture
- DNS^4 Deal negotiating staff
- DM^5 Deal makers who may or may not form the board of the new venture

2.1.3 *Post-Investment Human Resource Capacity building Model*

$$\text{Maximise } HRCB_{1+} = P_6^{+/-} PDS \quad P_7^{+/-} LS + P_8^{+/-} MS_1 + P_9^{+/-} MS_2 + P_{10}^{+/-} RS + P_{11}^{+/-} OS + P_{12}^{+/-} ES + P_{13}^{+/-} FS + P_{14}^{+/-} PIMS + P_{15}^{+/-} SDMS + P_{16}^{+/-} HHS + P_{17}^{+/-} LS + P_{18}^{+/-} CCS + P_{19}^{+/-} SLS + P_{20}^{+/-} EDS \quad (8)$$

where,
- PDS — Product/service development staff
- LS^6 — Labour for manufacturing the product or employees for providing service
- MS_1 — Managerial Staff supervising the line function
- MS_2 — Marketing staff commercialising the new product/service
- RS — Research staff reviewing the product/service (including receptiveness in the market) and suggesting changes for further development
- OS — Operational staff taking both order and sales
- ES — Evaluation staff (ensuring quality and cost control)
- FS^7 — Finance staff (managing the future liquidity requirements of the venture)
- $PIMS^8$ — Post investment monitoring staff of the venture capitalist
- $SDMS^9$ — Strategic decision making staff may serve on the board of the new ventures
- HHS^{10} — Head Hunting staff
- LS — Legal services staff taking care of patents
- CCS — Customer care staff
- SLS — Supplier liaison staff
- EDS^{11} — Exit determining staff of the venture capitalist

Equation (7) and equation (8) may be solved a linear regression equation or as a Linear Programming problem with equation (3) as the constraint. The aggregate effect of venture financing on employment growth may be seen by drawing an analogy with the Keynesian Multiplier. The total Human Resource capacity building will be much larger than what is purported by equation (7) and equation (8). This is because each factor outlined in equation (7) and equation (8) may hire other individuals for fulfilling their responsibilities effectively. Hence, to understand the aggregate effect on the economy the total Human resource capacity building is given by

$$\Delta HRCB = 1/1 - b_H \Delta \beta \tag{9}$$

where, β represents the entire set of twenty factors mentioned in equation (7) and equation (8) ; b_H is representing marginal propensity to hire.

2.1.4 *Employment Market Equilibrium Model*

The pre and post Human Resource Capacity Building (HRCB) investment model can be extended to *k* factors using the Employment Market Equilibrium Model, which is represented as

$$\Phi = \alpha + P_{1,1}^{+/-} \beta_1 ..... + P_{i,k}^{+/-} \beta_k + \epsilon_i \tag{10}$$

Subject to $\sum_{k=1}^{N} Pi,k +/- = 1$

$$0 \leq P_{i,k}^{+/-} \leq 1 \qquad i = 1,2, ..., N$$

where, Φ is the equilibrium level of employment, β represents the factors mentioned in equation (7) and equation (8) and ϵ_i is the random or unexplained employment augmentation with $E(\epsilon_i) = 0$.

The Figure 1 below explains the total human resource augmentation for a new venture. An informal Venture Capital (VC) includes a wealthy individual or a business angel, corporate VC may use the services of a larger number of individuals forming part of the corporate structure and in case of an institutional VC a larger set of individuals forming part of the pension funds or insurance companies or other financial institution may employ a much larger set of individuals for searching and financing profitable ventures.

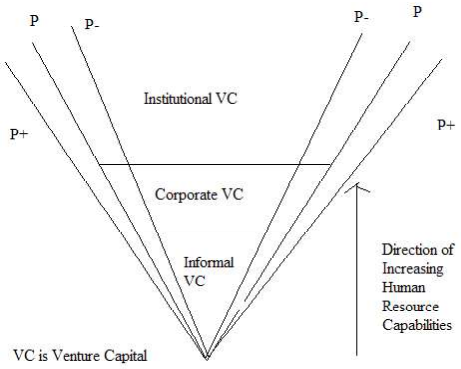
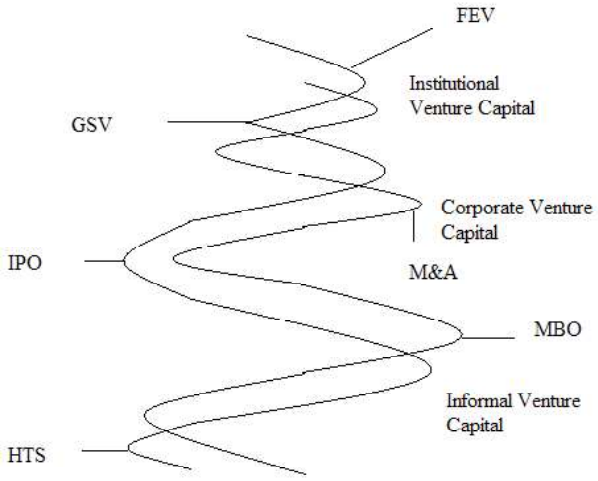


Figure 1
Micro-Economic Perspective of
Human Resource Augmentation at firm level

The Figure 2 below depicts the evolution of Human Resource capacity building in a venture financed firms that has taken the shape of a spiral. Informal Venture Capital (VC) being the oldest has the largest number of individuals hired. The number of firms going for informal VC is the highest. Also, the processing activity in an informal VC is least cumbersome and time consuming. Informal VC further added to development of specially hired individuals who are constantly looking for opportunities of Hostile takeover. The conflict between the entrepreneur and the venture capitalist lead to management buyout (MBO). For undertaking MBO especially skilled managers were hired by the entrepreneur. With a need for a more formalised structure of venture capitalism, corporate venture capitalism developed. This form of venture capitalism augmented hiring of staff which could assist in undertaking Initial Public Offer (IPO) and Mergers and Acquisitions (M&A). With lesser number of firms financed by Corporate VC the human resource base for corporate VC is smaller than that of Informal VC. With government taking note of the contribution of venture capital funded firms helped developing Institutional VC firms. This further promoted the growth of a new profession of financial engineers who would develop new financial instruments, processes and help in solving problems in finance by either restructuring or undertaking risk management. The spread of the spiral shows the total contribution to Human resource capacity building.



Notes :

	HTS	Hostile Takeovers Staff
	MBO	Management Buyout
	P	Purchase of stake by Public by Initial Public Offer (IPO)
	M&A	Mergers and Acquisitions
	GSV	Government Supported ventures
	FEV	financially engineered ventures

Figure 2
Macro-Economic Perspective of the
Human Resource Augmentation Spiral at international level

2.1.5 *Assumptions of the VC-HRCB Model*

The model is an abstraction of the real world for employment capacity building and is based on some assumptions. The assumptions have been included to make the model more tractable from mathematical point of view. The HRCB Model assumptions are as follows

Assumption 1: Firm will try to maximise marginal productivity of all employed factors.

Assumption 2: Venture Capitalists and individuals employed in new ventures are rational.

Assumption 3: Entrepreneur / Innovator are necessary for all new ventures.

Assumption 4: Employment markets are competitive i.e. employment market is in equilibrium.

Assumption 5: The model is applicable for one period time horizon. The results will be affected by a different assumption as regards time period.

Assumption 6: There exists an employment exchange market for hiring of skilled individuals i.e. there is no constraints as regards the availability of employees with a particular skill set.

Assumption 7: Firms hire and retrench employees during the lifetime of the firm.

Assumption 8: The supply of entrepreneurs is limited in the economy.

The Assumption 5 can be relaxed by adopting a dynamic modeling approach.

2.1.6 *Limitations of the VC-HRCB Model*

The following limitations have been observed in the Model

i. Testing the model for short periods may not give suitable results.
ii. The model assumes static relationship which may be dynamic.
iii. The model believes that the employment capacity building is a simple structural form because it is mathematically tractable.
iv. The model does not the find the covariance among mentioned factors i.e. how does one factor affect employment augmentation in other factor.
v. Enormous data requirement limits the use of the model (as each regression for finding priority coefficient will require 21 inputs).
vi. Unidentified factors contributing to HRCB may still remain.

2.1.7 *Life Cycle Hypothesis for a Venture Capital provider and Innovator/ Entrepreneur*

Life Cycle Hypothesis states that a venture capital provider will invest in a venture and continue to stay with it till it is successful and then exit for profits. An entrepreneur in a VC funded enterprise continues to either stays with the successful venture or undertakes an exit for profits. After exiting the successful venture the entrepreneur either becomes an Angel Investor promoting innovation based ventures or starts a new innovative venture along with venture finance providers. (see Figure 3)

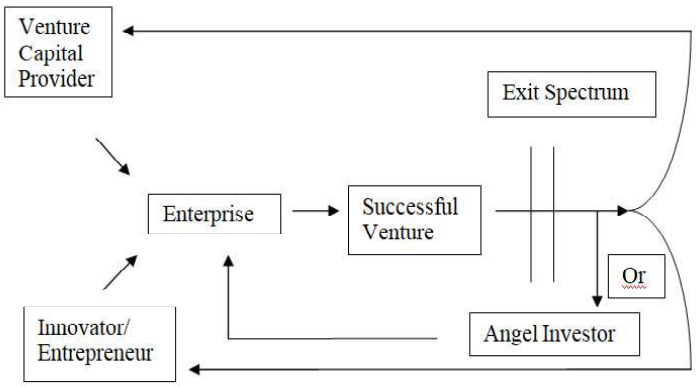


Figure 3
Life Cycle Hypothesis for a
Venture Capitalists, Innovator and Entrepreneur

The hypothesis has been observed for a number of successful entrepreneurs including Jamsetji TATA (India), Ramnath Goenka (India), Anant Koppar (India), Gurbaksh Chahal (US), Sabeer Bhatia (US) and Sunil Bharti Mittal (India). They entered new ventures with support from business angels and later exited for profits. Their super ambitious genes prompted them to start new venture again and later exit for enormous profits. Such entrepreneurs either continue to remain in the cycle or exit it by becoming angel investors themselves. For example, in 1869 Jamsetji TATA converted a bankrupt oil mill in Chinchpokli into a profit earning cotton mill called Alexandra mill. He exited the business after two years to fulfil his dreams in the areas of iron and steel, education and power. Ramnath Goenka in 1919 ventured into trading of yarn and jute and later exited to establish Indian Express in 1936. In 1960 Ranjit Singh and Gurbux Singh who were employees in a Japanese pharmaceutical company ventured into forming Ranbaxy by borrowing a large amount of money from Bhai Mohan Singh. In fact, the name Ranbaxy is formed by merging the names of the two entrepreneurs. This Pharmaceutical business was later acquired by the financier Bhai Mohan Singh when both Ranjit and Gurbux could not pay their dues. Recently, the present CEO Malvinder Mohan Singh exited this profitable venture by selling the promoter's stake of 34.82% to Japanese pharmaceutical company Daiichi Sankyo (www.livemint.com).Anant Koppar (1997) established Kshema Technologies as a software service industry for Industrial automation, healthcare, life sciences and mobile telephony. It was acquired by Mphaisis in a stock-cum-cash deal. Sunil Bharti Mittal started to make crankshafts for local bicycle with money borrowed from his father. Mr. Mittal later exited to create successful ventures like manufacture of push button telephones and now Airtel. Bharti group has also ventured with Rothschild family for fruit and vegetable processing and exports. Gurbaksh Chahal (US) made his way from rags to riches as he earned US$ 3,00,000 a month from Internet advertising company he founded at his home. He exited in his first venture (Click Agent) in 2000 by selling it for US$ 40 million. His second venture, Blue Lithium was bought by Yahoo for US$ 300 million. Now the young entrepreneur is planning a new venture of developing a reality TV show in India. Sabeer Bhatia (US) venture provided free email service and tried to earn revenue by advertising on website. Later, Draper Fisher Ventures (DFV) invested US$ 3,00,000 in this project in 1996. DFV later exited by selling it to Microsoft for US$ 400 million. Mr. Bhatia is also regarded as an angel investor for NeoAccel.

2.2 *Theory of Employment, Wealth and Efficient Labour Market through National Labour Exchange (Agarwal, Agarwal, Agarwal and Agarwal, 2017)*[16]

Governments all over the world and international agencies like United Nations, IMF, World Bank, ADB, and ILO, OECD, AfricanDB etc. are seriously concerned about generating employment and reducing the prevailing unemployment and poverty. For most governments as well as international agencies, generating employment is one of the most pressing and serious issues. It is also observed that there is a mismatch between the demand and

supply of appropriate labour due to asymmetric information, i.e. jobs available but not in the knowledge of Labour and suitable labour available but not in the knowledge of employers.

Keeping in view this and other dimensions Indian Institute of Finance (IIF) Delhi NCR Greater Noida has instituted a study to develop a "Theory of Employment, wealth and Efficient Labour Market through National Labour Exchange". The study suggests setting up of a National Labour Exchange to achieve full employment, generating wealth and efficient labour market. The study completed at IIF some time ago by four senior economists Prof. J.D. Agarwal; Prof. Manju Agarwal ; Prof. Aman Agarwal and Prof. Yamini Agarwal has already been accepted for publication in a leading journal and invited to be presented at various international forums as Guest of Honour Plenary Keynote Address in Japan, Malaysia, Tunisia, India and various other countries. Some reference regarding the findings of the study were also been made at IMF/World Bank spring meeting held in April 2017 at Washington DC. USA by one of the authors, as Wrold Economic Outlook released recently by IMF/World Bank indicated that India needs labour reforms.

The authors of the research have proposed setting up of a National Labour Exchange along the lines of National Stock Exchange, Bombay Stock Exchange and Commodity Exchanges worldwide in order to promote efficiency in the Labor market, full employment and generating wealth and for positive contributions to GDP. The authors also consider that Labor is a valuable resource and a wealth of a nation, having potential to generate more wealth. In the study the authors questioned the concept of wages or price of labor as in classical economics, but supports Ricardo's theory of value and laissez faire through efficient labor market. The authors of the study also questioned Keynesian theory outlining Government Intervention to generate Employment though Monetary Policy changes and Fiscal Policy. According to the study Keynesian Theory is outdated and irrelevant in the today's economic perspective as Keynesian theory is based on his book on The General Theory of Employment, Interest and Money. Keynesian theory on employment was a product of Great Depression of 1931-36, when businesses failed and Labour laid off in abundance. The Keynsian theory does not take into consideration the normal economic and business conditions in the economy. The study also critically evaluates various theories on Labour.

The proposed Model of creating efficient Labor Market through National Labor Exchange, according to the study completed at IIF, will facilitate an automatic way for Full Employment, generating wealth for the Nation, Firm and Labour, Reducing Poverty, easy access to information about the availability of Labour (man hours) and jobs. It would also help save employment costs in a market driven economic system with asymmetric information. National Labour Exchange as proposed, in the study, would also help rating certificates, diplomas, degrees, skill development and

experiences of labour based on scores and would facilitate transparency in the efficient labour markets where man hours and services can be traded like stocks bonds and commodities. It would automatically adjust the return to labour based on value addition and economic and business conditions avoiding the problems of laying off. Efficient Labour Market would facilitate perfect or nearly perfect mobility of labour and full employment and maximizing wealth through National Labour Exchange which would need digitalization of labour records.

Labour is the most important resource that utilizes natural or capital resources in most productive manner to create and generate wealth for nations, companies, organizations and for themselves state the authors of the study. Despite the technological revolution and advancements in the artificial intelligence, labor continues to be supreme and guides the functioning of all economic events and economic systems.

Labor in itself is wealth of a nation. But it is not effectively utilized. Labor suffers from lack of employment opportunities, poverty, poor wage, income variations, immobility and many other problems. In developed economies, wages constitute about 70 % to 80 % of the pre-tax income and post transfer payments with at least one working member in each household. However in developing and emerging economies this share is less than 50% for example it is 40-50% in Argentina, 40% in Peru and 30% in Vietnam. Self Employment is the main source of income in most of the developing and emerging economies for lack of employment opportunities, information, corruption, lack of transparency, and accountability in recruitments and lack of skills and adequate training. Despite the importance of labor in the world economy, labor market is far from perfect for lack of necessary information available.

The proposed model provides a General Theory of Employment, Wealth and Efficient labour market through setting up of a National Labour Exchange. National Labour Exchange can be a vehicle of facilitating information for available jobs i.e. employment opportunities at given return to labour and availability of labour offering the services for a return based on their value addition. The proposed model will fill the existing gap of asymmetrical information.

The proposed National Labour Exchange as suggested in the study, according to authors, would induce competition, both among employers and labour to maximize the productivity, maximizing wealth, GDP and social welfare. Labour, instead of being idle or underemployed would prefer to pick up a job with lower return. It would provide transparency and accountability of the employer, employable and employed and would avoid exploitation of labour. Efficiency in labour market would help foreign investors, to know about the skill, experiences, qualifications and desired return of labour in a country. This is in turn will remove any fears regarding the availability of labour in a given industry.

The payment to labour should be based on return to labour on the basis of value addition, rather than as wages as is being currently done. Payment of wages is exploitative on one or the other ground. Labour is resource (wealth) as much as land or capital and deserves return to labour. In the study it is stated that the wages paid to labour should be replaced by "Return to Labour" based on value addition. Return to Labour would be automatically directly linked to productivity. It would give dignity and enhance or reduce return.

According to the authors of the study, setting up of National Labour Exchange,would create one national market for labor exchange, uniting the country and its countrymen to one common working platform removing the discrimination of regional imbalances, labor immobility and information asymmetries that create distortions in the demand or supply of labor. It would encourage labour at all levels to acquire certificates, degrees, skill and focus on maximizing productivity so as to quality for a composite score to be high to get better return on jobs and choice of firms.

The proposed Model of creating Efficient Labour Market through National Labour Exchange will facilitate an automatic way for Full Employment, generating wealth for the nation, firms and Labour, easy access to information about the availability of Labour (man hours) and jobs. It would also help save employment costs in a Market Driven Economic System with Asymmetric Information. National Labour Exchange as proposed would also help Rating Certificates, Diplomas, Degrees, skill development and experiences based on Scores and would facilitate transparency in the Efficient Labour Markets. It would automatically adjust the return to labour based on value addition and economic and business conditions avoiding the problems of laying off. Efficient Labour Market would facilitate perfect or nearly perfect mobility of labour through National Labour Exchange.

III. Sustainable Environment and Economic Development Model

Changing Climate is raising alarms towards the usage of Energy and attainment of Sustainable Development globally. It is difficult to comprehend as to the certainty of how technological possibility will play out in the future to provide a balance for the need for survival vis-à-vis embracing the environmental concerns. Given the attention attained by the need for energy and the impact of climate change due to pollution, one can say with assurance that developments in energy markets will remain central in determining the longer-run health of national economy and societies. The experience of the later half of the last century affirms that market forces play a key role in conserving scarce energy resources and directing those resources to their most highly valued use. The productive capacity of the future can no longer be based on market forces alone. They would have to consider the cost to the society and the future, which would enforce the creation of Green Energy and their productive use for sustainable development. Hence energy and climate change issues present policymakers and citizens with difficult decisions and tradeoffs to be made outside the market process.

Effects of a changing climate are widely observable with the temperatures and sea levels on a steep rise with melting of ice and snow covers (Fralkenmark, 2007). The consequences could be catastrophic for the natural world and society. A large number of scientific studies indicate that due to the release of green house gases (such as carbon dioxide and methane) and wars, the impact on atmosphere by human activity post 1920 has been the primary cause of the drastic climatic change. One cannot do away with the effect of war situations and bombings done in the last 2 decades contributing to temperature variations, seismic disc movements and ozone depletion. Increase in Air-traffic and Airplanes travel at very high altitudes has also impacted on global warming. IATA predicts another 500 million passengers will take to the skies by 2010, with jet aircraft emitting 23 kg of CO2 per 100 passenger per km, raising the risk to nature and mankind. Not only is the CO2 emission a problem but also the Nitrogen dioxide from airline engines leads to formation of ozone leading to creation of cirrus clouds enhancing green-house effect contributing to global warming. In Europe it-self it is estimated that emissions from air travel increased by 73% between 1990 and 2003 (Philip, 2007). We need to secure a profound change in the way we generate and use energy, and in other activities that release these gases.

The unprecedented combination of climate change and associated disturbances like flooding, droughts, wildfires, insects and other drivers like land use change, pollution and over-exploitation of resources would lead to shift in agriculture productivity and economic growth globally. Even though agriculture is one of the smallest percentage contributors to the GDP pie, it holds the prime place in the Growth chart of nations. Moving to Green Technology for energy needs globally at the earliest possible is the only given solution to this complex problem. It is also important to note that Green Technology (based on renewable sources) is not only cheaper but also more labour intensive (both skilled and un-skilled) in the long run than the non-renewable sources of energies in use. We believe that this would enhance the employment and reduce the tense atmosphere due to Un-Employment and Aging Population as well (especially in the Developed regions of the World). The Nobel Peace Prize 2007 to IPCC; the Al Gore's initiatives; The Global Forum 2007; The OECD Forum 2008 and the SIWI's Water Awards every year for last three years and the Nobel Prize in Economics in 2018 have sent very powerful messages to the global community on the climate change and appropriate water management for developing an appropriate balance between a healthy ecosystem and sustainable growth.

3.1 *Finland and Nordic Initiative*

Finland, Sweden, and other parts of the Nordic Region are endowed with large terrains of Green belts (with forests land coverage being over 85% in Finland, over 70% in Norway and over 50% in Sweden). The environment friendly parliamentary view and stagnant population in the region have enabled maintain the rich Green heritage. It is commendable to see the Nordic commitment towards environment, which is clearly visible

from the decision to do away with the fossil fuels from the energy mix by 2020 through introduction of referendum since 1980 beginning with Sweden to move away from Nuclear Energy. This is despite the fact that Nordic's electricity consumption has been rising and it has one of the world's highest individual levels of energy consumption of about 18,000 kWh/head. Today, just under 50% of domestic energy production in Nordic region is based on nuclear, about 40% on hydro and 8% via fossil fuels. The Nordic Region introduced nuclear energy into it's energy mix in 1965 to substitute fossil fuels. The moves towards Green Energy in the 1970s and towards Green Renewable Energy now by the Nordic countries are both because of ecological and economics reasons (i.e. due to Oil shocks of the 1970s and those posed 2004 onwards).

3.2 *India Initiative*

India is in need for huge energy requirements for sustaining the growth induced with increased trade, commerce and international presence in the country. Currently India's energy mix is a combination of hydro-power, bio-energy (wind, bio-gas, bio-diesel and others), solar, coal and nuclear energy. As far as economics of operations for energy creation and distribution are concerned, India have proved that it competes equally with the best, be it in the production of nuclear power , heavy water, bio-energy or nuclear fuel.

It is also interesting to note that 31% of India's primary energy comes from bio-energy that include agricultural and forest waste, wood chips, animal waste and bio-fuels. In India, Bio energy (non-commercial) is second only to coal, which accounts for just over a third of India's primary energy mix. Estimates show that about 70% of India's domestic energy need is met by bio energy. It is expected that 25 years from today taking the bio-fuels and renewable sources of energy, the share of non-conventional energy in our energy mix is expected to be 12-15% in the very least. Bio-energy's potential over the next 25 years, is about 2.5 times the combined potential of hydro, wind and nuclear. It is estimated that 60 million hectares for energy plantations, commercially grown bio-energy could yield 29-35% of India's primary energy requirements even 25 years from now. Inclusive of non-commercial bio energy, the share could be 39-45% (Sethi, 2007).

Apart from Bio-energy, India also enjoys being a Solar rich receipt. Scientific calculations show that about 7-8 million hectares under solar cells could give India energy independence even 25 years from now. From a forest conservations perspective, 2.25 million hectares under solar cells with 15% conversion efficiency could yield the same energy as 60 million hectares of wood plantations would yield.

To enable make the reach of Solar and Bio-Energy to the larges, the governments would have to promote and develop schemes to involve industries and government projects. One of the clear ways is to grant the request of the Industry for approving the R&D outlays as deduction from taxes due and that this fiscal incentive be made tradable. Also all the bio-

fuels or bio-chemicals should be subjected to a very low tax or be exempt from taxes that are imposed on fossil fuels or fossil based chemicals to involve the SMEs and large industries to move towards Clean Renewable Energy sources. A large number of initiatives by the Environmental Polution Council of India between 2016-18 have been undertaken under the leadership of Mr. Bhure Lal have also been initiated to bring a check on the degredation of environment and induction of cheantech frameworks for the future of mankind.

3.3 *World Energy Green Fund*

The concerns and debates in the last five years on Energy and Climate change need to be addressed. It is vital that international agencies like the UN, IEA and World Bank take steps to give directions to nations and international society for developing means for appropriate actions to curb environment pollution providing for sustainable sources for development and growth globally.

Based on the concept of the UNs World Solidarity Fund, so created in December 2002 on the suggestion of Tunisian President Ben Ali (in December 2000 at UN Forum), we would like to propose the creation of a World Energy Fund to meet the needs and smooth transmission for change over to Clean Energy by industries globally. The Model proposed in 2007 has been adopted by the OECD in their Annual Meeting in 2008 at the OECD Forum

The World Energy Green Fund (Agarwal and Agarwal, 2007; 2017) may function by engaging in

– focus through

i. Purchase of Technology Patents for Clean/Green Energy to enable cheaper industrial usage by the industries globally (especially in developing regions of the World)
ii. Promote Bio-Energy Sources (Bio-Diesel / Bio-Gas) and Solar Energy for Household energy consumption needs.
iii. Governments to move forward than just Kyoto Protocol to sponsor or further projects which are based on Green Energy Sources for their Future Power needs.
iv. Green Fuels to be Tax Free for a period of 5-10 years.
v. develop capital market financing energy products to finance Green Technology.

– finance the Fund through

i. Seeking donations (organization, international agencies & governments)
ii. Introduce Pollution Tax (country/sector basis)
iii. Fee from Use of Patents (purchased)
iv. Environment Tourism (In Sweden over 3 million Sweds have visited Swedish Nuclear Plants (HT-Reuters, 2007))

The global world and economies are faced with challenges to counter climate change, energy and sustainable development. Though it is the responsibility of every citizen of the global world to fight against such

environmental socially-ill, however the duty primarily rests on the shoulders of governance bodies and international agencies to play a pro-active role in clearing the menace and providing directions to industry. With the changing structure of world investment, trade, capital flow and the need for deeper integration, strengthening regulatory framework and signaling system is greater. Globalization has altered the economic frameworks of both developed and developing nations in ways that are difficult to comprehend. Also the emergence of unregulated global markets appears to have moved towards a more stable and growth oriented economic globe. What is needed today is to develop sensitivity sensor systems to promote green technology within the financial framework as an integrated approach to keep markets from busting and causing socio-economic environmental panics. Faced with these uncertainties, it is especially important that policymakers undertake the required policy adjustments for a sustained global expansion. As well, supervisory and regulatory authorities need to continue to strengthen energy financial market infrastructure to underpin the resilience of the ecosystem towards sustained development and clean tomorrow

IV. Restructuring Pension Systems and Societal Setups Model

Financing life has been the issue for ages. One desires and dreams of a comfortable flourishing life for their family and to have a better standard of living. This is normally the underlying for all financial planning of the future. We find that demographic, social, economic and political changes in recent times have stimulated the political and academic debate about how to provide and pay for the care of masses and the older generation in particular. This has been a rising concern for almost all developed nations and the emerging economies with an extreme shift in proportion of older generation within the demographic setup. India fortunately is blessed to be a young nation with over 65% population young and below 45 years of age. Increased public awareness of means-testing for care and consequent asset loss has also increased globally and in India. This has pushed the issue up the economic socio agendas. However, evidence about what people think requires an appropriate balance of responsibility between the individual and the state, for meeting future needs. It has been found that there has been increased use of personal financial resources to secure later part of one's life and in establishing how these vary with personal and socio-economic circumstances in the given nourishing environment. The state needs to see that there is an appropriate mix of personal and state resources in place to enable develop a self-financed market oriented financing product and service.

Time has seen systems emerge from self sustaining traditional cyclic to governmental social security systems and the private pension funds. The global village has addressed the ups and downs in these systems over their evolution in the last century. The self sustaining traditional cyclic system seems to have prevailed over the rest, given the test of time. You may be wondering what I mean when I say the "self sustaining traditional cyclic system". I am again coming back the personal financial resource management mechanism. It is a medium via which the parents invest in

their children to enable them serve as social security for them in old age and further develop a secure future for their children. This is a never lasting cycle, which is a success by far. The western societies, both American and the European, have been trying to explore the mystery of this age old *Bhartiye* culture and civilization (aging over 8000 years). These young societies though economically sound have not been able to evolve a self-sustained economically balanced social security. Hence, they have not only tried to understand but also adopt many of our traditional systems of life, as is evident from their shift of belief, values and the East look policies.

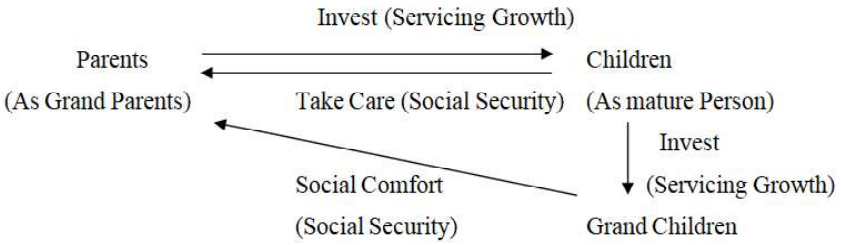


Figure 4
Self Sustaining Traditional Cyclic System

We feel the Social Security for India cannot be aligned with the developed nations and the Western philosophy as we have more than 400 million[13] (35% of India's population) in the un-organized sector. Not only this, but also it is well evident from Federal Reserve documents and research studies that the total burden of the formal social security system and the payments their off are posing tremendous problems for a rich nation like US. This problem is not their with the US only, UK, Japan, Germany, France and many other developed nations are facing the same tune due to mis-management of social security funds and non-servicing population (young). In our understanding from literature in Europe similar systems did exist till as recently as the last 1960s, but had dissolved given the capitalistic market driven systems taking hold in the society.

A well articulated book by Noriyuki Takayama on "Taste of Pie: Searching for Better Pension Provisions in Developed Countries" has tried to also explore, explain, evaluate and suggest on the prevalent social security systems and their role in financing old age towards comfortable living. The need to earn more with a belief of larger sum assuring late periods of one's life has emerged out of the materialistic lifestyle of the west. Within Asia these systems have turned to be investment avenues for financing of future family needs than to provide for social security. As within an Asian's mind the true social security is with their future generation (grandchildren and children) secured, rightly so.

Given this one must not push aside the need for financial funds to secure a healthier late life. The complexities of stress, economic competition, efficiency and Darwin's concept of survival of the fittest have generated the

need to think in a more economic than social way for a better life ahead. The thorny question of retirement which lies before us is as to how are we going to finance it. Before we move on to this, we would like all of us to think, as to what have we done to ensure a secure future. Some of the responses which come to our minds are that we have initiated savings; have made investments in bonds, securities (in treasury bills/government bonds) and real estate; setting up of a business (i.e. by entrepreneur). These are certainly some of the well known means of financing finances for the future, but not the means to secure or finance life. What we most need to do is to provide for a secure flourishing and growth oriented future for the family. We must not forget that "A rising sun is always looked upon".

What is important at this stage is that the Senior Citizen of any country deserves to live with dignity, which they have rightly earned over their life span. The Governments need to see that the "Senior Citizen's Dignity" is not brought to shame with any of its policy prescriptions, which at times tend to get influenced by the market driven economic systems. The cultural and civilization beliefs are important and must be tightly held for a robust socio-economic system. We all need to respect and honour the same, given that the formal social security systems (both public and private) have failed to provide the masses their dues in market driven economic systems.

Amongst the commonly known financing strategies for Retirement these are

- Annuity Products[14]
- Investment in Gold / Silver
- Real Estate
- Deposits (Bank FDs, Equity, Pension, RBI Bonds, Mutual Funds)
- Social Security / Pension Fund Account
- Debt Financing (financing current needs via Debt and hedging it against future incomes)
- Creating future value (by setting up smaller business options)
- Government Bonds (tax-free and taxable)
- Fixed Deposits in the Banks and Financial Institutions
- Post Office Schemes (Monthly Income Schemes & Term Deposits)
- LIC Schemes
- GOI Special Senior Citizen Pension Schemes
- Mutual Fund Schemes

Governments may want to consider implementing a few other options from those mentioned below for the benefit of the masses at large. They may want to explore the possibility to directly or with private participation setup

- Re-Employment Pension Fund
- Social Security Account as Monthly Deposit Scheme
- Stable Policy of Pension Fund Rates : Whenever the rates on Pension scheme need to be changed, they need to be done on deposits from the current year onwards and not from retrospective effect, as the

expectations, confidence in the system and planning of the masses gets hay way. One must understand that confidence once shaken is difficult to build up, which results in economic sluggishness and failure for future products/schemes.

— Post Office Retirement Scheme

V. Financing of Growth through Self-Assessment Governance Growth Model

A great attention has been paid to global economic issues in the last decade. This has been a natural byproduct of the increasing inter-dependencies of all national economies and the growth in entrepreneurship and competitive environment. This has accentuated in recent years due to the emergence of several developing countries as global economic forces, the reorganization of production process, change in nature and location of development and finance. One can clearly observe this with the economic growth and self sufficiency attained by India, China and quick re-emergence from crisis of the ASEAN countries.

The last two decade has observed varied economic performance worldwide. Looking at Asia, we find that growth rates in the India and China have held up well since the mid 1990s, a number of East and Southeast Asia economies were hit hard by the financial crisis, with severe GDP contractions in 1997-98. Though, growth in 2000s have been volatile in comparison with the pre-crisis period followed by weakening in 2001 and strengthening in 2002 in Asia. The recovery as said before has been by a resurgence of exports, extensive Inflows from rest of the world into Asia, emergence of services sector, exchange rate adjustments, increase in government expenditures.

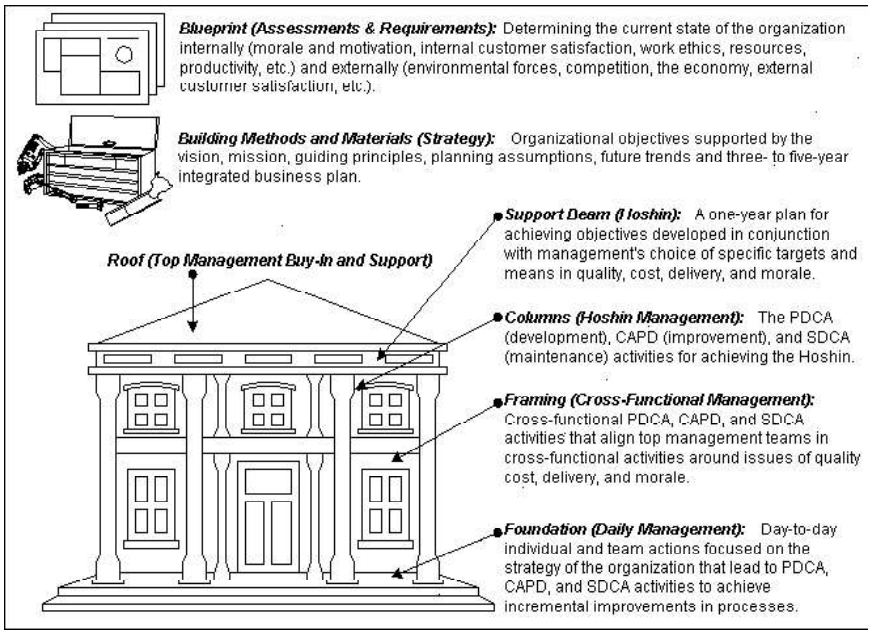
Education, good governance and quality consciousness facilitate growth and development of corporations and society. Proper education and not just literacy need to be provided to internal and external stakeholders of an organization for achieving the desired governance and total quality growth factors, which in turn lead to organizational goal fulfillment. Knowledge either imported or home spun has signaled new challenges and improved the quality of life. A serious emphasis has been put forward since the new economic order setup in 1991 to redefine goals, objectives and have an application oriented institutional setup to bring about economic growth, development and nourishment. A huge amount of private equity and initiative has taken place over the last decade to bring about sustained economic development in the absence of appropriate institutional setup in areas, which were opened up in the last decade. This has led effectively to produce competent human capital for national development, which is like life without oxygen.

Quality in today's globalized *Gurukul* is termed as adhering the international norms and practices. It is viewed as the responsibility of the government, professional bodies, accrediting agencies, associations & chambers, industry and the society at large. Focus of Total Quality has been

tuned towards maintenance of the highest standards for thoroughness, innovation, and attention to detail so as to evolve reputation for reliability and prompt and friendly customer service. Total Quality Management now being the structured system for satisfying internal and external customers and suppliers by integrating the business environment, continuous improvement, and breakthroughs with development, improvement, and maintenance cycles while changing organizational culture. It is like building a house with perfection. When all elements in TQM are well placed, it would generate a well-built house with a strong, solid, cohesive foundation. (see Figure 5)

One of the multi-layered approaches to bring in quality assurance has been by adopting phased plan. The four stage phased plan is

1. SWOT Analysis of institutions[15]
2. Self-Study, Assessment and Accreditation of institutions[16]
3. Remedial measures in the case of week and less privileged institutions[17]
4. Implementation of quality sustenance activities in accredited institutions[18]



Source: Hoshin Kanri, Integrated Quality Dynamics, Inc.

Figure 5
Total Quality Management

The new global standards of governance are emerging. Customers are demanding better performance on the part of the corporate's and their governments. They are increasingly aware of the costs of poor management and corruption. These developments have led to new interest in measuring the performance of corporations, institutions, and governments. This may

be done by international agencies, credit rating organizations or self-assessing models, which use indicators of governance, institutional quality and corporate governance ratings. The model given in the paper highlights and brings forth some of the relevant factors which touch upon some of these sensitive issues, which many times companies are not willing to disclose or open up. However, it is difficult to hide ones face from the mirror. Hence a self-evaluating and assessing mechanism/model is the need of the hour, which is propose in the paper. I have also highlighted upon the position of Education Sector along with cases study of an institution, which has emerged as a leader using the model.

5.1 *Self-Assessment Economic Governance & Total Quality Growth Model*

5.1.1 *Modeling for Corporation*

The model for economic governance and total quality self-assess and induces growth within an organization setup. It enables one to ascertain the week points, streamline resource allocation and develop the organization in totality. This model is a self-assessing model, which enables the management of the company to judge its position based on their own perceptions and positioning in a dynamic ever-changing environment. It can be applied to all different kind of organizations and need not be restricted to any certain category. In the model, I have identified Eight (8) factors to self evaluate and govern. Seven out of these eight are based on surveys and research. The seven basic components, which an organization needs to focus for economic growth, governance and total quality factor are – Vision, Leadership, Finance, Human Resource, Work Environment (Technical Resources, Equipment & Infrastructure), Research & Innovation and Market Acceptability. I have left One (1) of the options as open for the management to chose and determine based on the need and focus of operation. All organizations irrespective of nature of work and structure are influenced by environment where they need to demonstrate flexibility, dynamism and empathy, while remaining true to the core value's.

Vision

It is very vital to give necessary direction to any organization and its stakeholders. It enables bringing in clarity and focus to the organizational functioning in today's challenging and uncertain environment. Be it at the Nation's or an Organizational level, its importance is well recognized and the vision is formulated mostly at their inception stages.

The vision should have components like - what the organization wants to be, not what it is?; what are the future products or services concepts, not specific products and services?; what is the future market area, such as global/international?; Is the statement should be in line of stakeholders expectations?

The mission should have components like - how to achieve the vision within a certain time frame?; what and how the activities have to be initiated to achieve the corporate vision?;

Both the vision and mission statements must fulfill these components - Is the statement should be in line of stakeholders expectations?; Is the statement should be a simple statement?; Is the statement understandable from top management to line workers, including the public, customers, and suppliers (stakeholders).

Leadership

The correct direction can only be fulfilled, if the right people to direct it are there. Leaders bring the vision into reality with their dedication and commitment. They may be chairman, directors or heads of departments; they all play a leadership role to bring in solidarity and fulfillment of organizational goals. Leadership needs to be dynamically changing but consistent. It ought to meet the needs and objective of an organizational goal providing it with necessary factors of growth and development. "Positive or Negative" leaders credibility, thinking and attitude has a direct correlation with institutional positioning in the society.

Finance

It is one of the most vital components to meet operational and growth needs of any organization. In India, most organization follow conservative style in use of finance and tend not to optimize this scare resource. Finance energises life. It is "THE" factor, which ensures the existence of an organization. Be it "for" profit or "not-for" profit organization, all need it as their life-blood. Right and optimal utilization of this resource has made Reliance, Infosys, Wipro, GE and others and has been the cause of disappearance of Enron, Arthur Anderson, Home trade and others.

Human Resource (Management & Labour/General Staff)

It is important that an organization invests in human capital. The two components - management and labour/general staff form the basic part of these. They over time yield rich returns in terms of brand equity, market acceptability and laying down strong foundations. Continuous Training is a vital component for development and growth of this resource. It keeps one updated with what is happening around the globe in their respective areas. Enrichment of this resource pays in the long run for all organizations. The smooth functioning of any organization is determined by the satisfied and motivated faculty and administrative human resource it posses. In an increasingly diversified competitive inter-dependent institution and corporate world there is a need for educators having leadership in executive roles.

Work Environment (Technical Resource, Equipments & Infrastructure)

To lay strong foundation for the stakeholders of an organization it is essential for the management to provide with a proper healthy work atmosphere. Technical resources and facilities like the latest equipments, computer based networks and requisite physical infrastructure provides the base for productivity. Though, these may not pay an institution in its development immediately, but do act as multiplying factor for growth in long run. Also an institution must adhere to strict norms, standards & evaluation system and upgrade its resources from time to time to bring in good corporate governance. This not only enriches the organization, where the human resource enriched would perform, but also develop an institution in totality.

Research & Innovation

Research has been the stepping-stone for organizations of the next generation. Hundreds of companies have innovated and researched

products; services and models, which facilitate fill in gaps and spring up growth. Innovation and Research act as catalyst to achieve growth and development in an organization. Take any top company today, they have used these in some way or the other.

Market Acceptability (Customers, Shareholders, Industry & Government)

It is one factor, which is given the most relevance by almost all institutions globally. All resources and facilities are for the service of this Most Important Person – MIP (the customer). The customer is the best ambassador of an institution. If the service provided to the customer is in tune with the needs and demands, then the acceptability of the institutions is promising. The Industry and Government play vital role in merging and facilitating customer orientation and growth of the organization. As Dhirubhai Ambani said "*Government is the most important environment of the business*". Shareholders act as a major contributor to understand the market sentiments and acceptability of a company.

Open Option

In the model, I have left one of the options as open. This is to facilitate any factor, which an institution or its functionaries think as a relevant variable to be included in the model. This can take position like International Reach, Legal Environment, Global Competition, Market Competition, Government Restrictions or any other.

To make the model functional, one needs to sketch out straight lines joining the points on various spheres encircling the corporation (see Figure 9). Each sphere shows a higher level of achievement and satisfaction level. Each level has been numbered from 1 to 7, showing the various degrees of achievement and satisfaction. These points link each factor and form a polygon. The uniformity and wideness of the polygon is the desired targeted (see Figure 6, 7 and 8). The larger and the more uniform the polygon, shows that the governance is uniform and growth oriented. This also enables an institution to judge its strengths and weakness, wherever the company is on a lower scale. The analysis can be perception or statistical based, depending on the institutional analysis scale and accuracy, the management would like to bring forth.

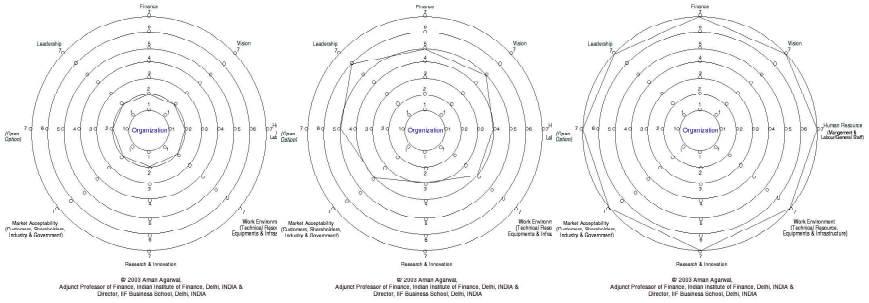
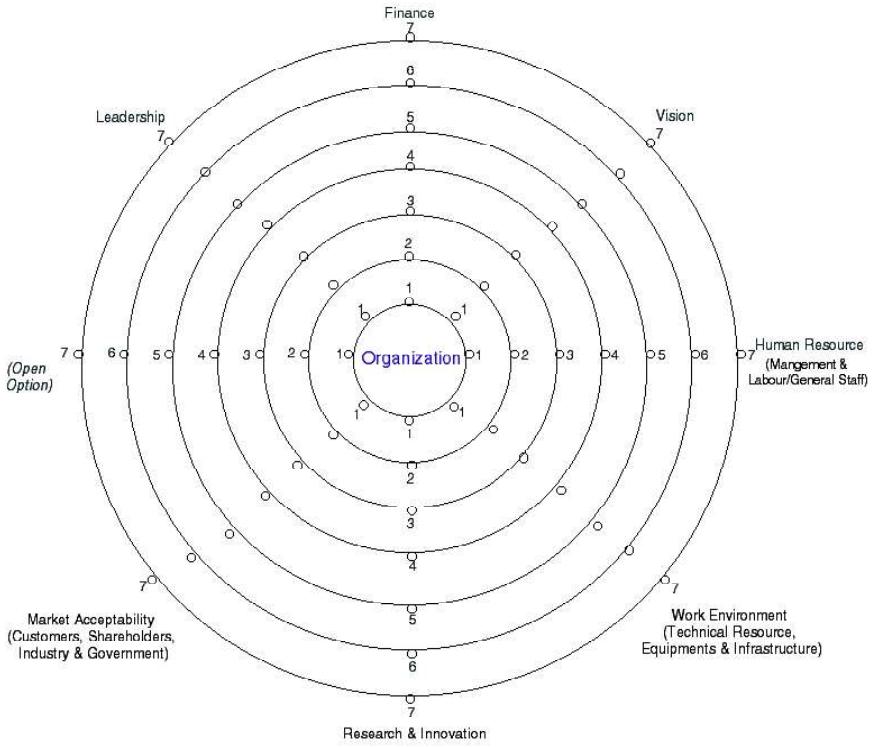


Fig. 6: Minimized Fig. 7: Normal Scenario Fig. 8: Opitmized(Desired)



Minimized Normal Scenario Opitmized (Desired)

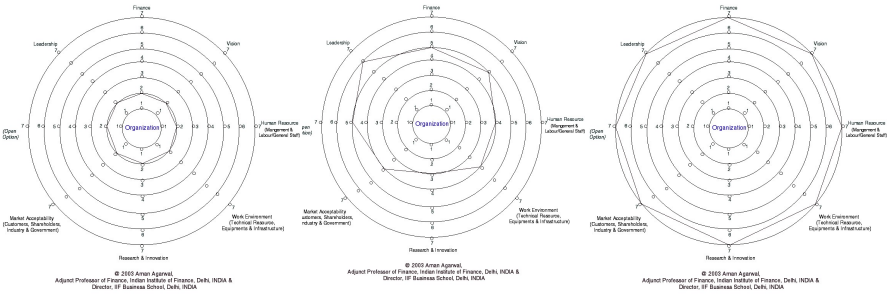


Figure 9
Economic Governance & Total Quality Growth Model for Corporations

5.1.2 *Modeling for Educational Institutions*

This model for economic governance and total quality empowers an educational institution to self-assess and induce growth within its system. This model is a self assessing model, which enables an institution judge its position based on its own perceptions and position in the society. This also takes into account the environmental factors surrounding an institution. If

need be, it can be replicated and used for each functional head in an institution. As in the above case seven out of eight factors/components are pre-determined, which are – Vision, Leadership, Finance, Human Resource, Academic Facilities, Academic Structure and Market Acceptability. One of the options is left open for an educational institution to chose and determine based on their need and focus of operation. The mantra for today's institutional environment is to demonstrate flexibility, dynamism and empathy, while remaining true to the core value's of an institution. (The full model is published in Lahore Journal of Economics, 2005)

Awareness of self in co-existence with others is vital for organizational success in developing maturity in bringing Governance. Institutions need to introduce new business management paradigms. There is also the need to bring in "Unity in diversity" by strengthening our institutions through synergy of the components mentioned in the Governance and Total Quality Model for Growth. One thing, which we ought to do as today's mantra for better tomorrow is to practice what we preach. It is easy to formulate, devise good models and mechanism, but the implementation of them successfully is even more important. The idea floated by Microsoft recently to have an Implementation Committee to see that implementation of the decisions taken is done is a positive step towards the same. However the important thing is the implementation and the formulation of the committee. So to begin with this at self would serve sufficient for bringing in effective governance in the system. The current organizational structure also lacks focus and accountably given the democratic structure organizations in the country. The frauds taking place in Internationally is a substantial evidence of it. With growing population the need and demand for good governance and total quality systems and organizations is humongous. Even in education, with the current or even 3 times the current institutional setup of the nation we would be unable to meet needs of growing India. What we however need are effective and qualitative setup and environment. Though market theorist would agree that the market driven mechanism is an auto adjuster for the same. Unfortunately with the kind of demand in nations like India, the cost of market selection for the fittest is very high and counter-productive at times.

VI. Goal Programing Model for Capital Structure Decision

Mathematical programming techniques such Linear programming, Integer programming and Goal programming to give a model framework that satisfies multiple objectives simultaneously. Goal Programming model (GP) was first of all developed by Charnes and Cooper (1961) as an extension and modification of linear programming model since the concept of goal programming problems. Later, Ijiri (1965) studied the detailed techniques of goal programming as developed by Charnes and Cooper. Ijiri reinforced and refined the concept of goal programming and developed it as a distinct mathematical programming technique. His study was primarily concerned with the development of the technique and its possible applications to accounting and management control. In addition, goal programming has

also been applied by Charnes and Cooper (1968) and Lee (1973) to advertising media planning, man power planning and production etc. They further suggested that goal programming may be applied to an almost unlimited number of managerial and administrative decision areas such as allocation problem, planning and scheduling problems and policy analysis etc. Hawking and Adams (1974) applied goal programming model to capital budgeting decision problem taking up Lorie and Savage case and made a comparative analysis of optimal solutions as given by Weingartner's linear programming solution. However, Hawkins and Adams have not taken into account the assignment of priorities to different objectives which a firm postulates to achieve in order of their importance. While a goal programming model as developed and applied by Sang M. Lee, Ijiri and others, requires consistent ordering of priorities between the numbers of multiple sets, it can be applied using its linear approximations.

Agarwal (1978) developed goal programming and a stochastic goal programming model to the capital budgeting decisions under risk and uncertainty. In the problem identified by him, projects were selected based on optimization solution derived after considering the multiple considerations as constraints. Agarwal (1978, 1987) extended the goal programming model to working capital management which operated on the premise that no specific theory undertakes the inter relationship between various current assets and liabilities and in the past all studies have referred to the management of current assets as an isolated problem. In addition, Romero (1991) has presented a comprehensive overview of the technique, though not in finance but for engineering problems.

Agarwal, Yadav and Iyer (2010) develop the Goal Programming technique capable of handling decision problems under risk and uncertainty that deal with (a) Single goals only; (b) Single goals with multiple sub-goals; (c) Multiple goals and (d) Multiple goals with multiple sub goals. In presence of incompatible multiple goals, the decision maker is to identify the importance of the individual goals. When all constraints and goals are completely identified in the model, the decision maker analyzes each goal in terms of deviations from the goal that are acceptable and state whether over or under achievement of goal is acceptable or not. Over achievement is undesirable, positive deviation from the goal is eliminated from the objective function. If under achievement is undesirable, negative deviation from the goal eliminated from the objective function. If the exact achievement of the goal is desired, both negative and positive deviations must be represented in the objective function.

In order to give importance to the goals, negative and or positive deviations about the goal must be ranked according to the "pre emptive" priority factors. The model considers high order goal prior to the low order goals. If there are goals in k ranks, the p "pre emptive" priority factor p_j (j = 1,2, ... k) should be assigned to the negative and or positive deviational variables. The preemptive priority structure would have a relationship such

as $p_j > > p_{j+1}$, which implies that the multiplication of n, however large, it may be, cannot make p_{j+1} greater than or equal to p_j. Weighting can also be used in the deviational variables at the same priority level. The criterion to be used in determining the differential weights of deviational variables is the minimization of the opportunity cost or regret. Hence, coefficient of regret is always positive and should be assigned to individual deviational variable with the identical p_j factor.

The objective functions of the goal programming problem consist of deviational variables with pre emptive priority factors. p_j's for ordinal ranking and d's for weighting at the same priority level. Let c be 2m component row vector whose elements are products p_j and d such that:

$$c = (\delta_1 p_{j1}, \delta_2 p_{j2}, \ldots . \delta_{2m} p_{j2m}) \quad (11)$$

where, $_{pji}$ (i = 1, 2, ... 2m; j = 1, 2, ... k) are pre emptive priority factors and highest pre emptive factor being p_1 and δ_is (i=1,2,. ..... 2m) are real numbers. Let d to be 2m component column vector whose elements are d^-'s and d^+'s such that

$$d = [d^-_1, d^-_2, \ldots\ldots\ldots d^-_m; d^+_1, d^+_2, \ldots\ldots\ldots d^+_m] \quad (12)$$

Then a goal programming problem is

$$\textit{Minimize} \quad cd \quad (13)$$

$$\textit{Subject to} \quad ax + Rd = b$$
$$x, d \geq 0$$

where, A and R are m x m and m x 2m matrices respectively.

The model framework can be used to obtain satisfying solutions to the multiple goals and constraints faced in the goal programming model. In capital structure problems quantitative relationships do not exist, which need to be developed using multiple regression analysis.

The 19 industries with respect to the two leverage variables, LTD and TDE, respectively are studied for their relationship with other variables through correlation and stepwise regression that develop the constraints which the industry posses on the capital structure decision making process of a firm. The study has not evaluated the effect of macroeconomic parameters like capital markets, economic growth rates, financial intermediation and others as these factors in India were found to have insignificant effect on the leverages. Inter industry differences were found to be significant so the use of industry ratios and industry leverage positions is used to develop the relationship between the variables. The relationship between TDE and other 66 variables for 19 industries is represented in Appendix F that would act as external constraints for firms' in respective industries when using the goal programming model for the Indian Industry. The relationship between LTD and other 66 variables that are accounting proxies for multiple

objectives of 19 industries is represented in Appendix G that would act as external constraints for respective industries when using the goal programming model for the Indian Industry. Management discussions are carried out to determine firm specific goals and constraint as specified in the case study. The identified model is applied to firms to test for their validity. The model can be defined in the following manner for all firms aiming at *satisficing* solution for their capital structure decisions. The study illustrates a real life example of an Indian Firm(α_1) name changed .

6.1 *Case 1:* α_1 *Co. (Alpha One Company) in Agriculture Industry*

The firm is into agriculture products business and has maintained its equity at ₹ 11.9 crores[19] for the past 10 years. It is particular on not issuing any equity for growth. In the year 2007, the LTD of the company was 0.03 and TDE of the α_1 company is 0.15. Internal funds have been the prime source of increasing the capital employed. The α_1 company has observed the return on equity of 23.73% in past one year which has been the highest for the past 10 years. The a_1 company wishes to retain its ROE and wants to see an increase in this position for future. The α_1 company from its marketing actions intends to seek the rate of growth of net sales by 8.5%. The company is attempting to look for new markets so that it can increase its sale to generate more profits. The α_1 Co. intends to see that rate of growth of capital employed remains at 23.25 % after adjusting for the profits as it does not intend to raise any debt but would like to reduce it, if possible. The α_1 Co. believes in employing less debt and wishes to follow a more conservative approach.

The α_1 Co. is not adverse to the use of more capital, but wishes to generate the same through internal funds. The α_1 Co. has profit before interest, depreciation and tax margin of 12.26 which it feels would not improve in the future as the raw material costs are rising in India. Presently, α_1 Co. employs a net working capital of ₹ 147.31 crores, it has a debtor's velocity of 48 days, pay out maintained by the α_1 Co. is 16.79%, cash flow from investing activities is ₹ 42.88 crores. The capital expenses in foreign exchange are zero. It does not intend to observe changes in these values for next few years. The α_1 Co. presently enjoys a market capitalization of ₹ 401.87crores which is the highest market capitalization observed by the α_1 Co. for the past 10 years and wishes to only raise it and not lose its valuation. The α_1 Co. also believes that higher leverage results in low market capitalizations. The α_1 Co. has not attached any priority to the three goals. The firm's goals have been identified by the study in the following manner

Goal A1: To retain and increase Rate of return on equity (ROE) at 23.73%

can be stated as ROE $\geq$ 23.73

Goal A2: To observe a rate of growth of net sales (ROGNS) at 8.5, this is

presently 7.9% is stated as ROGNS $\geq$ 8.5

Goal A3: To observe a rate of growth of capital employed at 23.25% is stated as ROGCE = 23.25

The deviations from the goals can be positive (d^+) or negative (d^-). The positive deviation (d^+) in first two goals is desirable however the negative deviations (d^-) from the goals are not desirable. The negative deviations violate the goal requirement and hence should be minimized for the first two goals. In the third goal both positive (d^+) and negative deviation (d^-) are not desirable so both positive and negative deviations have to be minimized, for the exact attainment of the goal.

In each goal when the deviational variables are introduced the inequalities converted into equalities by introducing on LHS, d_i(s) and the minimization function shall be established using the undesirable deviational variable which have to be minimized. The Goal Programming Model for capital structure decision for a Company is:

Objective: Minimize $z = d_1^- + d_2^+ + d_3^- + d_3^-$

Subject to :

Goal Constraint 1	:	ROE - $d_1^+ + d_1^-$ = 23.73[1]
Goal Constraint 2	:	ROGNS - $d_2^+ + d_2^-$ = 8.5[1]
Goal Constraint 3	:	ROGCE -$d_3^+ + d_3^-$ = 23.25[1]
Industry Constraint 1	:	TDE = 1.071+ 0.979 LTD - 0.0007 PBIT + 0.003 REFX + 0.002ROGPBIDT + 0.002ROGGB + 0.040 CEFX +0.001ROGCE + 0.001 FAR
Industry Constraint 2	:	LTD = -0.812 + 1.085 TDE + 0.001 NWC - 0.016DV +0.013PO + 0.000MC + 0.001CFFI + 0.010PBIDTM - 0.008CEFX
Firm Constraint 1	:	ROE = 0.399ROGCE - 0.0105ROGPAT
Firm Constraint 2	:	ROGCE = 74.31ROGRE + 6.71ROGLTD
Firm Constraint 3	:	ROGPBIT= 5.717 ROGNS
Firm Constraint 4	:	ROGPAT = 172LTD-145.25TDE-0.21 ROGPBIT
Firm Constraint 5	:	NWC = 97.84 TDE
Firm Constraint 6	:	PBIT > 153.88
Firm Constraint 7	:	ROGGB > 3.8
Firm Constraint 8	:	NWC > 147.31
Firm Constraint 9	:	DV = 48
Firm Constraint 10	:	PBIDTM= 12.26
Firm Constraint 11	:	CFFI = 42.38
Firm Constraint 12	:	MC > 401.87
Firm Constraint 13	:	CEFX = 0
Firm Constraint 14	:	PBDT > 166.24

Description of variables is given in Appendix H. Table II gives the goal programming model solution for the agriculture firm with the formulation. For explanation on the constraints and goal please see notes to the Table II.

There are in all 3 goals with no priorities, two (2) industry constraints and fourteen (14) firm constraints of the α Co. There are a total of 19 constraint equations. There are 27 variables including the deviational variables. POM

Table II

Goal Programming Solution for a_1 Company using Accounting Proxies for Goals and Constraints

Objective Function: Minmize = $d_1^- + d_2^+ + d_3^+ + d_3^-$

Objective Function	z = 0;
DECISION VARIABLES :	LTD = 0; ROGLT = 0;
Non Basic Variables	$d_1^+=1, d_1^-=0$, $d_2^+=0, d_2^-=1$, $d_3^+=1, d_3^-=1$
Variables (27)	ROGNS, ROGRE; ROGCE; ROE; ROGPB; TDE; PBDT; PBIT; ROGGB; MC; PO; ROGPAT; CFFI; REFX;NWC; PBDTM; CEFX; FAR; DV; LTD; ROGLT : d_1^+, d_1^-, d_2^+, d_2^-, d_3^+, d_3^-

S.No.	Constraints		Target Value	Solution			Deviations			Sensitivity Analysis RHS Range		
Goals												
1.	ROE-$d_1^+ + d_1^-$	=	23.7301	ROE	=	23.730	d_1^+ = 1 d_1^- = 0			7.9251	–	39.8025
2.	ROGNS-$d_2^+ + d_2^-$	=	8.5001	ROGNS	=	8.500	d_2^+ = 0 d_2^- = 1			0.0000	–	+ μ
3.	ROGCE-$d_3^+ + d_3^-$	=	23.2501	ROGCE	=	23.250	d_3^+ = 1 d_3^- = 1			0.0000	–	63.4660
Industry												
4.	TDE2 -0.979 LTD + 0.0007 PBIT - 0.003 REFX- 0.002PBDTM - 0.002ROGGB - 0.040 CEFX - 0.001ROGCE + 0.001 FAR	=	1.071	TDE LTD PBIT REFX PBDTM ROGGB CEFX ROGCE FAR	= = = = = = = = =	0.119 0.000 Rs. 257.310 cr Rs. 163.920 cr Rs. 166.240 cr Rs. 3.870 % 0.000cr 23.250 % 6.550 %		–		0.3400	–	+ μ
5.	1.085 TDE + LTD^3 + 0.001 NWC -0.016DV +0.013PO + 0.001CFFI + 0.010PBTM+0.008ROE	3	0.081	TDE LTD NWC DV PO CFFI PBTM ROE	= = = = = = = =	0.119 0.000 147.330cr 48.000days 16.790% 42.380cr 12.260cr 23.730 %		–		-0.0476	–	0.8741

.No.	Constraints		Target Value	Solution			Deviations			Sensitivity Analysis RHS Range		
Firm												
6.	-0.393ROGCE+ROE[4]+0.0105ROGPA	³	0.000	ROGCE ROE ROGPA	= = =	23.250% 23.730% 115.440%	S1	=	15.805	- μ	—	15.8049
7.	ROGCE5 -6.71 ROGLT- 74.31ROGRE	³	0.000	ROGCE ROGLT ROGRE	= = =	23.250% 0.000% 0.313%		—		- .μ	—	23.2500
8.	ROGPB6 - 5.717 ROGNS	³	0.000	ROGPB ROGNS	= =	48.595 % 8.500%		—		-48.5945	—	+ μ
9.	145.25TDE -172 LTD +ROGPAT[7] + 0.21 ROGPB	³	0.000	TDE LTD ROGPA ROGPB	= = = =	0.119 0.000 115.440% 48.595%	S2	=	142.828	- μ	—	142.8283
10.	PBDT8	³	166.240	PBDT	=	166.240cr		—		0.0000	—	+ μ
11.	PBIT9	³	152.880	PBIT	=	257.310cr	S3	=	104.430	- μ	—	257.3104
12.	ROGGB10	³	3.870	ROGGB	=	3.870%		—		0.0000	—	+ μ
13.	MC11	=	401.000	MC	=	401.000cr		—		0.0000	—	+ μ
14.	DV12	=	48.000	DV	=	48.000days		—		39.9638	—	97.5718
15.	PO[13]	=	16.790	PO	=	16.790%		—		0.0000	—	26.6808
16.	ROGPAT[14]	³	115.440	ROGPA	=	115.440%		—		0.0000	—	+ μ
17.	CFFI15	=	42.380	CFFI	=	42.380cr		—		0.0000	—	170.9600
18.	REFX[16]	=	163.920	REFX	=	163.920cr		—		0.0000	—	+ μ
19.	-11.91 TDE + NWC17	³	0.000	TDE NWC	= =	0.119 147.330cr	S4	= —	145.919	- μ 0.0000	— —	145.9186 25.1180
20.	PBIDTM18	=	12.260	PBTM	=	12.260cr						
21.	CEFX16	=	0.000	CEFX	=	0.000cr		—		0.0000	—	+ μ
22.	FAR[19]	=	6.550	FAR	=	6.550		—		0.0000	—	737.5631
23.	NWC20	³	147.330	NWC	=	147.330cr		—		2.9958	—	275.9100

Note : * Solution is obtained using POM Software
S_1, S_2,S_3,S_4 are slack variables
More Please see on next page

Notes to Superscripts in Table II

1 Target values for the goals are based on the firm's preferences and determined with the help of the management participation.
2 Total debt to equity (TDE) in the agriculture industry is dependent on long term debt (LTD), profit before interest and tax (PBIT), revenue earning in foreign exchange (REFX), rate of growth in profit before interest, depreciation and tax (ROGPBIDT), rate of growth of gross block (ROGGB), capital earning in foreign exchange (CEFX), rate of growth of capital employed (ROGCE) and fixed asset ratio (FAR). This has been identified through the stepwise regression, please refer Appendix VI.
3 Long Term debt to equity (LTD) in the agriculture industry is dependent on total debt to equity (TDE), net working capital (NWC), debtors velocity (DV), payout (PO), market capitalization (MC), cash flow from investing activities (CFFI), profit before interest, depreciation, tax margin (PBIDTM), capital earning in foreign exchange (CEFX). This has been identified through a stepwise regression, please refer Appendix VII.
4 Rate of Return on Equity (ROE) is dependent on the rate of growth of capital employed (ROCE) and rate of growth of profit (ROGPAT) which has been developed using the firm's 10 years data and multiple regression analysis.
5 Rate of growth of capital employed (ROCE) is dependent on rate of growth of retained earnings (ROGRE) and Rate of growth of long term debt (ROGLTD). The rate of growth of paid up equity is not considered as the equity in the past 10 years has remained constant at ₹ 1.29 crores and the firm does not intend to change ROGCE.
6 Rate of growth of profit before interest and taxes (ROGPB) is dependent on the rate of growth of net sales (ROGNS).
7 Rate of growth of profit after tax (ROGPAT) is dependent on long term debt (LTD), total debt to equity (TDE), rate of growth of profit before interest and taxes (ROGPBIT).
8 Firms wants that Profit before depreciation and tax (PBDT) should not fall below the present level of ₹166.24crores
9 Profit before interest and Taxes (PBIT) has to be higher than the present level of operations in the year 2007 at Rs. 153.88 crores.
10 Rate of Growth of gross block (ROGGB) is 3.88 which can be greater than the previous year as the firm intends to purchase equipments.
11 Market Capitalization is attempted to be higher than the present level, management is not interested in maintaining its market capitalisation and only in increasing it. 12 Firm intends to maintain its debtors velocity at 48 days, it may choose to reduce it in future but not at present. Firm does not intend to increase it as would then increase its requirement for the net working capital.
13 The firm intends to keep its payout ratio (PO) at 16.42%
14 The firm intends to have its Rate of Growth of profit after tax (ROGPAT) more than ₹ 115.440 crores.
15 The firm stands invested in a manner that provides for cash from investing activities (CFFI) which ₹ 42.53 crores and there is no scope for improvement.
16 Firm does not have Capital earning from foreign exchange (CEFX) and does not intend to have the same in future and intends to maintain its revenue earnings (REFX) at ₹ 163.92 crores
17 Net working capital (NWC) and total debt to equity (TDE) relationship has been determined, keeping TDE as independent and assuming that current liabilities finance most of the current assets and the total debt is used to finance it.
18 The firm with its operation has profit before interest, depreciation and tax margin (PBIDTM) as ₹ 12.29 crores which is retainable with cost efficiencies.
19 The firm is satisfied with its fixed asset ratio (FAR) of 6.550.
20 Net Working Capital (NWC) of the firm with present operation is ₹ 147.31 crores and it cannot reduce it with its present form of operation and terms.

software has been used to seek the goal programming solution in its linear formulations. The results are presented in Table II. On the 26th iteration, the software achieved the solution which would minimize the value of z to zero such that ROE is 23.73 %, ROGNS 8.5% and ROGCE is 23.25 % which were the goals. The ROGRE would be 0.313%, ROGPBIT has reduced to 48.595 %, TDE is reduced to 0.119, PBDT is the constraint met at ₹ 166.240 crores, PBIT has increased at ₹ 257.310 crores, ROGGB is maintained at the constraint level of 3.870 % MC was found to be ₹ 401.87, PO was also found to be maintained at 16.790 %, ROGPAT was same as the previous year of ₹ 115.440 crores, CFFI is also maintained at ₹ 42.380 crores, REFX was also maintained at ₹ 163.920crore , NWC was also maintained at ₹ 147.330 crores, PBIDTM is also maintained at 12.260%, CEFX which was a constraint was also zero. However the fixed asset ratio has increased to FAR 6.550. DV was to be at the constraint level of 48.000 days.

The α_1 Co. would have a rate of growth of sales at 8.5% which increases its ROCE by 23.25%, the total debt to equity would reduce from the present level of 0.15 to 0.11 and it is proposed that the long term debt which was 0.03 may be paid back to keep a zero level of long term debt. The REFX is also maintained as a non basic variable whereby the value for the given solution it would be zero.

VII. Re-focus on Organic Agriculture and Introduce Mobile Mandi & Mandi on Wheels for Efficient Agriculture Markets

Nations around the globe are seriously concerned to develop both the agriculture and the rural areas. As these are suppose to be the central point of the economy with majority of people living in rural areas and dependent on agriculture. Development of agriculture has been seen as the precondition of industrialization. It is the agriculture and rural areas feeding the industry with raw materials and these sectors are also the major consumers as these are spread widely and have larger section of population living there.

Agriculture and rural development has not attracted the desired investment and the financing pattern is largely traditional. Also the return on investment is very low, which makes it dis-lucrative for masses to stay in agriculture and related industries. Hence, it is either left to the individuals living in rural areas, engaged in agriculture or the state and the local bodies. The corporates and major banks and financial institutions have played marginal role i.e. to the extent the state facilitated or asked them to involve themselves assisting these two sectors. The state and the governments have their own budgetary constraints. Lately the World Bank, and other international financial institutions are focusing on financing and investment in the agriculture and rural development. The strategies suggested and the policies adopted in the developed economies and developing economies with special reference to Hungary and India would be traced and highlighted. A new strategy in the changed paradigm is also suggested

While there are massive technological innovations in the technology (technological change) in agriculture with respect to methods of cultivation, seeds, development, difference use of land, soil testing, fertilizer, use of

equipments etc almost all over the world yet larger part of agriculture despite impressive innovations is bound by tradition and traditional technology for various reasons. The funding available to agriculturists, their resource position, education, dependence on nature and natural resources, poor returns on investment and such other factors has not attracted desired investment and other resources in this most natural occupation of the world. Most of what is practiced is learnt from ancestors, villagers and the fellow agriculturists particularly in the developing economies of the world. What feeds the world and the nation unfortunately is not fed the same way in a reciprocal way by society.

Some of the emerging needs for enhancing innovations and development for both rural and agricultural regions are

- innovations to meet climate change
- innovations to meet energy needs through renewable sources
- creative means to counter un-employment
- needs to be globally inter-connected simultaneously taking care of global financial disturbances (spillover effects)
- inducing non-inflationary growth
- innovations to counter terrorism and money laundering

Agriculture and rural areas and the people engaged and living there do not enjoy the status which is enjoyed by their counterparts in cities and metropolis. Poor infrastructure, weak social facilities such as high quality education, health, clubs and other social activities are missing in rural areas almost in the whole world economy. As a result their quality of life is generally low as compared to their counterparts. Given the current Global Financial Meltdown, China has introduced special schemes to motivate its people to engage themselves in Agriculture and Agro-based industries. Given the importance of Green and Clean food due to biological problems (weak immune system) and diseases emerging in large part of Western Developed Region, the organic agriculture has gained substantial importance and become the need of the hour. In the next two subsections, we have presented some of the pioneering works done by IIF Professors in the field of Financing Agriculture and Empowering Farmers to lead a dignified life in the last 31 years, some of which have seen light by decisions taken by Governments and International agencies worldwide.

7.1 *Financing Agriculture and Liquidity with Farmers*

IIF has undertaken large number of studies on financing agriculture and improving the lot of farmers and poverty alleviation. IIF had proposed the formulation of Kisan Credit Cards and Corporate Farming at various forums, conferences and news channels between 1995 to 1997. This was brought to light by the joint action taken by Government of India, Reserve Bank of India (RBI) and the Ministry of Agriculture in 1997-98.

There have been long standing debates to (a) introduce Universal Basic Income Scheme for farmers; (b) provide loan waivers year after year ; (c) improve liquidity to farmers through NABARD and other Regional Rural

Banks amongst many others. Professors at IIF have raised concerns and pointed out appropriate solutions to for financing liquidity to farmers making them more productive and efficient like

- removing involvement of middle men by introduction of commodity exchanges terminals in Mandi's and encouraging corporate farming
- increasing quality and quantitiy of storage spaces though opening up o FDI flows in the Storage and Agro-based industries sector
- bringing an end to the curse of Loan Waiver dependence, as currently for last decade or so, a loan waiver amounting to ₹ 1,50,000/- Crores is being granted by various governments both at state and central levels to for pleasing the farmers community.
- NABARD and Regional Rural Banks are have with them a large number of funds which are never put to use, as they are not productively disbursed. Its important that the government and the farming community comes forward to ensure application and use of these funds being allocated on an yearly basis with such organisation.
- the Universal Basic Income (UBI) for farmers is being mooted again, despit its orgination going back to 16th Century, followed by various European Nations implimenting and now considering to withdraw and also repeated proposals by President Nixon and most recently again in 2016 before the US Congress. The complexity with it is the negative income tax role and the demoralizing social evil it breeds with it. Also the fact that most nations like India have already introduced series of subsidies and benefits being given to large segment of society on different account, which runs in about 20,000 schemes, which to consider withdrawing is a hurculian task to replace with the UBI.
- financing of farming activities and agro-based activities has been at a low end, even when it comes for technology based products/services. It is important that better technological frameworks are not only put in place, but also supported by banks and financial institutions as done for products in the retail markets.

7.2 *Mobile Mandi & Mandi on Wheels for Efficient Agriculture Markets facilitating Doubling Farmers' (Kisan) Income*

IIF Professors proposed setting up Mobile Mandis & Mandis on Wheels for Efficient Agriculture Markets facilitating doubling farmers Income. In this respect he appreciated Finance Minister- Shri Arun Jaitley's initiatives in the Union Budget 2018-19 focusing on the aspiration of the Farmers (Kisan) ; the Youth and the Senior Citizens by providing for a Healthy and Happy Living through Growth oriented Forward Looking Budget.

Professors feel that one of the most serious problems of Agriculture produce is marketing and realization of appropriate Price (returns) for their produce. The Finance Minister has rightly proposed 22,000 rural Haats to be developed and updated into agricultural market to protect the interest of 86% small and marginal farmers. In this respect Prof. Agarwal urged the Government to promote and develop "Mobile Mandi & Mandi on Wheels" for Efficient Agriculture Markets for Doubling Farmers (Kisan) Income.

IIF Professors appreciated that the Finance Minister has given due emphasis to Agriculture [more specifically Farmers (Kisans)], which house 70-75 % of India's population in Agriculture (including Agro based Industries) after a gap of almost Four (4) decades in the Union Budget of India. Finance Minister's proposal to raise the MSP to one and a half time for all agricultural produce will greatly help the farmers in increasing their incomes states.

There has been a serious concern voiced by the Farmers (Kisans) for over Three (3) decades for not-getting an appropriate price for their produce given the difference of price which is clearly evident from the price a farmer gets for selling his produce against the market price at which it is sold to the end consumer. The difference at times has been to the tune of over 35-300% of the price that farmer gets after working hard for the full year. This has been due to the fact that there has been excessive hoarding (Kalabazari) and exploitation by the middle men involved in connecting the farmers (Kisan) produce to the end consumer through mandies. The Union Budget 2018-19 and the actions taken by the Government in the last 3 years have been trying to resolve / reduce such exploitation.

IIF recent study indicates that by adopting the concept of Mobile Mandi and Mandi on Wheels the Government would be able to facilitate in

i. Doubling the income of farmers (Kisan) possibility within one or two years;
ii. Reducing the role of middle men, exploitation and price disparities;
iii. Reducing wastages of produce;
iv. Managing inflation (especially food inflation)
v. Reducing the burden on Exchequer / Treasury (Fiscal Spending toward grant of loan waivers and the heavy Cost control measures undertaken by Government to control fuel prices from time to time).

The Mobile Mandies and Mandi on Wheel will lead to creation of efficient agriculture markets by removing information asymmetry and robust food buffers to be appropriately allocated toward the need of growing India. IIF Professors have advocated development of "mobile mandies and mandies on wheel" in his TV Interviews in Lok Sabha TV (30-01-2018); Rajya Sabha TV (1-02-2018); All India Radio (2-02-2018) and Delhi Doordarshan TV (DD News) (2-02-2018) and at series of academic forums in the November 2017 to December 2018.

The Geneses of "Mobile Mandi & Mandi on Wheels" is based on the fact that the poorest of the poor, small and marginal farmers are connected via mobile today given the telecommunication drives in India since the early 2000s. With the power of Mobile, the farmer today can communicate the information of the produce through SMS / Whats App to Centralized Mandi Hub System which will then connect the message to all Mandies (Large / Small). This will greatly remove information asymmetry. It is heartening to see that the connectivity between the large and small mandies (proposed Haats) has been provisioned in the Union Budget 2018-19 by the Finance

Minister. The message is then routed to the nearest mandies whereby necessary mobilization for collection of produce from the farmer can be facilitated and hence forth reducing the direct cost to the farmer (Kisan) due to middle man / hoardings. The reduction of cost to the farmer (kisan) has been raised as a key concern factor by the Prime Minister Shri Narendra Modi in his address to the nation immediately after the presentation of the Union Budget 2018-19.

The Union Budget 2018-19 has been a Path Breaking Budget. It is Growth oriented Progressive, Forward Looking and Practical. The Budget will foster growth in social sector and the economy; the needs of farmer (Kisan, Agriculturist); reducing poverty; healthcare; women, youth and senior citizens of India. The budget will also ensure the re-emergence of the feeling of Sone Ki Chidiya (Golden Bird) in the hearts of every Hindustani for a better happy and healthy living in Bharat.

VIII. Setting in Fiscal Discipline and the re-orienting role of IMF

The fiscal burden due to recession has gone to double and some countries to triple the value as against what they were in the beginning of 2008. Fiscal concerns were already troubling large number of Emerging Markets and developed nations since the mid of 1995 with the emergence of crisis / recessionary scenarios in different parts of continents. Europe had been going through major corrections since the beginning of this century with the integration process taking a firm step to unify the monetary policy with the emergence of ECB and Euro. The Fiscal Policies had to be aligned to some extent to ensure stability and strengthen to the EURO zone. We are happy that the European Union, European Commission and the European Parliament have setup the Fiscal Stability Board (FSB) in 2017 based on our suggestions made in our work in 1999 (Agarwal, 1999; Agarwal and Agarwal, 2007)

Fiscal order in an economy is vital for Monetary economics to bring fruits from a healthy economic environment. There is excessive fiscal spending taking place in the last 6 years given the elections taking place in various Nations bearing impact on financial and trade orientations in the World Economy. The EU has still not been able to develop the confidence within the EU Institutions and their people of the success of the EMU and the Euro. This is falling apart due to no-overlaying Fiscal Policy structuring fiscal discipline in the Euro Member nations. If we look at election periods in US, France, Russia, India, and almost all nations worldwide, we would find that the fiscal budgets and spending go steeply up crossing all charts for previous trends. Special packages and schemes are introduced to energise the environment and show growth in nations, not to mention the excessive spending on security of the electorates and the election procedures. These are seen as vital to establish confidence within the society; however these act as a major cost to the growth and development of the Nation's socio-economic framework in establishing a sound financially equitable growth structure.

8.1 *European Fiscal Policy Board : To avoid De-stablization within Europe due to inflationary pressures (Agarwal and Agarwal, 2007)*

Agarwal and Agarwal (2007) had re-emphasised the need to set-up a Fiscal Policy Board (as proposed in the work of Agarwal in 1999) to bring in equilibrium in the European Fiscal affairs leading to inflationary pressures in Europe. The Fiscal Policy Board would comprise of Ministers of Finance of EU member states as their board members and Secretary Ministry of Finance to be the Deputies. The role of the Fiscal Policy Board would be to stream line and develop a plan for smoothing the Fiscal Policy within Europe to avoid inflationary pressures and de-stabilzation of Europe and the integration process (as observed in India & USA). The suggestion was seconded by Dr. Jean-Paul Fitoussi, President OFCE-Parigi, France and other speakers at the ER forum at the Italian Parliament.

While addressing on the challenges before Europe at the Italian Parliament (on 19 September 2007), the Global Forum 2007 (on 5th November 2007) and Swedish Regional Council Group of Ministers/Ambassadors in (16th November 2008), we were happy to see that the suggestion of Agarwal (1999) to formulate the European Constitution is finding place within Europe and European Institutions with the 1st draft of European Constitution submitted to the people in June 2004 and the Fiscal Policy Board (now established as FSB in 2017). He stressed the need for Europe to focus on global partnerships and interdependence to take care of challenges faced in last 14 years due to higher un-employment (i.e. blue and white collor workers), lower growth within the region, US recession and inflationary pressure within Europe leading to internal dissatisfaction with the integration process. Agarwal (1999) and Agarwal and Agarwal (2017) highlighted that these issues are a matter of concern, as they may cause de-stabilization of the Global Financial Stability and Development. We are happy to learn that the European Union, European Commission and the European Parliament have setup the Fiscal Stability Board (FSB) in 2017 based on our suggestions made in our work in 1999 (Agarwal, 1999; Agarwal and Agarwal, 2007).

8.2 *Restructuring of IMF*

Agarwal (2004) proposed that there is an urgent need for restructuring the IMF to handle the financial crisis faced by various nations in a more meaningful way. First, there is a need for considering in a systematic fashion, not only the role of world institutions, but also of regional arrangements. Accordingly, regional monetary funds to monitor, regulate and suggest measures to countries of the region may be set up. Regional Monetary funds should be set up to assist developing countries in different regions for meeting their temporary liquidity problems and to help them avert default which may perpetuate the crisis by shaking the confidence in these economies. An attempt was made in this regard in 1997. The Japanese government had proposed to set up an Asian Monetary Fund (AMF) first in 1997 to monitor the region's economies and provide early warning to the respective

governments on the impending crisis. It could also provide speedy assistance to deal with the crises in their early stages so as to prevent them from spreading. AMF could also be a significant step towards decentralization of international monetary and financial decision making that is presently concentrated in the Washington, DC. Regional Monetary Fund could understand region specific issues better that IMF. However, despite strong support within the region, the proposal for an AMF did not get far. It was opposed by the United States and IMF, as it posed a threat to the monopoly of IMF. However, in 1998, Japan proposed the Miyazawa Plan at the Annual IMF-World Bank meeting, which is a more modest proposal. It seeks to provide a US$ 30 billion package for the region for short-term trade financing as well as recovery through long-term projects. It was suggested that the Japan Export-Import Bank, the World Bank and the Asian Development Bank could jointly take part in the initiative. Agarwal in his keynote address in Chile on "Volatility of International Financial Markets: Regulation and Financial Supervision" proposed that "India can take initiative to form a regional IMF- SAARC Monetary Fund to assess and help the member countries of this region". Later during the same year the proposal was seriously considered by the government and the honourable PM Shri Atal Bihari Vajpai proposed the idea for the formulation of the Monetary fund at the SAARC meeting in Pakistan (November 22-23, 2004)

Secondly, there is an urgent need to review the working of IMF as IMF package of reviving economies is often counter productive for most of the countries approaching IMF. Often IMF prescribes the same set of conditionalties to every economy which have quite diverse requirements and needs. For instance, the IMF package uniformly insists on belt tightening, devaluation and demand compression measures that affect growth adversely and hence make recovery even more difficult and aggravates volatility in financial markets. Furthermore, despite a widespread recognition of the role played by the capital account liberalization in accentuating the crisis, the IMF has been pushing the affected countries towards accelerated capital market liberalization in the wake of the crisis. IMF often adopts a short sighted and rather inflexible approach to crisis management. Malaysia decided to withdraw from the IMF Program soon after it was initiated to the program after the crisis. Instead, Malaysia adopted an unorthodox approach to dealing with the crisis that included imposition of capital controls although temporarily and the adoption of a fixed exchange rate regime. More importantly, Malaysia's approach also included lower interest rates and fiscal expansion or pump priming by the government as against belt tightening measures and balancing of budget included in the IMF package. As a result, Malaysia did not suffer the kind of social consequences that other affected countries did and the recovery was rather quick with a 5.8 per cent growth of GDP in 1999 and 8.5 per cent in 2000, compared to much lower rates of growth achieved by Thailand, Indonesia and the Philippines under the IMF program.

Thirdly, there is also need for revival of SDRs Allocation. Special Drawing Rights (SDRs) were established by the IMF at the end of the 1960s to supplement international liquidity. SDRs were supposed to become the principal reserve asset. However, the allocation of SDRs has been abruptly halted since 1981, thus adversely affecting the ability of developing countries to supplement their reserves and making them vulnerable to the liquidity crisis. They have been forced to borrow on onerous terms to augment their international reserves. The institution of SDRs continues to be relevant, especially for developing countries and it should be restored as soon as possible by the IMF. There is, therefore, need for a thorough reform of the IMF's working and bringing flexibility into the package that keeps in mind the specific needs of the affected countries.

IMF is currently viewed as a single global institution with no alternatives. It should rather become an apex institution with a network of regional or sub-regional monetary funds observing monetary and economic stability of the regions and equitable growth in world investments.

8.3 *Private Sector Initiative: Replicating India's Chit Fund Concept in Banking & FI Industry*

With the failure of FDIC to provide for funds and the US Government not approving the US$ 700 billion fund in August 2008, it was observed with 10 major Banks of US and Europe coming forth to setup a joint fund of US$ 70 billion with each bank contributing. The group of global commercial and investment banks, included Bank of America, Barclays, Citibank, Credit Suisse, Deutsche Bank, Goldman Sachs, JP Morgan, Merrill Lynch, Morgan Stanley, and UBS. This step was initiated to help enhance liquidity and mitigate the unprecedented volatility and other challenges affecting global equity and debt markets (ET, 2008). These banks would work together

i. First, to assist in maximizing market liquidity through their mutual commitment to their ongoing trading relationships, dealer credit terms and capital committed to markets.
ii. Second, to establish a collateralized borrowing facility, which ten banks (Bank of America, Barclays, Citibank, Credit Suisse, Deutsche Bank, Goldman Sachs, JP Morgan, Merrill Lynch, Morgan Stanley, and UBS) have committed to fund for US$7 billion each (US$ 70 billion in total). The facility will be available to these participating institutions for liquidity up to a maximum of one third of the facility for any one bank. It is anticipated that the size of the facility may increase as other banks are permitted to join the facility.
iii. Third, to help facilitate an orderly resolution of OTC derivatives exposures between Lehman Brothers and its counterparties. This effort included opening the OTC derivatives market for trading this Sunday afternoon

The fund so setup could be sought by any bank or financial institution in difficulty of credit needs for short term to enable avoid failures of banks and financial institutions taking place one after the other in the last 6 months,

at a rate decided by the member banks. This is a very traditional form of financing operations followed all over India by Indian indigenous Business Men, where they are in-capacitated to seek loans from banks/FIs due to non-formal structure of business and weak balance sheets. Hence few of them come together to pour a fixed amount of fund referred to as the Chit Fund, which can be utilized for a short duration by any of the members contributing to the Chit Fund at rate higher than the bank lending rates. This mechanism is illegal and not approved by the RBI and the Government, however has been function and still does all over the country. The step undertaken by the Banks is a replication of the same concept within the Banking and Financial Industry.

IX. Re-energizing multi-lateral trade agreements (WTO) along with bi-lateral FTAs

The WTO seems to have phased out with its role getting biased in the Globalisation process. However, globalisation has helped the per-capital social enrichment at all level in both developed and developing worlds at a much faster pace in a short span of 3 decades as against the earlier socio-economic smoothening which normally took centuries. Given the establishment of bi-lateral trades post 2000 and the Doha round, the importance of trade and inter-dependence of nations has come forth. Hence it is vital that the WTO framework get back into functionality if the World Economy would like to see fruits of the globalisation process initiated and laid foundation 2 decades back. Given the growth in the levels of FTAs signed post 2000, the WTO may want to consider re-orienting its structure to given appropriate place to FTAs within the WTO Framework. This would enable both sets of Trade relationships exists mutually benefiting the consumers, enhance trade and society at large.

X. Case Study of growth of MSME in India and Uzbekistan

10.1 *India's MSME Growth Story*

10.1.1 *Introduction*

The Small and Medium Enterprise (SMEs) have emerged as an engine for growth for both developed and emerging economies. They have always been a vital component for the functioning of large industries and government machinery as the prime feeder industry. The way the SMEs survived through the World War I and II and henceforth laid the foundation for growth momentum through entrepreneurship has been a key marker in the last half decade. The potential is well recognized by international Agencies like World Bank, ADB, IMF, IFC, UN and others through their reports, works and project funding's for the SMEs.

India throughout its history of over 10,000 years has consistently fostered the growth of SME and Entrepreneurs for their being the engine for sustained growth and development of different regions and socio-economic setups. In the post-independence Era of 1947 onwards, India has observed the emergence of SSI (Small Scale Industries) sponsored via IDBI (Industrial development Bank of India) ; SIDBI (Small Industry Development Bank of

India) ; IFCI ; NABARD and various other sectorial financial institutions. The growth of SSI was seen from 1947 till 1985. Henceforth emergence of the SMEs (Small & Medium Enterprise) with the restructuring of the SSI sector to be in line with international standards and nomenclature. The SMEs with the PP Model was there in focus from 1985-1997. Post 1997, came the change in financing patterns with the emergence of the PPP Model (Public Private Partnership following ADB Model) involving the SMEs as a critical component of the Sustained Growth and Development framework. The definition was reoriented with the creation of the MSME Ministry in 2010 with focus on Micro, Small and Medium Enterprises (MSMEs). The Micro Enterprises are primarily Entrepreneurial firms.

The Micro, Small and Medium Enterprises (MSMEs) in India today play a pivotal role in the economic and social development, often acting as a nursery of entrepreneurship. They also play a key role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. The MSME sector contributes significantly to the country's manufacturing output, employment and exports and is credited with generating the highest employment growth as well as accounting for a major share of industrial production and exports. MSMEs have been globally considered as an engine of economic growth and as key instruments for promoting equitable development. The major advantage of the sector is its employment potential at low capital cost. The labour intensity of the MSME sector is much higher than that of large enterprises. MSMEs constitute more than 90% of total enterprises in most of the economies and are credited with generating the highest rates of employment growth and account for a major share of industrial production and exports. The MSME sector has consistently registered higher growth rate compared with the overall industrial sector. With its agility and dynamism, the sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession (MSME Annual Report 2010-11, Ministry of MSME)

The MSME sector in India is highly heterogeneous in terms of the size of the enterprises, variety of products and services, and levels of technology. The sector not only plays a critical role in providing employment opportunities at comparatively lower capital cost than large industries but also helps in industrialisation of rural and backward areas, reducing regional imbalances and assuring more equitable distribution of national income and wealth. MSMEs complement large industries as ancillary units and contribute enormously to the socioeconomic development of the country. The key highlights of the MSME Sector are

- MSMEs account for about 45% of India's manufacturing output.
- MSMEs account for about 40% of India's total exports.
- Employs about 73 million people in more than 31 million units spread across India.
- Manufacture more than 6,000 products ranging from traditional to high tech items.

— In FY11, total production from MSME sector is 10,957.6 billion, an increase of more than 11% again FY 10. MSMEs have outperformed IIP and GDP growth rates in the past five years. The total production of MSMEs for FY11 was 10,957.6 billion (at 2001-02 prices). Between FY07 and FY11, the sector's total production grew at a CAGR of 11.5% - a clear indication of the substantial contribution of MSMEs to the Indian economy. During FY12, total production of MSMEs was projected to grow at 11.48%, compared to industrial and GDP growth of 8.2% and 8.4% respectively.

10.1.2 *Historical Perspective*

Table III
Growth in the MSME Sector since 1949 till 2012

Year	Total No of Units	Total Employment	Total Production
1949	3758 (SSI Units)		
1950	5305 (SSI Units)		
1951		3 million handlooms at work	
	Village Oil Industry		
	Soap making with Neem oil.	1,00,000 organisers, *mistries*, oil pressers.	3.16lakh tons oil
	Paddy husking	300 employees and part time work of seed collection for others.	3448 tons soap
	Palm Gur	40,000 hand pounders.	2 lakh tons
	Gur and Khandsari	60,000 agriculturists, tappers, etc.	2,53,252 tons of palm gur.
		1200 whole-time workers	(a) 450 lakh mds. of
		3800 part-time workers	improved ordinary
		4600 local honorary workers,	gur.
		600,000 cane-growers in	(A) 5-1 lakh mds.
		30,000 villages for part of	sanitary gur.
		the year.	(c) lakh mds. cream coloured jaggery.
	Leather Industry .		(d) 13-6 lakh mds. khandsari.
	Woollen Industry .	1200 employees including 900 tannery flayers etc., also about 8 lakhs chamars in 72,000 villages.	Hides, bones, tallow, Indigenous footwear .
	Hand-made paper Industry.	200 employees , 4000 spinners, 200 weavers.	10 lakh blankets
	Bee-keeping	loco paper makers.	1400 tons high-grade hand-made paper, valued at ₹54 lakhs.
	Cottage Match	150 apiarists and field-men; bee-keepers forming co-operatives.	
1956	Industrial Cooperative Societies (7105)		
1961	Industrial Cooperative Societies (37000)	2.92 million	111.9 crores
1965-66	Khadi and Small Scale Industries	3.88 million	331.9 crores
1968-69	Industrial Cooperative Societies (51000) SSI 140,000		
1969-74		3.82 million	331.9crores
1983-84		79lakhs	27,700 crores
1985-90		84 lakhs	30,415crores
1986-87	14.76 Lakhs		
1987-88	15.92 Lakhs	101.40 Lakhs	72,250 crores
1992-93	73.51 Lakhs	107 Lakhs	85,700 crores
1993-94	76.49 Lakhs	174.84 Lakhs	73.51 Lakhs

(*Contd...*)

Table III (Continued)

1994-95	79.60 Lakhs	182.64 Lakhs	98796 crore
1995-96	82.84 Lakhs	191.40 Lakhs	122154 crore
1996-97	86.21 Lakhs	197.93 Lakhs	147712 crore
1997-98	89.71 Lakhs	205.86 Lakhs	167805 crore
1998-99	93.36 Lakhs	213.16 Lakhs	187217 crore
1999-00	97.15 Lakhs	220.55 Lakhs	210454 crore
2000-01	101.1 Lakhs	229.10 Lakhs	233760 crore
2001-02	105.21 Lakhs	238.73 Lakhs	261297 crore
2002-03	109.49 Lakhs	249.33 Lakhs	282270 crore
2003-04	113.95 Lakhs	260.21 Lakhs	314850 crore
2004-05	118.59 Lakhs	271.42 Lakhs	170219 crore
2005-06	123.42 Lakhs	282.57 Lakhs	178699 crore
2006-07	361.76 Lakh	294.91 Lakhs	188113 crore
2007-08	377.37 Lakh	805.23 Lakhs	868543.79 crore
2008-09	393.70 Lakh	842.23 Lakhs	917437.46 crore
2009-10	410.82 Lakh	881.14 Lakh	971407.49 crore
2010-11	428.77 Lakh	922.19 Lakh	1029331.46 crore
2011-12	447.73 Lakh	965.69 Lakh	1094893.42 crore

Note : 1 Crore = 10 Million
1 Lakh = 0.1 Million

Source: Cencus Report, Ministry of MSME

Table IV
Third All India MSME Census of Small Scale Industries 2001-02

S No.	Characteristic	Total SSI Sector	Registered SSI Sector	Un-Registered SSI Sector
1	Size of the sector	1,05,21,190	13,74,974	91,46,216
		-100%	-13%	-87%
2	No. of rural units	58,08,359	6,09,537	51,98,822
		-100%	-10.50%	-89.50%
3	No. of urban units	47,38,586	7,65,437	39,73,149
		-100%	-16%	-84%
4	No. of SSIs	44,45,868	9,01,291	35,44,577
		-100%	-20%	-80%
5	No. of SSSBEs	60,75,322	4,73,683	56,01,639
		-100%	-8%	-92%
6	No. of ancillary units among SSIs	1,32,313	45,797	86,516
		-100%	-35%	-65%
7	No. of tiny units among SSIs	44,25,587	8,82,496	35,43,091
		-100%	-20%	-80%
8	No. of women enterprises	10,63,721	1,37,534	9,26,187
		-100%	-13%	-87%
9	Nature of activity:			
	Manufacturing/ Assembling/ Processing	41,75,815	8,72,449	33,03,366
		-100%	-21%	-79%
	Repairing & Maintenance	17,21,506	28,843	16,92,663
		-100%	-1.70%	-98.30%
	Services	46,23,869	4,73,682	41,50,187
		-100%	-10%	-90%
10	Type of Organization:			
	Proprietary	1,00,84,250	12,21,702	88,62,548
		-100%	-12%	-88%
	Partnership	2,02,852	99,190	1,03,662
		-100%	-49%	-51%
	Pvt. Company	71,437	33,284	38,153
		-100%	-46.60%	-53.40%
	Cooperatives	14,569	4,715	9,854
		-100%	-32%	-68%
	Others	1,48,082	16,083	1,31,999
		-100%	-11%	-89%
11	No. of units managed by:			
	SC	10,51,903	1,07,934	9,43,969
		-100%	-10%	-90%

	ST	5,22,831	48,560	4,74,271
		-100%	-9.30%	-90.70%
	OBC	43,40,778	5,29,406	38,11,372
		-100%	-12%	-88%
	Others	46,05,678	6,89,074	39,16,604
		-100%	-15%	-85%
12	No. of units managed by women	9,95,141	1,14,361	8,80,780
		-100%	-11.50%	-88.50%
13	Main source of power:			
	No power needed	42,15,646	3,60,611	38,55,035
		-100%	-8.60%	-91.40%
	Coal	3,24,006	28,841	2,95,165
		-100%	-9%	-91%
	Oil	5,95,817	40,401	5,55,416
		-100%	-6.80%	-93.20%
	LPG	62,459	7,222	55,237
		-100%	-11.60%	-88.40%
	Electricity	49,24,919	8,99,657	40,25,262
		-100%	-18%	-82%
	Non-conventional energy	67,681	7,142	60,539
		-100%	-10.60%	-89.40%
	Traditional energy/ Firewood	3,30,662	31,100	2,99,562
		-100%	-9.40%	-90.60%
14	Total original value of Plant & Machinery (in Rs.lakhs)	54,89,360	30,32,868	24,56,492
		-100%	-55%	-45%
15	Per unit original value of Plant & Machinery (in Rs.lakhs)	0.52	2.21	0.27
16	Total fixed investment (in Rs. Lakhs)	1,54,34,867	91,79,207	62,55,660
		-100%	-59%	-41%
17	Per unit fixed investment (in Rs. Lakhs)	1.47	6.68	0.68
18	Total employment	2,49,32,763	61,63,479	1,87,69,284
		-100%	-25%	-75%
19	Per unit employment	2.37	4.48	2.05
20	Employment per Rs. one lakh investment	1.62	0.67	3
21	Total Gross Output (in Rs. Lakhs)	2,82,26,998	2,03,25,462	79,01,536
		-100%	-72%	-28%
22	Per unit Gross Output (in Rs.lakhs)	2.68	14.78	0.86
23	Value of exports (in Rs. lakhs)	14,19,956	12,30,826	1,89,130
		-100%	-87%	-13%
24	No. of exporting units	50,606	7,344	43,262
25	Units maintaining accounts	10,03,005	4,04,672	5,98,333
		-100%	-40%	-60%
26	No. of economic activities as per National Industrial Classification-1998, pursued in SSI sector	672	672	619
27	No. of products/ services as per ASICC produced/ rendered in SSI sector	6,003	5,983	2,680
28	No. of reserved products (as per the reserve list effective on 31-3-2001) produced in SSI sector	898	897	423

Note : 1 Crore = 10 Million
1 Lakh = 0.1 Million

Source: Census Report, Ministry of MSME

Table V
Fourth All India Census of Small Scale Industries 2006-07

1	Total No. of Enterprises (Lakh)	15.64	
2	No. of Rural enterprises (Lakh)	7.07	45.23%
3	No. of Women Enterprises (Lakhs)	2.15	13.72%
4	No. of Enterprises by Type (Lakh)		
	Microenterprises	14.85	94.94%
	Small Enterprises	0.76	4.89%
	Medium Enterprises	0.03	0.17%
5	Enterprise by Type of Operation (Lakhs)		
	Perennial	15.14	96.81%
	Non Perennial	0.5	3.19%

(*Contd...*)

Table V (Continued)

6	Enterprises by Type of Activity (Lakh)		
	Manufacturing	10.49	67.10%
	Repariing and Maintenance	2.52	16.13
	Services	2.62	16.78%
7	Enterprises by Main Source of Power (Lakh)		
	No Powere Needed	3.79	24.25%
	Coal	0.25	1.59%
	Oil	0.53	3.40%
	LPG/CNG	0.07	0.42%
	Electricity	10.49	67.07%
	Others	0.51	3.28%
8	Enterprises by Type of Organisation (Lakh)		
	Proprietary	14.09	90.08%
	Partnership	0.63	4.01%
	Private Company	0.43	2.78%
	Public limited Company	0.08	0.54%
	Cooperatives	0.05	0.30%
	Others	0.36	2.30%
9	Enterprises bbby Type of Social Ctegory (Lakh)		
	SC	1.19	7.60%
	ST	0.45	2.87%
	OBC	5.99	38.28%
	Others	8.01	51.26%
10	Enterprises by Religion of Owner (Lakhs)		
	Hindu	12.7	81.22%
	Muslim	1.43	9.11%
	Sikh	0.52	3.31%
	Christian	0.64	4.12%
	Jain	0.08	0.52%
	Buddhist	0.01	0.07%
	Others	0.26	1.64%
11	Employment (Lakhs)	93.09	
	Microenterprises	65.34	70.19%
	Small Enterprises	23.43	25.17%
	Medium Enterprises	4.32	4.64%
12	Employment by Gender (Lakhs)		
	Male	74.05	79.55%
	Female	19.04	20.45%
13	Fixed Asset (Crore)		
	Micro Enterprise	1,69,538	37.75%
	Small Enterprise	2,23,503	49.76%
	Medium Enterprise	56,097	12.49%
14	Gross Output (Crore)		
	Micro Enterprise	3,12,973	44.24%
	Small Enterprise	3,18,794	45.06%
	Medium Enterprise	75,743	10.71%
15	Original Value of Plant and Machinery (Crore)	1,05025	
16	Net Worth (Crore)	4,15,303	
17	No. of Exporting Units (Lakhs)	0.47	
18	Enterprise by Source of Finance (Lakh)		
	No Finance/ Self Finance	13.64	87.23%
	Finance through Institutional Sources	1.70	10.87%
	Finance through Non-Institutional Sources	0.16	1.05%
	Finance through both Institutional and Non-Institutional	0.13	0.84%

Note : 1 Crore = 10 Million
1 Lakh = 0.1 Million

Source: Census Report, Ministry of MSME

10.1.3 *Indigenous Structures to finance MSMEs in India*

- Chit Fund
- NIDHI
- Micro-Financing
- SIDBI
- Grameen Banks

- Cooperative Banks (similar to Fund Banks in US / Europe)
- NABARD
- Invest India Start-Up Initiative
- Pradhan Mantri Mudra Loan Yojana (PMMY) Scheme
- Examples – Lijjat Papar, White Revolution (Dairy Milk & Amul)

10.2 *Case Study of growth of MSMEs in Uzbekistan*

Uzbekistan has shown an impressive development since its independence in 1991. The nation has progressed slowly but steadily with the rightful implementation of "*The Uzbek Model*". Uzbekistan, a landlocked country, has been able to attain a gross national income per capita of about US$1,050 in 2009 (GNI, Atlas method) in short span of 19 years of independence. It is a resource rich nation having substantial reserves of gold, copper, natural gas, oil, uranium and extensive production of cotton. Uzbekistan also has well developed social and capital infrastructure, especially compared with countries with similar GDP/capita and/or neighboring countries. The country accounts for one third of the region's population, and an estimated 37% of Uzbekistan's population living in urban areas, with about three million inhabitants in Tashkent, the largest city and the capital. The country has a very young and rapidly growing well educated population with needs for growth and employment opportunities, especially in rural areas (2/3rd of population lives in Rural Uzbekistan).

The growth of the gross domestic product (GDP) in the year 2009, made up 8.1 percent. This was supported by industrial production at 9 percent, investments increase by 26 percent (including foreign investments increase by 68 percent), positive balance in the foreign trade turnover of more than US$ 2.3 billion, growth of average salary up 40 percent, and the real incomes by 26.5 percent. Uzbekistan's progress has been observed with a focus on self-reliance in both energy and foodstuffs, and for pursuing a policy of "localization" (i.e. encouragement and protection of domestic production). For any nation, which is in its inception stages, it is vital to follow this policy to enable it strengthen its socio-economic framework to induce long run sustainable productive growth. This is clearly visible with this policy having been successful in increasing value addition in industry from 14% of GDP in 2001 to 22% in 2008, following a decline of the industrial sector from 33% of GDP in 1991. This would also inturn lay down the foundation for Uzbekistan to bring out sustainable economic viability through a free market access in the future.

The Uzbek Model has brought in major progress, which has helped maintain fiscal discipline, resulting in low public debt and budget surpluses every single year since 2003. Economic Surveys clearly bring forth the large increases in net foreign assets, which have been mirrored in the growth of monetary aggregates resulting in continued inflationary pressures faced with raising international food prices. The central bank keeping bank-led global financial crisis and the increase of inflationary pressures, has

managed to tighten monetary policy in 2005-08 via increased deposits from commercial banks, the resumption of the issuance of central bank paper, and the accumulation of government deposits. This led to a decline in growth of reserve money from 88% in 2005 to 37% in 2006 (broad money growth - from 54% to 37%), although this tendency was reversed slightly in 2007 when reserve and broad money grew by 45% and 46% respectively, but in 2008, again, reserve money and broad money declined further to 28% and 35% respectively (WB, 2010). The contraction in money supply in the last 5 years did induce reduced Growth, however improved macroeconomic supervision/stability enabled the central bank to follow a Inflation target policy as one of its monetary policy measures.

It can be clearly seen from the World Bank's country report that the consolidated fiscal position has strengthened in 2008, supported by strong revenue from the commodity sector (in particular with an increase in gold prices and large increases in Gas export prices). It is commendable to note that appropriate implementation of the "Uzbek Model" proposed by the Honorable President Karimov has led to a budget surplus despite global financial recession (since 2007) and despite the government's deliberate policy of reduction of tax burden on the non-commodity sector. The augmented fiscal surplus (i.e. consolidated budget and Fund for Reconstruction and Development) in 2008 as indicated by the World Bank Country Report remains unchanged in 2006-07 at about 5% of GDP, increased to 10% of GDP in 2008. Also, the total budget expenditures has seen a continuous decline as a share of GDP from 36% in 2000-2003 to 32% of GDP in 2008. This is clearly a joint outcome of the Uzbek Model and the Anti-crisis measures adopted by the country.

10.2.1 *"The Uzbek Model"*

The gradual approach to transition and state-led development aimed at import substituting industrialization and energy and food self-sufficiency adopted by Uzbekistan has contributed to enable maintain growth in times of recession and have domestic orientation to wither away contagion effects of Global Financial Crisis. This approach resulted in a less painful economic and social transition than experienced in most countries of the CIS and, in recent years, strong macroeconomic performance. Under the Uzbek Model the government has a policy of high public spending in health, education and road sector to improve standard of living and equitability in the socio-economic societal framework.

The Economic growth of Uzbekistan has accelerated from around 4% in 1996-2003 to over 7% in 2004-06 and to over 9% in 2007-08, largely (but not exclusively) driven by external demand (WB, 2010). This growth performance has been accompanied by an annual per capita GDP growth, from 2% in the late 1990s to 6% in 2004-06, to over 7% in 2007-08, and to 8% in first half of 2009 as a result of boast of international confidence, exports (gold, gas and cotton) and decline in the population growth rate from 2% from 1996-99 to 1.3% between 2000-08. There has been a significant increase of remittances

and other transfers to Uzbekistan at 8-10% of the GDP in 2005-08 from labor migrants in Russia, Kazakhstan and other countries have contributed to the support of living standards of the Uzbek population, particularly among low income and poor families. However, despite the reported high economic growth, employment generation and private consumption have lagged and there has not been a commensurate reduction in poverty in recent years. The national poverty level (defined as percentage of population consuming less than 2,100 calories per person per day) dropped by just 3.9 percentage points from 27.5% of the population in 2001 to 23.6% in 2007. This is the next challenge for the government to enable bring true fruits of the Uzbek Model to the nation and its people for equitable sustained growth.

The Model has been able to provide for the foreign exchange reserves to go more than triple, since 2004 level. The Reserves are more than US$9 billion in 2008 (equivalent of 11 months of next year's imports), which in turn provide for a financial cushion against financial crisis in 2009-10. A zero net external borrowing policy followed since 2001, and total outstanding external debt declined from 64% of GDP in 2001 to 14% in 2008, and projected to decline further to 13% in 2009, and total debt service payments in percent to exports also declined to less than 8% in 2008 are positive outfall of the economic development via the Uzbek Model. Despite some increase in recent years, actual foreign direct investment has remained one of the lowest among the transition economies relative to the size of the economy at 3% of GDP on average in 2006-08.

The "Uzbek model" in expected to formulate a transition from the old command and administrative distribution system to the market driven economic system of governance built on the five renowned principles and strategy of consistent and step-by-step reforms and evolutionary development of state and economy. Key observations marking the success of financial development in Uzbek economy (Karimov, 2010a) are

- volume of capital sufficiency of Uzbek banks exceeds 23 percent, i.e. it is almost as high as three times the international standards set by the Basel Committee.
- 14 commercial banks of the republic, whose assets in total make up more than 90 percent of the banking system, have received the high rating point "stable" from the leading international rating companies such as "Fitch Ratings", "Moody's" and "Standard and Poors".
- total assets of banks are two fold of the amount of funds in the accounts of population and legal entities, while ensuring their full protection and guaranteeing the timeliness of payments. The aggregate current liquidity of the banking system is ten times more the current obligations of banks on foreign payments. In other words, the solid "safety cushion" of the entire banking system is established.
- 240 bankrupt enterprises have been revealed in the country, including the large enterprises, of which at the moment 154 have already been realized to new owners. 86 bankrupt enterprises have been transferred to the balance of commercial banks.

- repay the credit debts to the budget and appears on wages worth total sum 1 trillion UZS, as well as establish on the basis of bankrupt enterprises over 100 new types of productions and additionally create more than 17,000 jobs.
- more than 840 projects were implemented in 2009 as part of the large-scale localization program, which has permitted to increase the volume of manufacturing of products being localized as compared to the year 2008 to 2.3 times.
- production of over 120 new types of goods, from amongst which there are the oil and gas equipment, produce of chemical industry, component parts for the car making industry and many others. 2,000 new jobs have been created as a result of this initiative.
- effort to replenish their circulation funds of the exporter enterprises received soft loans worth in total 233 billion UZS in 2009 itself, which has paved way to prevent shrinking of production due to temporary difficulties in terms of exporting their products.
- benefits on the income tax and single tax payment for the enterprises of the light and food industries specialized in the output of consumer products. In 2009 the single tax payment for the small industrial enterprises was reduced from 8 to 7 percent; the amount of fixed tax for individual entrepreneurs was also reduced on the average for 1.3 times.
- 690 investment projects during 2009 in the framework of the Investment program and sector programs of technical modernization, of which 303 projects were successfully completed. In the whole, 22 large production facilities were commissioned in the country, of which 8 facilities – in the oil and gas, chemical and metallurgical industry, 9 – in the machine building and 5 – in the construction industry.
- implementation of the strategic investment projects on construction of the "Novoangren-Uzbekistan" Power Transmission Line-500 with substation, 165-km-long "Ahangaran-Pungan" trunk gas pipeline through the Kamchik mountain pass, as well as of the "Guzar-Surhan" high voltage power transmission line which has in fact completed creation of the single power and gas systems in the scope of entire country.
- commission of 217 kilometers and undertook a complete overhaul of 538 kilometers of automobile roads as well as 19 bridges. More than 280 billion UZS at the expense of the country's Road Fund were channeled to accomplishment of such works. The projects attracted the soft loans of the ADB worth US$56 million to procure the road construction techniques.
- on improvement of reclamation condition of lands 840 kilometers of collector and drainage networks have been commissioned in 2009 along with 250 drainage wells, 15 units of reclamation pumping stations and constructions. In total 130 billion UZS have been channeled for implementation of projects on improving the reclamation state of lands. As a result the reclamation condition of over 240,000 hectares of irrigated

land has been improved, which allows to raise the level of crop yield and increase the incomes of farmers.

- over 940,000 new jobs were created in 2009, of them around 500,000 in rural areas. More than 390,000 new jobs were created in the sphere of small business, including 270,000 in the services sector.
- apart from the above 130,000 new jobs were created from home-based labor in cooperation with industrial enterprises and carrying out the work at home on contractor basis

The above clearly outline the benefits of the Uzbek Economic Model and the Anti-Crisis Program. These have been well recognized by competent international financial and economic institutions such as the IMF, WB, ADB and several other leading financial institutions of the world through their reports and economic surveys (ADB, 2008; Karimov, 2010a; WB, 2010).

10.2.2 *The Parliament "Oliy Majlis"*

In any democratic economic system, the parliament plays a pivotal role in the socio-economic growth of its people and the economy. It is hearting to see that a special place has been reserved in the lawmaking activity of Oliy Majlis to the issues of normative and legal support of structural transformations in the economy taking place in the country, further to creation of a favorable investment climate, modernization, technical re-equipment of production, as well as development of the country's banking and financial system. During this period of global economic sluggishness the entire package of legislative acts has been adopted, which envisage the consolidation of legal protection of private ownership, establishment of a powerful class of owners in the country, consolidation of farming, ensuring further liberalization of economy, creation of favorable conditions for development of small business and entrepreneurship, as well as establishment of a ramified market infrastructure (Karimov, 2010b).

The smooth process of election to the Legislative Chamber, Jokargy Kenes of Karakalpakstan and local Kengashes (Councils) that took place on December 27, 2009, as well as the runoff elections to those bodies on January 10, 2010 is a clear evidence of the confidence of the Uzbekees in the governance and its growth models. The state of general activeness of voters, state of openness, transparency, observance of norms and requirements of domestic and international legislation, which have taken place in the elections, are noted in those assessments and commentaries, which became yet as another confirmation of the fact that how truly enormous steps our society has made for over the past years on the way of democratic transformations, ensuring freedom of choice for everyone and for establishing strong civil society (Karimov, 2010b). The elections demonstrated the high socio-political culture of the population, growing level of its political and civil self-consciousness, its broad support of our progressive advancement along the way of deepening reforming and modernizing the country. Most importantly, the elections have once again demonstrated that all radical changes and transformations taking place in our state – this is a process, which has acquired an irreversible nature.

The activity of the country's bicameral parliament elected for the first time in 2004 coincided in its time with the important period in our life notable for its deep transformations, dynamic processes of consistent reforming and liberalizing all spheres of political and socio-economic life, democratic renewal and modernization of the country. It is heartening to note that Uzbekistan has adopted more than 250 laws of a profound significance in deepening the socio-political and socio-economic reforms being carried out in the country. Also the implementation of the "Uzbek Model" and the "Anti-crisis program of measures for 2009-2012" directed to minimize the negative consequences of the global financial and economic crisis through the ages of the parliament, allowed Uzbekistan to show surplus instead of budget deficits and increase in the real incomes of the people.

The clear vision of President Karimov and the growth path being observed by Uzbeksitan is expected to fulfill the dream of the leaders and founders of Uzbekistan to build the Nation "*From a strong state towards a strong civil society*", with just social-economic and socio-political reforms. The role to strengthen the role of citizens in governing the country is vital for a robust economic growth and social upliftment in a democratic society.

10.2.3 *Anti-crisis program of measures for 2009-2012*

The Anti-Crisis Action Programme 2009-2012 is a stimulus package introduced in January 2009 to reduce the impact of the contagion impact of global recession on the Uzbek economy with the support to the banking system, export companies (through preferential credit and tax rebates) and employment.

The program focus has been to implement concrete measures to support the exporter-companies in ensuring their competitiveness at foreign markets given the rapid worsening of current conditions, creation of additional incentives for exports, in particular:

- allotting them the privileged credits to replenish the circulation funds with a term of until 12 months on the rate which does not exceed 70 percent of the refinancing rate of Central Bank;
- relieving the companies with foreign investments, which produce the finished goods, from levying all types of taxes and duties to the budget but for a value added tax (till 2012);
- restructuring the sum of overdue and current debts on the bank credits and writing off the penalty fees on the payments to budget, and rendering other no less important benefits and preferences." (MFA Uzbekistan, 2009)

In addition, support for food and consumer goods producers was envisaged through the programs of broad system of incentives for the local producer-companies for production of food and non-food consumer goods (until January 1, 2012) with the following tax and customs benefits are offered

- decreasing the single tax payment rate by 50 percent to micro-firms and small companies, which process meat and milk with a purposeful channeling of the released funds to undertaking a technical re-equipment and modernize production;
- relieving companies, which produce particular types of finished non-food goods, from paying an income and property tax, single tax payment for micro-firms and small companies.

The sources of financing for the Anti-Crisis Program was proposed to be as follows

- own financial assets of companies and enterprises for a total amount of US$ 8.2 billion
- credits of the Reconstruction and Development Fund[20] of the Republic of Uzbekistan worth US$ 2.5 billion dollars and
- foreign investments and credits totaling US$ 13.5 billion.

XII. Conclusion

India has made enormous strides in the last 71 years of India's having regained independence. India enjoys a rich heritage, intense diverse cultural and socially rich setup. Economic growth and development in India, since 1980, has been amongst the fastest in the world; social indicators for literacy, education enrollment, disease and mortality, and gender have steadily improved; and poverty has fallen since the mid-1970s (World Bank, 2000). All this is despite having a population base of around 1.3 billion people, which had been growing at the given Hindu growth rate of 2.3% till 2010 and at 1.7% henceforth. India today stands to be THE Youngest Nation globally with over 742 million people (71% of total population) below 35 years of age and over 65% of young working population (between 15-45 yrs of age). Various international agencies have forecasted India to be amongst the top three (3) economic nations by 2015-2025 (Agarwal, 1994, 1995, 2001; CFO Survey, 2018; Jaitley, 2018; Agarwal, Agarwal and Agarwal, 2018). With these, we hope to achieve the dream vision pictured by our Honorable President APJ Abdul Kalam jee in his work "India 2020" and our Honourable Prime Minister Narrendra Modi in his speeches since 2014. All this has been made possible only because of the dedicated and law abiding citizens of this great nation, who are the soldiers of the socio-economic growth and the vision of our leaders who are the pillars behind success of our sustained democratic progressive Bharat.

India has also developed a diversified industrial base and a relatively large, robust and sophisticated financial sector. India is known in the international spheres for its technical human resource, financial framework, manufacturing capabilities and the software sector. The FDI Flows on monthly basis in India have increased from US$ 0.2 billion/month (in 2000-01) to US$ 1.3 billion/month in 2010-11 to US$ 5.5 billion/month in 2017-18. The FDI Flows in 2018-19 are expected to be around US$ 72 billion (i.e. US$ 6 billion/month). These successes have taken place against a backdrop

of India being the largest democracy of the world with a significant degree of political freedom and stability. It is a matter of pride that we have had the successful conduction of election ever since its independence in 1947. The total number of votes in India (671 million i.e. over 62% of population), which far exceeds the total population of America and it also exceeds the total population of the whole of Europe along with a participation of over 200 political parties (largest multi-party system base observed by any democratic country globally).

India's re-entry into the globalized world and sustained growth in the last decade (especially last 4 years) has opened up immense possibilities for becoming a truly favoured global democratic nation, economy and market. India has benefited from the old heritage (dating back to over 10,000 years), traditional value system and economic and societal norms. These have empowered India and Indians to accommodate and adjust with changing times and scenarios over the history. We have seen times when there was free movement of labor and capital in the golden arena of our nation Bharat. Today's globalization does encompass part of it, wherein capital and trade is certainly an issue. The gradual privatization and the consequent need to regulate investments; the growing importance of private investment and the emergence of the mixed-market economy are some of the characteristics of the political economy of India resulting from its engagement with the global economy in the 1990s. If we are really talking of a globalized world, then we need to free ourselves of these barriers and allow the market mechanism to freely flow and be part of this large society.

It has been widely observed and projected by numerous research studies that globalization and financial developments in the world economy have altered the economic frameworks of both developed and developing nations in ways that are difficult to comprehend. The persistent rise in the dispersion of current account balances of the world as a whole, wherein the sum of surpluses match the sum of deficits has grown substantially since the World War II (Agarwal & Agarwal, 2001; Agarwal, 2004; Agarwal and Agarwal, 2017; Agarwal, Agarwal and Agarwal, 2018). These global trends has led to creation of extensive levels of in-equalities of income, gender disparities, gender pay differences, civil disorders, un-employment and lowering standard of livings enhancing poverty and deprivation Globally. India has tried to shield itself from such disorders; however the 1% of Global population having 50% Global wealth (Nov 2017) is a clear indication of challenges that lie ahead. In India it is estimated that 57 Indian Billionaires own wealth equal to Bottom 70% of India's Population (Credit Suisse, Nov 2016). The Government today is perplexed with this challenge to serve the society and induce equitable growth through creation of Jobs & Growth. The initiatives undertaken by the government under the "Make in India" campaign and the 21+ programs launched and monitored by the Prime Minister Narendra Modi himself in the last 4 years to induce financial inclusion, enhance banking, spread digital dividends, control inflation &

money supply through drives like demonitisation, jan-dhan yojna, interlocking AADHAR and GST are expected to yield long term fruits which would be visible and appreciated in the coming 10 years. The mass support for most of these drives is a clear evidence of the faith and support by the people of India to foster these achieved.

We feel that regaining lost glory of mutual respect in jointly shouldering towards a peace loving harmonious growing global society is the demand of the hour. While addressing various Parliamentary, Governmental and International Agency forums we have stressed on better ties between India, Europe and the global village. We have also stressed on the need to address some of the key issues before synergsing ties to improve confidence, maintaining positive outlook and realign political will for developing a progressive inter-regional focus for business, trade and societal interactions.

The efforts by central banks, regulatory bodies, governments and international agencies around the world to increase the availability of liquidity have contributed to tentative improvements in credit market functioning. However, the continuing volatility of markets and recent indicators of economic performance confirm that challenges remain. US would need to undertake major hard steps to rectify its financial turmoil, which has accumulated for over 2 decades and is having spill-over effects building costs for other nations (Agarwal & Agarwal, 2001; Agarwal, 2007). Hence policymakers need to monitor developments closely, and stand ready to take additional hard steps should conditions warrant. We feel that close working relationships between central banks, governments, international agencies and the academic world considering World Economy as a single entity and rising about country specific selfish interests can help build a Sustainable Financial World tomorrow.

Conservative economists, since Adam Smith, have promoted the idea that a free-market economy that has minimized government regulation and more dependence on the forces of supply and demand, which is considered to be the most reliable and efficient economic system. Yet, the 1990s financial crises (Agarwal and Agarwal, 2001), stock market crashes, scams (corporate/ political) and the Global Financial Turmoil of 2007-08 have lead to economic contractions. These events have not only devastated countries around the world but also increased social tension and disparities. The frequency and extent of these financial debacles have led policymakers, regulators, economists, journalists, market operators and the masses to call for reforms in the form of a new "international financial architecture & a self sufficiency model" with improved financial literacy.

Financial literacy has become a more frequently discussed topic, particularly in the United States (Fromlet, 2008). The in-appropriate use of Derivatives and the Global Financial Turmoil supports the view that Financial literacy amongst the households, corporate and policy makers has not been appropriate. Hence there is further need to have an increased

focus on financial literacy which must be regarded as a logical development, since conditions for understanding financial markets have changed quite dramatically in the age of accelerating globalization (Fromlet, 2008 ; Agarwal, 2008b). Fromlet's survey findings also indicate that markedly better financial literacy has the capacity to improve macroeconomic growth on three grounds. The first is related to modern growth theory and the positive impact of investment in human capital on GDP. The second comes via an improved balance between savings and consumption. The third comes via avoiding bubbles and financial exuberance as a consequence of clearly increased financial literacy, a positive contribution to economic growth.

Agarwal, Yadav and Iyer (2010) Goal Programming model is identified as multi-criteria technique providing satisfying solutions that overcomes the deficiency of the single objective framework using accounting proxies for multiple objective framework. The steps involved in the development of a firm specific capital structure decision making technique is: (a) management participation; (b) analysis of objectives, goals and policies using accounting proxies; (c) formulation of a goal programming model; (d) testing the model and solution and (e) final implementation of the solution. The model allows simultaneous solutions to a system of complex multiple objectives. It utilizes an ordinal hierarchy among conflicting multiple goals where low order goals are considered after higher order goals are satisfied or have reached the desired limit. There is an inbuilt flexibility in the model. The Goal Programming Model for multi-objective capital structure decision using accounting proxies has been tested on an Indian Agricultural Firm. The model supports the fulfillment of multiple objectives and constraints simultaneously. The model may prove to be highly beneficial for firms in achieving an optimum or satisfying practical solution to capital structure decisions incorporating multiple goals in a systematic and scientific way in today's complex and dynamic business world with accounting information.

Many of the positive outlays identified on November 9th, 2017 of this demonetization includes rise are per capita income to double of its current level in 2-3 years; replenishment of banks with fresh liquidity resolving emerging liquidity crunch (already achieved) and NPA problems in the banking system (already reduced); strengthening value of Rupee value; increase in FDI and FII Investment in the country; increase in foreign exchange reserves; inflation likely to slide down gradually (already observed); corrections in the stock markets and realty sector (already done, more ahead); enhanced confidence in the currency and global ranking and Money supply brought under control (already done). Some difficulties to be faced in the short run are availability of petty cash; even today not all citizens are banked; realty sector may see a further downturn; migrant workers and domestic tourists would face difficulty in short run; GDP is expected to be sluggish in the short run (already seen last Qtr of 2016-17), profitability of small businesses may be hit adversely; high denomination notes of ₹ 2000 are expected to go into vaults of influential and hoarders of black money.

It is strongly felt that the decision pronounced by PM Narendra Modi is the boldest decision in the right direction and he deserves all praise for this decision for inducing Financial inclusion, Banking and digital dividends to the poorest of the poor and the deprived section in Independent India post 1947. The necessary support to policy changes, trust and confidence hold the key to Growth and Prosperity of the people of India.

The proposed work provides a General Theory of Employment, Wealth and Efficient labour market through setting up of a National Labour Exchange. National Labour Exchange can be a vehicle of facilitating information for available jobs i.e. employment opportunities at given return to labour and availability of labour offering the services for a return based on their value addition. The proposed work will fill the exiting gap of asymmetrical information. The paper proposes setting up of a National Labour Exchange along the lines of National Stock Exchange, Bombay Stock Exchange and Commodity Exchanges Worldwide in order to promote efficiency in the labour market, full employment and generating wealth and positive contributions to GDP. The paper also considers that Labour as a valuable Resource and a Wealth of the Nation, having potential to generate more wealth. The paper opposes the concept of Wages or Price of Labour as in classical economics, but supports Ricordo's theory of Value and Laissez faire through efficient labour market. The paper opposes Keynesian theory outlining Government Intervention to generate Employment though Monetary Policy changes and Fiscal Policy as Keynesian theory based Book on The General Theory of Employment, Interest and Money is a product of Great Depression of 1931-36 not reflecting normal economics and business conditions in the economy when business failed and labour laid off in abundance. The paper critically evaluates various theories on Labour.

The proposed work would induce competition both among employers and labour to maximize the productivity, maximizing wealth, GDP and social welfare. Labour, instead being idle or underemployed would prefer to pick up a job with lower return. It would provide transparency, avoid exploitation of labour, Efficiency in labour market would help foreign investors, to know about the skill, experiences, qualifications and desired return of labour in a country. This is in turn will remove any fears regarding the availability of labour in a given industry.

The payment to labour should be based on return to labour on the basis of value addition, rather than as wages as is being currently done. Payment of wages is exploitative on one or the other ground. Labour is resource (wealth) as much as land or capital and deserves return to labour. The proposed work states that the wages paid to labour should be replaced by "*Return to Labour*" based on value addition. Return to Labour would be automatically directly linked to productivity. It would give dignity and enhance or reduce return. The proposed work would create one NATIONAL market for labor exchange, uniting the country and its countrymen to one Common Working Platform removing the discrimination of regional

imbalances, labor immobility and information asymmetries that create distortion in the demand or supply of labor. It would encourage labour at all levels to acquire certificates, degrees, skill and focus on maximizing productivity so as to quality for a composite score to be high to get better return on jobs and choice of firms.

The proposed Model of creating efficient Labour Market through National Labour Exchange will facilitate an automatic way for Full Employment, generating wealth for the nation, firm and Labour, easy access to information about the availability of Labour (man hours) and jobs. It would also help save employment costs in a Market Driven Economic System with Asymmetric Information. National Labour Exchange as proposed would also help Rating Certificates, Diplomas, Degrees, skill development and experiences based on Scores and would facilitate transparency in the Efficient Labour Markets. It would automatically adjust the return to labour based on value addition and economic and business conditions avoiding the problems of laying off. Efficient Labour Market would facilitate perfect or nearly perfect mobility of labour through National Labour Exchange.

The World Economy is moving towards a new economic order. With the strong presence of US, Europe, Russia, China and India as key role players in the global economic framework, we may see a re-emergence of a multi-polar economic globe. The difference this time will be that each of these nations will have their edges different from the other. This is unlike the time when it was a bi-polar world with US and Russia being at the helm of affairs based on military might. What seems to be emerging as edges within these nations is US for its high-end technology & military structures, Europe for its financial strengths; Russia for natural resource extraction and military structures; China as a production hub and India as a Market. This would distribute the production centers, the market centers, the financial centers, the military structures to different regions within the World Economy. If we are really looking at building a stable and growth oriented future for Nation's in the global village, then we need to free ourselves of barriers and allow the market mechanism to freely flow and be part of this large society.

In our service to the nation as a teachers in the last 20 years addressing issues and forums on TV; Newspapers; Radio; addressing Parliaments; International Agency; various Governments/Ministries and University conclaves based on my experience in academics, research, administration, we feel that India can foster the desired objectives in policy making and implementation with a dedication work force with agriculturists as their backbone, to enable strive foster the desired change and move by the government to induce Jobs and Growth orientated economic frameworks.

The initiative of the government to create Digital Frameworks and conversion of informal economy to the formal setup via adoption of series of digital frameworks and transfer facilities for social programs is commendable. Currency and the interplay between secure digital platforms

play a critical role in the adoption of transparent and efficient banking.The proposal to set up of M5 as Money Supply with Crypto-Currency along the lines of inclusion of other currency products developed in the last 50 years in order to promote efficiency in the money markets, transactional efficiency and generating wealth along with positive contributions to GDP and people at large. The work by Agarwal, Agarwal, Agarwal and Agarwal (2018) considers that Money as a valuable Resource and a Wealth of the Nation, having potential to generate/mobilize more wealth. The paper proposes that given the emergence of digital modes of money transactions, there is an urgent need for creation of legitimate Crypto-Currencies by National Governments to induce confidence and laissez faire through transactional efficiency in money market. Government Intervention (or Central Banks) to generate the Crypto-Currency is the need of the hour and critical for tomorrow's normal economic and business conditions in the economy when businesses and labour market source are global and looking for currency efficient sources.

The proposed Model of creating efficient Money Market through modeling of M5 will facilitate an automatic way for transactional efficiency, generating wealth for the Nations, Firms and people-at-large, through easy access to currency and opportunities for jobs and growth. It would also help save currency costs in a Market Driven Economic System with Asymmetric Information. The "New Avtar" of Money in the form of Crypto would witness the change the way money (currency) has looked traditionally for centuries in the form of gold, silver, leather, wood, metal, paper, plastic, stone and many others to a faceless virtual fully fractional form, but only when launched by Nations (via their Central Banks). Given the emergence of Crypto-products in the informal sector with multiple players, it has become difficult for National Governments to regulate and calibrate the supply of money and its effects through Monetary Stabilization measures adopted by them, as these crypto-products allow billions/trillions of money be transacted globally without any checks and balances. More than the benefits, these products are emerging as threat to National Security; Individual's Wealth and Nations apart from the ills any speculative product brings with it to meet the needs of Greed of a specific group of people and rouge identities. Hence, the need for governments to act fast and consider to induce this financial innovation (crypto-currencies) as a currency of tomorrow into its basket of currencies, as done with various other monetary products in the last 6 decades (Agarwal, Agarwal, Agarwal and Agarwal, 2018)

We would like to lay stress again, that we first and foremost need to take care of the social security facilities/non-conforming systems existing in the economy towards the fulfillment and maintenance of the Senior Citizen's Dignity, Environment and a Social equilibrium in the society if we truly want to build Nations' future. Today the World is looking at India, in the spin to march ahead together having a favourable outlook to investors bringing Investment to provide development, employment and growth

opportunities for both India and Indians. Our PM Modi's endeviour to foster opportunities of a bright future for Indians and the Senior Citizens Dignity has been a key concern to induce desired growth in the economy. This needs to be attained by inducing efficiency and transparency in the governance; system of continuous healthy dialogue between the government and the people; respect for law through strengthening of education system; and empowerment of Women of India who nurture our future as the true voice of tomorrow. This will also ensure the re-emergence of the feeling of Sone Ki Chidiya (Golden Bird) in the hearts of every Hindustani for a better happy and healthy living in Bharat.

Notes

1 Tyebjee and Bruno (1984)
2 Tyebjee and Bruno (1984)
3 Tyebjee and Bruno (1984)
4 Tyebjee and Bruno (1984)
5 Tyebjee and Bruno (1984) ; Gompers (1997)
6 Kortum and Lerner (2000) ; Ljungqvist and Lu (2004)
7 Bygrave, Hay, Ng and Reynolds (2003)
8 Maula (2005)
9 Gompers and Lerner (2001)
10 Gompers and Lerner (1999) ; Hochberg, Ljungqvist and Lu (2004)
11 Zahra, Yavuz and Ucbasaran (2006)
12 Media Coverage of the IIF Study

i. https://www.prlog.org/12634492-national-labour-exchange-mooted-for-efficient-labour-mrkts-full-employment-maximising-wealth-iif.html
ii. https://www.pressreader.com/india/the-new-indian-express/20170419/282415579160522
iii. http://www.openpr.com/news/508806/National-Labour-Exchange-for-Efficient-Labour-Market-Full-Employment-and-maximising-wealth-IIF-Study.html
iv. https://www.epressrelease.org/national-labour-exchange-for-efficient-labour-market-full-employment-and-maximising-wealth-iif-study/
v. http://eprnews.com/national-labour-exchange-mooted-for-efficient-labour-mrkts-full-employment-maximising-wealth-iif-111945/
vi. http://newsliner.in/news/National-Labour-Exchange-for-Efficient-Labour-Market-Full-Employment-and-maximising-wealth-IIF-Study-89576213
vii. IMF ask India to go for Labour Market Reforms (WEO) : Mr. M Rajendran, Senior Business Editor, New Indian Express Interviews IIF Prof. Aman Agarwal [Professor of Finance and Director, Indian Institute of Finance (www.iif.edu) and Executive Editor, Finance India (www.financeindia.org)] while he is visiting USA towards the invite for IMF-World Bank 2017 Annual Spring Meeting in Washington DC. http://epaper.newindianexpress.com/1176369/The-New-Indian-Express-Chennai/19042017#page/15/1

13 Vineeta Rai, Chairperson, Provident Fund Regulatory and Development Authority (PFRDA) interview in Asia Insurance Post, June 2004
14 A life annuity is an insurance product that pays out a periodic amount for as long as the annuitant is alive, in exchange for a premium
15 An extensive analysis on the Strengths, Weaknesses, Opportunities and Threats before an educational institution and setup. The understanding of strengths and weaknesses helps formulate a capacity-building. This self-assessment approach of an educational institutional setup enables appropriate diagnosis and measure the control over the assessment.

16 The second stage in this is to conduct self-evaluation process, assess or engage an external institution to evaluate the performance or competence of the institution. This is also done through ratings, rankings or accrediting bodies at national and international levels. This process enhances the insight on the strengths, weaknesses and opportunities before an institution. It also gives a new sense of direction., promoting inter and intra institutional interactions and directions to the institution under evaluation.

17 It is for the betterment of any setup, that there is natural, equal and sustained growth. But nature plays its own role. Differentiation is the rule of nature and the survival of the fittest is the game.

18 This enables bring in quality promotion, develop a network to promote educational enrichment and have collaborations for growth and exchange.

19 1 Crore (1,00,00,000) = 10 Million ; 1 Lakh (1,00,000) = 0.1 Million ; 1 Million (1,000,000)= 0.1 Crores ; 1 Billion (1,000,000,000) = 100 Crores ; 1 Crore (1,00,00,000) = 100 Lakh

20 The Fund was established in 2008 with an authorized capital of about US$ 3.2 billion. The Fund plays a very important role in implementing the strategically important projects along structural transformation and modernization of economy, as well as establishment, firstly, of the production infrastructure. In the nearest perspective we are going to take the Fund's assets up to US$ 5 billion. For over the past two years the Fund allocated credits worth more than US$ 550 million to finance and co-finance tens of large industrial and infrastructure facilities.

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APPENDIX I
Industry Composition of ET 500 Companies

S No.	Industry Composition	Number of companies in each industry	Percentage of the industries in the sample survey
1	Agriculture	26	5.20
2	Capital Goods	46	9.20
3	Chemical & Petrochemical	35	7.00
4	Consumer Durables	18	3.60
5	Diversified	12	2.40
6	Finance	56	11.20
7	FMCG	25	5.00
8	Healthcare	27	5.40
9	Housing Related	41	8.20
10	Information Technology	33	6.60
11	Media & Publishing	6	1.20
12	Metal, Metal Products & Mining	32	6.40
13	Miscellaneous	30	6.00
14	Oil & Gas	15	3.00
15	Power	9	18.00
16	Telecom	12	2.40
17	Textile	21	4.20
18	Tourism	3	0.60
19	Transport Equipments	40	8.00
20	Transport Services	13	2.60
	Total	500	100.00

APPENDIX II
Summary of 10 Years LTD for 19 Industries

S.No.	Industry	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	Min	Max	Average	Range
1	Agriculture	0.73	0.69	0.85	0.97	1.13	1.27	1.35	1.58	1.6	0.81	0.7	1.6	0.91	1.1
2	Chemical & Petrochemicals	0.58	0.94	7.4	7.45	2.11	1.49	1.07	1.2	1	0.94	0.6	7.5	6.87	2.42
3	Power	0.59	0.51	0.49	1.66	1.08	1.57	1.7	1.55	1.36	1.36	0.5	1.7	1.2	1.19
4	Transport Services	1.17	0.96	1.78	6.74	3.02	1.74	1.53	2.15	0.81	0.67	0.7	6.7	6.06	2.06
5	Consumer Durables	0.61	0.61	0.75	0.75	0.71	2.4	1.4	1.54	1.31	1.11	0.6	2.4	1.8	1.12
6	Capital Goods	0.57	0.64	0.67	0.77	0.73	0.72	0.62	0.61	0.64	0.61	0.6	0.8	0.21	0.66
7	Diversified	0.86	0.82	0.78	0.8	0.83	0.75	0.9	1.16	1.86	1.72	0.8	1.9	1.1	1.05
8	FMCG	0.51	0.49	0.35	0.34	0.5	0.49	1.62	0.37	0.36	0.33	0.3	1.6	1.29	0.54
9	Healthcare	0.51	0.44	0.35	0.39	0.44	0.44	0.38	0.4	0.53	0.66	0.4	0.7	0.31	0.45
10	Housing Related	1	1.11	1.56	1.31	2.06	1.7	1.28	1.45	2.66	1.07	1	2.7	1.66	1.52
11	Information Technology	0.26	0.29	0.31	0.44	0.3	0.21	0.27	0.27	0.38	0.33	0.2	0.4	0.22	0.31
12	Media & Publishing	0.35	0.41	0.51	0.48	0.34	0.41	0.39	0.58	0.56		0.3	0.6	0.25	0.45
13	Metal, Metal Products & Mining	1.36	2.48	0.92	1.24	3.59	3.6	1.61	1.16	1.16	0.74	0.7	3.6	2.86	1.79
14	Miscellaneous	0.58	0.68	0.79	0.77	0.8	0.91	1.07	0.77	0.68	0.58	0.6	1.1	0.49	0.76
15	Oil and Gas	0.48	0.52	0.59	0.65	1.03	0.98	0.7	5.63	0.73	0.5	0.5	5.6	5.16	1.18
16	Telecom	0.66	0.54	0.56	1.36	2.02	0.97	1.19	1.02	1.01	1.22	0.5	2	1.49	1.05
17	Textiles	1.04	1.62	0.97	0.67	0.66	0.77	0.95	0.89	0.87	0.84	0.7	1.6	0.95	0.93
18	Tourism	1.09	1.08	1.03	0.83	0.82	0.96	1.15	1	0.86	0.73	0.7	1.2	0.42	0.96
19	Transport Equipments	0.6	0.62	0.58	0.63	0.62	0.57	0.58	0.63	0.61	0.53	0.5	0.6	0.1	0.59
	Min	0.26	0.29	0.31	0.34	0.3	0.21	0.27	0.27	0.36	0.33				
	Max	1.36	2.48	7.4	7.45	3.59	3.6	1.7	5.63	2.66	1.72				
	Range	1.09	2.18	7.09	7.12	3.29	3.39	1.42	5.36	2.3	1.39				
	Average	0.71	0.81	1.12	1.49	1.2	1.16	1.04	1.26	1	0.82				

APPENDIX III
Summary of 10 Years TDE for 19 Industries

S.No.	Industry	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	Min	Maxc		Range Average
1	Agriculture	1.1	1.06	1.43	1.67	1.88	2.06	2.06	2.18	2.14	1.41	1.06	2.18	1.12	1.7
2	Capital Goods	0.9	1.02	1.08	1.16	1.09	1.11	0.98	0.94	1	0.96	0.9	1.16	0.26	1.02
3	Chemical and Petrochemicals	0.96	1.51	11.13	12.04	2.81	1.97	1.76	1.87	1.46	1.34	0.96	12.04	11.07	3.69
4	Consumer Durables	1.49	1.47	1.62	1.48	1.3	3.04	1.96	2.07	1.94	1.87	1.3	3.04	1.74	1.82
5	Diversified	1.23	1.22	1.2	1.18	1.24	1.18	1.21	1.51	2.32	2.24	1.18	2.32	1.14	1.45
6	FMCG	0.77	0.8	0.74	0.95	1.01	0.99	2.02	0.74	0.67	0.66	0.66	2.02	1.36	0.93
7	Healthcare	0.72	0.64	0.55	0.6	0.67	0.67	0.57	0.58	0.75	0.91	0.55	0.91	0.36	0.67
8	Housing Related	1.24	1.4	1.88	1.57	2.32	1.93	1.51	1.71	2.88	1.3	1.24	2.88	1.64	1.77
9	Information Technology	0.38	0.39	0.42	0.64	0.49	0.36	0.42	0.5	0.74	0.54	0.36	0.74	0.38	0.49
10	Media & Publishing	0.44	0.56	0.63	0.55	0.39	0.46	0.43	0.65	0.73		0.39	0.73	0.34	0.54
11	Metal, Metal Products & Mining	1.29	1.96	1.16	1.5	3.57	4.18	1.6	1.08	1.21	0.83	0.83	4.18	3.35	1.84
12	Miscellaneous	1.19	1.29	1.43	1.37	1.32	1.36	1.41	1.19	1.12	0.93	0.93	1.43	0.51	1.26
13	Oil and Gas	0.61	0.65	0.71	0.89	1.11	1.18	0.94	0.83	0.89	0.64	0.61	1.18	0.57	0.84
14	Power	1.06	0.77	0.78	1.89	1.37	1.88	2.04	1.86	1.59	1.54	0.77	2.04	1.26	1.48
15	Telecom	0.8	0.64	0.6	1.42	2.8	1.36	1.61	1.41	1.48	2.07	0.6	2.8	2.2	1.42
16	Textiles	1.58	2.48	1.55	1.13	1.05	1.22	1.46	1.38	1.33	1.19	1.05	2.48	1.43	1.44
17	Tourism	0.44	0.55	0.82	0.74	0.54	0.41	0.29	0.24	0.16	0.14	0.14	0.82	0.69	0.43
18	Transport Equipments	0.93	0.93	0.85	0.88	0.92	0.89	0.88	0.92	0.92	0.8	0.8	0.93	0.13	0.89
19	Transport Services	1.31	1.05	1.89	6.82	3.17	1.85	1.63	2.25	0.92	0.68	0.68	6.82	6.14	2.16
	Min	0.38	0.39	0.42	0.55	0.39	0.36	0.29	0.24	0.16	0.14				
	Max	1.58	2.48	11.13	12.04	3.57	4.18	2.06	2.25	2.88	2.24				
	Range	1.2	2.09	10.71	11.48	3.18	3.82	1.77	2.01	2.72	2.1				
	Average	0.97	1.07	1.6	2.02	1.53	1.48	1.3	1.26	1.28	1.11				

APPENDIX IV

Industry wise Normal Distribution Test Results for LTD

LTD	AGRI	CG	CP	CD	DIV	FMCG	HC	HR	IT	MP
Jarque Bera	0.91	**0.65**	3.13	2.26	2.74	18.95	2.23	2.24	0.87	0.77
Probability	0.63	**0.72**	0.19	0.32	0.25	0	0.33	0.33	0.65	0.68
Anderson Darling (A2)	**0.33**	**0.32**	1.75	0.59	1.35	2.06	0.49	0.48	**0.36**	**0.28**
Probability	**0.44**	**0.45**	0	0.08	0	0	0.167	0.175	**0.35**	**0.53**

LTD	MMMP	MIS	OG	PO	TELE	TEX	TSM	TE	TS
Jarque Bera	1.68	0.74	21.17	1.25	1.26	6.93	**0.69**	1.51	1.06
Probability	0.43	0.69	0	0.53	0.53	0.03	**0.71**	0.47	0.01
Anderson Darling (A2)	0.87	**0.34**	2.41	0.66	0.38	0.41	**0.25**	0.42	1.11
Probability	0.01	**0.41**	0	0.055	0.32	0.26	**0.65**	0.26	0

APPENDIX V

Industry wise Normal Distribution Test Results for TDE

TDE	AGRI	CG	CP	CD	DIV	FMCG	HC	HR	IR	MP
Jarque Bera	13.6	2.28	1.9	1.33	**0.7**	2.8	1.5	**0.69**	**0.69**	7.87
Probability	0	0.32	0.39	0.52	**0.7**	0.25	0.47	**0.71**	**0.71**	0.02
Anderson Darling (A2)	43	**0.23**	1.85	0.66	1.69	1.41	0.42	0.43	0.42	**0.28**
Probability	0.23	**0.73**	0	0	0	0	0.25	0.24	0.24	**0.52**

TDE	MMMP	MIS	OG	PO	TEL	TS	TEX	TSM	TE
Jarque Bera	0.63	1.9	13.6	2.28	1.9	1.33	**0.67**	2.8	1.5
Probability	0.73	0.39	0	0.32	0.39	0.52	**0.72**	0.25	0.47
Anderson Darling (A2)	1.05	0.37	**0.32**	0.44	0.41	0.83	**0.21**	0.55	1.06
Probability	0	0.34	**0.47**	0.22	0.27	0.02	**0.79**	0.11	0

APPENDIX VI
TDE Industry Constraint Equations (19 Industries)

S.No	Industry	TDE Constraint Equation	Explanatory Power			Variables Positively Correlated with (r=0.90) with TDE	Variables Negatively Correlated (r=-0.90) with TDE
			R	R^2	S.E.		
1	Agriculture	TDE = 1.071 + 0.979 LTD - 0.0007 PBIT + 0.003 REFX +0.002ROGPBIDT+0.002ROGGB +. 040 CEFX +.001ROGCE + .001 FAR	1	1	79	PBDTM,CPM,PAT,PBT, PBDT,MC,CP,LTD	None
2	Capital Goods	TDE = 0.754+0.001ROGMC -0 .002CFFF + 0.014 PBIDTMIR,CEXFX,DR,	0.976	0.953	0.02048	CFFO,EP,ROGCOP,ICR,OI, PBIDTM,CV, PBDTM,ROCE,PBITM,CPM, LTD,CEFX and PO	VOTA
3	Chemical and Petrochemicals	TDE= -2.295 + 1.502LTD - .000ROGCP + .003CE	1	0.999	0.1216	LTD	None
4	Consumer Durables	TDE= .397 + 1.21LTD + .028 OI -.013CEPS -.002PBT	1	0.999	0.01933	LTD	None
5	Diversified Industry	TDE= .530 + 1.087LTD - .073CR + .008EPS	0.999	0.998	0.02427	LTD	None
6	FMCG	TDE= 1.038 + .092VOGB -.008APATM	1	0.999	0.08282	REXFX,ROGNS,ROGTA,IR, ROGGS,REFX,CEXFX,ICR,REXFX , MC,PAT,PBT,CP,NWCPBDT, DIV,PBIT,PBIDT,NET,CFFO, CL, CA,CE,OI,COP,VOGB,NS,VO,GS, CEPS,GBTAL,SC,PBITM,EPS,ROCE, PO,PBIDTM,DV,BV,CR,DR,FAR, EP,CV,VOTA and LTD	CFFF, CFFI
7	Healthcare	TDE= .142 + 1.155 LTD	0.993	0.987	0.0122	LTD	None
8	Housing Related	TDE= .188 + 1.022LTD +.000ROGMC	0.999	0.999	0.031071	LTD	PBIDTM
9	Information Technology	TDE= -.070 + 2.069LTD - .001DIV	0.966	0.934	0.0335	None	None
10	Media and Publishing	TDE=.434 +.866LTD + .139CR + .005CV + .000PBT-.001DV + .000EP	1	1	0.0007	LTD	None
11	Metal and Metal Product	TDE= .045 + 1.098LTD+ .001ROGGS +.000ROGPBIDT+.002ICR+.000ROGGB-.002CV	1	1	0.0049	LTD	None
12	Miscellaneous Industry	TDE = 1.470 - .062APATM + .001ROGMC	0.949	0.901	0.0497	None	None
13	Oil and Gas Industry	TDE= 1.715 - .004ROGPBDT	0.868	0.754	0.05673	LTD	None
14	Power	TDE =0.523+0.962LTD - 0.3.1CPM+ 0.021PBITM	0.999	0.999	0.0183	LTD	None
15	Telecom	TDE = -1.168+ 1.525LTD -0.361VOGB + 0.000PAT +.001ROGPAT	1	1	0.0163	LTD	None
16	Textile	TDE = -0.176+1.493LTD+0.001ROGMC+0.031FAR	1	0.999	0.01369	CEPS,BV,EPS and LTD	
17	Tourism	TDE= 0.015 + 1.049LTD	0.999	0.998	0.01134	LTD	None
18	Transport Equipments	TDE =0 .196 + 0.1073LTD+ .0.004CV - .014CPM	0.968	0.937	0.01185	None	None
19	Transport Services	TDE= -.134 + 1.047LTD + 0. 005DV	1	1	0.005032		
ROGMC,LTD		None -0.001ROGMC+0.005ROCE					

APPENDIX VII
LTD Industry Constraint Equations (19 Industries)

No	Industry	LTD Constraint Equation	Explanatory Power R	R^2	S.E.	Variables Positively Correlated (r=0.90) with LTD	Variables Negatively Correlated (r=-0.90) with LTD
1	Agriculture	LTD = -.812 + 1.085 TDE + .001 NWC -.016DV+.013PO + .000MC + .001CFFI + 010PBIDTM+.008CEFX	1	1	0.0012	TDE	APATM
2	Capital Goods	LTD = .304 + .000PO - .571TDE -.157CR	1	1	0.01146	CFFO, EP, CFFF, ROGCOP, ICR, OI, IR, CEXFX, DR, PBIDTM, CV, PBDTM, ROCE, PBITM, CPM, CEFX, PO and TDE	VOTA
3	Chemical and Petrochemicals	LTD = 1.574 + .664TDE - .000ROGCP - .002CE	1	0.999	0.08091	EP, ICR, GB, CPM, APATM, REFX, ROGNS, ROGGS, PBDTM, CFFO, ROGMC and TDE	None
4	Consumer Durables	LTD= 1.509 + 1.001TDE +.035VOGB +.000REXFX	1	0.996	0.0417	TDE	None
5	Diversified Industry	LTD= -.133 + .0839TDE -0.002CFFO +.001ROGCP + .001RONW + .001ROGGS	1	1	0.00731	TDE	None
6	FMCG	LTD= -.013 + .582 TDE	0.99	0.982	0.1774	ROGGS, ROGPAT, IR, REFX, CEXFX, ICR, REXFX, PAT, MC, PBT, CP, PBDT, PBIDT, CFFO, NWCCL, NET, CA, OI, SC, CEPS, COP, VOGB, NS, VO, CE, DIV, PBIT, GS, EPS, GB, ROCE, TAL, PBITM, BV, PBIDTM, DV, PO, DR, FAR, EP, CV, VOTA,	CFFF, CFFI
7	Healthcare	LTD= -.046 + .857 TDE -.004ROCE	1	1	0.00055	DR, CFFI, CEPS, VOTA, PO, CR, BVVOGB, FAR and TDE	None
8	Housing Related	LTD= -.179 + 0.976TDE + 0.000ROGMC	1	0.999	0.03036	PO, ROGPAT, BV, ROGCE, CFFI, VOTA, ROGNW and TDE	PBIDTM
9	Information Technology	LTD= -.025 + .476TDE + .001DIV + .000CFFF +.006FAR	0.97	0.934	0.0335	NONE	None
10	Media and Publishing	LTD= .130 + .707TDE - .005RONW	0.97	0.93	0.02422	TDE	NONE
11	Metal and Metal Product	LTD = -.041 + .911TDE + .001ROGGS + .002ICR + .000ROGGB -.002CV+.000ROGPBIDT	1	1	0.0044	TDE	NONE
12	Miscellaneous Industry	LTD= 1.715 - .072ROCE +.005ROGTA	0.97	0.939	0.0394	TDE	ROCE
13	Oil and Gas Industry	LTD = 0.311 + 0.150CEPS – 0.205EPS	1	0.99	0.19315	TDE	None
14	Power	LTD = -0.023 + 0.883TDE -0.000CL + .000CFFF	1	0.997	0.0309	TDE	None
15	Telecom	LTD =0.767 + 0.655TDE - 0.237VOGB + 000PAT +.000ROGPAT	1	1	0.0107	TDE	None
16	Textile	LTD= 0.118 + 0.669TDE - 0.001ROGMC	1	0.999	0.00916	TDE	None
17	Tourism	LTD = 0.013 + 0.951TDE	1	0.998	0.0108	TDE	None
18	Transport Equipments	LTD= 0.126 + 0.554TDE	0.83	0.691	0.0154	None	None
19	Transport Services	LTD=0.128 +0.955TDE - 0.005DV + .001ROGMC -.004ROGCE	1	1	0.0048	ROGPBIT, ROGMC and TDE	None

APPENDIX VIII
Abbreviations Explanations to the Table I

1.	Z	=	Goal Function to be minimized
2.	ROE	=	Return on Equity
3.	d_1^+	=	Positive deviation from goal 1
4.	d_1^-	=	Negative deviation from goal 1 (Violating Variable)
5.	ROGNS	=	Rate of growth of net sales
6.	d_2^+	=	Positive deviation from goal 2
7.	d_2^-	=	Negative deviation from goal 1 (Violating Variable)
8.	ROGCE	=	Rate of growth of capital employed (ROGCE)
9.	d_3+	=	Positive deviation from goal 3 (Violating Variable)
10.	d_3-	=	Negative deviation from goal 3 (Violating Variable)
11.	TDE	=	Total debt to equity ratio
12.	LTD	=	Long term debt to equity
13.	PBIT	=	Profit before interest and taxes
14.	REFX	=	Revenue earning from foreign exchange
15.	PBDT	=	Profit before depreciation and taxes
16.	ROGGB	=	Rate of growth of gross block
17.	CEFX	=	Capital earning in foreign exchange
18.	ROGCE	=	Rate of growth of capital employed
19.	NWC	=	Networking capital
20.	DV	=	Debtors velocity
21.	PO	=	Payout
22.	MC	=	Market capitalization
23.	CFFI	=	Cash flow from investing activities
24.	PBIDTM	=	Profit before interest, depreciation, tax margin
25.	ROGPBIT	=	Rate of growth of profit before interest and taxes
26.	ROGNS	=	Rate of growth of net sales
27.	ROGLTD	=	Rate of growth of long term debt
28.	ROGRE	=	Rate of growth retained earning