TRYST WITH DESTINY: PROGRSS OF LIVES OF INDIAN MASSES SINCE INDEPENDENCE

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It is indeed a great honour to be invited to deliver a lecture on a subject of topical interest to law makers and general audience. It is rare that a person past 90 years is invited to give a talk to any audience on any subject. I would like to recall a recent incident. I was invited to give a key note address by the president of an international association at their annual conference at Shanghai. When the local Chinese organizers were told about the invitation to me, they said:

There is a rule in China that anyone over eighty should not be invited to a scientific conference. Dr. Rao will not get a visa for entering China.

- Chinese organizer of the conference

A man of science past sixty does more harm than good to science.

-Julian Huxley

(British biologist, Philosopher and Author)

The President of the Association apologized to me saying that he has to withdraw the invitation. I thank Sri Vijayakrishnan for the unusual honour done to me by his kind invitation.

I have consulted my colleagues about a suitable topic of current interest. They suggested the title:

Tryst with destiny: Progress of lives of Indian masses since independence

I accepted the title because I have lived through 63 years of India's independence and it would give me a chance to recall some of my activities in the early days of independence in developing a strong national statistical system for India to collect data, through official channels and household surveys on living conditions of people, which are needed for making appropriate policy decisions by the government. I was working at that time in the Indian Statistical Institute(ISI) founded by Professor Mahalanobis. The Professor was made Hon.Statistical Advisor to the central cabinet in 1949 by Pandit Nehru. A statistical unit was established in the cabinet secretariat in 1949. I had the opportunity of assisting the Professor in setting up the Central Statistical Organization (CSO in 1951) and state statistical bureaus in the fifties, and in organizing the National Sample Survey(NSS in 1950) for collecting household data. India has now one of the best National Statistical Systems in the world. Towards the end of 1954 the ISI provided the government with a number of working papers related to technical and statistical problems relating to national planning. These papers formed 'the plan frame' of the 2nd five year plan drafted by the Professor and adopted by the government.

Even before independence, Panditji invited the Professor to help the National Planning Committee of 1933, which was chaired by him. The Professor submitted a memorandum to the committee.

Another reason for choosing the subject on the progress in standard of living since independence is that I can talk to you through numbers, the language which I have learnt to speak over the last 70 years. As Lord Kelvin says:

When you can measure what you are speaking about, and express it in numbers, you know something about it. When you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind.

Our concern immediately after independence was expressed in the historic speech *Tryst with destiny* by Pandit Nehru immediately after the transfer of power to India in the midnight of August 14, 1947.

Long years ago we made a tryst with destiny, and now the time comes when we shall redeem our pledge, not wholly or in full measure, but very substantially. At the stroke of midnight hour, when the world sleeps, India will awake to life and freedom. A moment comes, which comes but rarely in history, when we step out from the old to the new, when an age ends, and when the soul of a nation, long suppressed, finds utterance. It is fitting that at this solemn moment we take the pledge of dedication to the service of India and her people and to the still larger cause of humanity. -----

The future beckons to us. Whither do we go and what shall be our endeavour? To bring freedom and opportunity to the common man, to the peasants and workers of India; to fight and end poverty and ignorance and disease; to build a prosperous, democratic and progressive nation, and to create social, economic and political institution which will ensure justice and fullness of life to every man and woman.

------We are citizens of a great country on the verge of bold advance, and we have to live up to that high standard.

In his book on the Discovery *of India (1946, p.397), Pandit ji said:*

Obviously we could not consider any problem, much less plan without some definite aim and social objectives. That aim was declared to be to ensure an adequate standard of living for the masses, in other words, to get rid of appalling poverty of the people…. There was lack of food, of clothing, and every other essential requirement of human existence. To remove this lack and ensure an irreducible minimum standard for everybody, the national income had to be greatly increased and in addition to this increased production there has to be a more equitable distribution.

We will examine the attempts made by our government to achieve the objectives laid down by Panditji and the results achieved so far and suggest some strategies to accelerate the progress in the standard of living of the masses of India. Standard of living has several dimensions some aspects of which are as follows.

*Poverty and Hunger

Income, employment, calorie intake of food, drinking water, sanitation, assets, healthy environment, ---

 *Education

Years of schooling, literacy of girls, availability of schools for all children (**no child left   behind**), child labour, ---

*Health

Life expectancy, child mortality**,** maternal care, hospital and emergency services, Immunization against disease, -----

At the time of independence, the indicators of all these aspects of living standards were very low. The government set up in 1950 the planning commission to plan for national development and use of national resources, material and human efficiency to achieve the goal of eradicating poverty and ensure the necessary standard of living within a reasonable time horizon. During 1950-2010, ten 5 year plans and six annual plans have been implemented and eleventh (2007-12) is under implementation. We shall examine, through appropriate measures of the different aspects listed above, the progress achieved so far.

Table1: Growth of real GDP (Average percent per year)

	1950-1980	1980-1990	1990-2000	2000-2008	2007	2008	2009	2010	IMF (Oct 2010) Projections	
									2010	2011
China	4.40*	10.3 +	10.6++	10.4++	13.0~	9.6~	8.7~	9.5~	10.5	9.6
India	3.75**	5.7+	5.9++	7.9++	9.2**	6.7** Quick estimate	7.4** (Revised estimates)	8.5**	9.4	8.4

1. Calendar years
2. Except for 1980-1990 and 1990-2000 data for other periods represent fiscal years so that 1950-80 relates to 1950-51 to 1980-81. 2000-2006 to 2000-2001 to 2006-07. 2007-08 and 2008 to 2008-09 etc.
   sources: * Maddison (1998); ** T. N. Sreenivasan's estimate; + World Bank(2005)-Table 4.1; ++ world Bank (2010a-Table 4.1); ~ World Bank(2010b June); ** RBI(2010)

During 1950-1980, China's average annual growth rate of GDP at 4.4%, though higher than India's Hindu rate of 3.75%, was not substantially higher .In the next decade of 1980,as well as in 1990's China's growth rate exceeding 10% was far faster than India 's less than 6%. India narrowed the difference during 2000-2008. Then the global financial crisis hit. Both countries annual growth slowed down, China from 13% in 2007 to 9.6% in2008 and India's from 9.2% in 2007-08 to 6.7% in 2008-09. When the financial crisis eased the growth has come back to previous high levels, although China seems to be doing better. For sustaining the high growth in the future the as yet unfinished reforms have to be implemented.

Table2.1: Trends in poverty (population below poverty line) during 1951-52 to 2004-05

India (official)	1951-52	1961-62	1973-74	1977-78	1983	1987-88	1993-94	1999-00	2004-05
Rural India	47.4	47.2	55.7	53.1	45.7	39.1	37.3	27.1	28.3
Urban India	35.5	43.6	48.0	45.2	46.8	38.2	32.4	23.6	25.7
Combined	45.3	46.5	54.1	51.3	44.5	38.9	36.0	26.1	27.5

Sources: Datt G(1999), Deaton(2003),GOI(2007),MOF(2008,Table 10.4)

Table 2.2: Trends in poverty (population below poverty line) during 1981-2005.

	1981	1990	1996	1999	2002	2005
China: National Poverty Line	52.8	22.2	9.8	7.6	7.3	5.2
China(World Bank, $1.25/day PPP, 2005, Poverty Line)	84.0	60.2	23.7	36.4	28.4	16.8
India(World Bank, $1.25/day PPP, 2005,Poverty Line)	59.8	51.3	46.6	44.8	43.9	40.3

*Sources: *Chen and Ravallion(2007) ** World Bank(2009b)*

Annual data show significant fluctuations in national poverty around 50-55 % until 1977-78. From 1983 there is a perceptible downward trend albeit somewhat slow, both in rural and urban areas with earlier significant rural-urban differences narrowing as well. In 2004-05 the rural ratio was 28.3% and urban ratio

was 25.7%, with the national ratio at 27.5% which is of the order of 330 million poor people.

As was seen in Table1, the real GDP growth rates accelerated after 1980, and both countries began reforming their economies resolutely and systematically after 1990. Comparing figures in Tables 1, 2.1 and 2.2, there is clear association between reforms, growth acceleration in terms of GDP and poverty reduction. Such an association does not necessarily imply that poverty reduction was caused indirectly by (through growth acceleration) and directly by reforms. This is an interesting problem on which some research has been done and more remains to be done.

There is a feeling among the public that the government policies are directed more towards achieving high economic growth than solving problems concerning standard of living. The government economists say that populist policies are not conducive to economic growth.

The problem of poverty facing the country can be briefly summarized as follows.

According to World Bank estimates India had 421 million extremely poor people in 1981, which is about 60% of the population. In 2005, there were 456 million extremely poor people, which is about 42% of the population.

We have made considerable progress, although there are variations in the figures for individual states. We are still far away from complete eradication of poverty, or to use the popular slogan, *garibi hatao,* in a reasonable time horizon.

According to the Global Hunger Index compiled by the international Food Policy Research Institute, India ranks 67 among 88 developing countries.

Let us look at the progress we made in education. The Indian government's commitment to education is stated in the constitution with an article promising free and compulsory education for all children until they complete the age of 14. The constitution also has an article which says: No child below the age of 14 shall be employed to work in any factory or mine or engaged in any hazardous employment. In India, the number of children, male female who are out of school and possibly employed, is estimated to be of the order 20 million

(by the government) and 50 million(by other agencies)

Table 3.Distribution of persons per 1000 of age 15 and above during 2007-2008

Education	Male	Female	All
Not Literate	236	456	345
Primary to Higher Secondary	685	498	593
Graduate	61	35	48
Post Graduate	18	10	14

Source : NSS 64th round report for 2007-2008

It is seen that about 24percent of males and 46 percent of adult females are illiterate. About 8 percent of males and 4.5 percent of females have graduate and post graduate qualifications.

Table4. Literacy per 1000 persons of age 7 and above

Source	Male	Female	All
NSS(1993-1994)	693	447	574
NSS(1999-2000)	728	508	621
Populations Census 2001	753	537	643
NSS(2004-2005)	770	570	673
NSS(2005-2006)	781	581	683
NSS(2007-2008)	798	614	708

Source : NSS 64th round report for 2007-2008

Considering persons of age 7 and above, the literacy rates were 27.2% for males and 79.8% for females and overall 18.3% in 1950-51. The corresponding figures in 2007-2008 are 79.8%, 61.4% and 70.8%, which show considerable improvement since independence.

Table 5. Children of primary school age (6-10 years) in school in India

	Year 2000	Year 2006	Change
Male percentage	79.2	85.2	5.9
Female Percentage	72.3	81.4	9.1
Poorest 20%	66.1	69.4	3.2
Out of School in millions			
Male	13.0	9.5	-3.5
Female	16.4	11.2	-5.2
Total	29.4	20.7	

*Source: International Education statistics by Friedrich Huebler
(based on data from Demographic and Health Surveys)*

The number of children, male and female, going to school increased by about 7.5 percent during the period 2000-2006. The percentages of male and female children going to school in 2006 are about 85 and 81 percent respectively. However, among the poorest 20 percent of the population, the percentage going to school is about 70 percent.

In terms of numbers, 9.5 million male children and 11.2 million female children, altogether 21 million, are out of school in 2006. Possibly these are the children who constitute child labour. Although we have made considerable progress in overall improvement of literacy, but it far short of our goal of **no child left behind** and elimination of child labour.

With 21 million children out of school, we have have enormous unutilized brain power. In his Discovery of India, Panditji lamented:

If life opened its gates to them and offered them food and healthy conditions of living and education and opportunity of growth, how many among these millions would be eminent scientists, educationists, technicians, industrialists, writers and artisans helping to build a new India and a new world.

The education of women is extremely important as the numbers in the following Table 6 bring out.

Table6. Key indicators of fertility and health of children by literacy of women

Item	1992-1993	1998-1999	2005-2006	Literacy of Women			
				Illiterate	<5 years	5-9 years	>10 years
Total fertility rate per woman-	3.4	2.9	2.7	3.6	2.5	2.4	1.9
Family planning (percentage)	40.7	48.2	56.2	52.1	63.6	58.6	61.1
Children 6-35 months who are anemic (percentage)		74.2	72.2	84.1	78.1	77.0	69.4
Women who have heard of AIDS (percentage)		40.3	57.0	30.7	59.1	78.6	96.7

National Family Health Surveys-3 (2005-2006)

The total fertility rate has fallen from 3.4 children per woman to 2.7 during the period 1992-2006. These rates are higher than 2.1,the replacement level of fertility that keeps the population constant. The reduction from 3.4 to 2.7 may be partly due to women adopting family planning practices. But what is more interesting is the effect of literacy of women. While the fertility of illiterate women is 3.6, the number gradually drops down with increase in the literary status to about 1.9 with more than 10 years of school of education. The literate women are better aware of family planning practices and look after the health of their children. The fertility rate for population replacement is 2.1 which is higher than what can be achieved by increasing the literacy of women. It appears that the best method of population control is to educate our women.

In the area of health, there has been considerable progress since the time of independence.

Table 7. Life expectancy at birth

Year	Male	Female	All
1941-51	32.4	31.7	32.1
1951-61	41.9	40.6	41.3
1961-71	46.4	44.7	45.6
1971-81	50.9	50.1	50.5
1996-2001	62.8	64.2	63.5
2001-2006	64.1	65.6	64.9

Source : Indian Population census reports

* Table 7 gives the figures for life expectancy at birth from 1941-50 to 2001-o6. During this period, overall life expectancy increased by 33 years. The increase was 32 years in the case of males and 34 for females. In all developed countries females have higher life expectancy than males. Only recently in India female life expectancy began to exceed male levels. Moreover, in India the ratio of females to males in the population is less than 1 and in some states (e.g. Punjab) the ratio is much below 1. Kerala is an exception. Unfortunately female infanticide is significant in India.

Table 8. Comparative figures for Kerala and all India of some demographic characteristics

Year 2007		Kerala	India
Life expectancy of birth	Male	70.9	61.8
	Female	76.0	63.5
Infant mortality per 1000		14.0	58.0
Death rate per 1000		6.4	7.6
Fertility rate per women		1.7	2.9
Literacy rate	Male	94.2	79.8
	Female	87.9	61.4

It is seen that Kerala has much lower figures than for all India in all categories. In some categories the figures are comparable to the corresponding figures for advanced countries. It would be of interest to investigate what causes the lower figures, such as

genetic, food, climate, better medical facilities, political leanings etc. It is seen that Kerala has already achieved replacement fertility rate and so is its neighbouring state of Tamilnadu. In fact all the southern states are close to achieving replacement level of fertility.

Some of the improvements in overall health of people and facilities for medical facilities are as follows.

 * High end curative services are on par with advanced countries at a lower cost attracting health tourism, but limited access to the poor.

*Complete immunization is less than 50% and progress has been slow.

In conclusion, I would like to leave some of my thoughts with you for your kind consideration to achieve the desired objectives in a reasonable time frame.

***Data accuracy**

The policy decisions made by the government are based on what are called official statistics collected through administrative channels. The official statistics are characterized as:

Data collected by the government of the people for the people

Usually data collected have some errors which may have adverse effects on the policy decisions based on them causing misery to millions of people. Steps should be taken to see that collected data are free from gross errors.

*Data Deficiency

As problems to be addressed change over time, the need for collection of new data arises. So periodical assessment of data needs is necessary and methods for enlarging the date base should be implemented.

Some years ago I used to organize **Seminars on Data Base of Indian Economy.** Leading economists of India were invited to give keynote addresses. The Proceedings of these seminars were published. I suggest reviving these seminars.

*Need for aggressive reforms

More aggressive reforms may be needed to achieve the desired objectives such as abolition of poverty and universal education within a given time horizon.

*Monitoring of proposed reforms

Experts are needed to monitor continuously the proposed reforms and take corrective action if necessary to implement

the reforms. There were reports in news media about mismanagement of reforms. This is unfortunate.

*Ensure the accuracy of premises on which future plans are made

Plans are based on an assessment of existing living conditions and setting targets to be achieved. For instance there are wide differences between the estimates of poverty made by different agencies. They should be reconciled and appropriate estimates used for planning purposes.

*Obsolescence of economic knowledge

Laws of economics are derived from observed data. They are likely to change over time. Some caution is necessary in making long range plans for economic development based on current economic knowledge as the famous economist John K.Galbraith says:

Economic institutions change rather rapidly. In consequence the rate of obsolescence in economic knowledge is high.

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Let me say a few words about my profession and what we can do as statisticians.

I may recall an important decision made by the government accepting statistical advice. In 1948, there were serious riots in

Delhi. The members of one community took shelter in Red Fort. It was the responsibility of the government to feed the refugees in Red Fort. They employed contractors to feed these people. The government suspected that the contractors were over charging on the amount of commodities like rice, pulses and salt used by them. The government thought that they need the help of statisticians to enter the Red Fort and count the number of refugees. A requisition was sent to the Indian Statistical Institute (ISI) to send 2 statisticians immediately to Delhi. Two statisticians from ISI flew to Delhi, but they were not allowed to enter the Fort. The following table shows how they arrived at the estimate of the number of refugees.

The statisticians had some idea of per capita consumption of different commodities estimated from house hold surveys conducted in Calcutta. They argued that a reasonably good estimate of the number of people inside the Red Fort can be obtained by dividing the amount of a commodity supplied by the corresponding per capita consumption. Three different estimates can be obtained using the information given on rice, pulses and salt. Statisticians showed the discrepancy between different estimates and recommended the lowest figures based on salt. Salt was the cheapest commodity at that time, thanks to Salt Satyagraha Movement by Gandhiji. The contractors would not make much money by over quoting the amount of salt supplied while they can make a large amount by over

quoting the amount of rice and pulses. Some refugees took shelter in Humayun Tomb where the number refugees were known. The statisticians applied the salt formula to estimate the number in Humayun tomb and found that it works well. The government accepted the estimate suggested by the statisticians.

Table 9. New Delhi Red Fort Story

Commodity	Amount Supplied	Per capita Consumption	Estimate of Population
Rice	R	r	R/r=30,253
Pulses	P	p	P/p=21,122
Salt	S	s	S/s=10,891

Statistics is a way of thinking rather than a method of extracting information from data.

Data do not speak for themselves-statistical science enable data to get a voice through appropriate and correct inference drawn from them.

An important contribution made by statisticians is in the detection of fraud. People quote wrong figures and fake documents to achieve personal ends. For instance, stamp paper was faked in India some years ago and it went undetected for a number of years. Usually currency notes are faked. Spurious drugs and adulterated products are sold in markets. Statisticians have developed simple devices to detect such

frauds based on the premises that we cannot fake to match the originals in full details. I give one example to show how in Switzerland faking of currency was detected in very short time.

A sample of notes is collected every week and sent to an imaging center where using a devise suggested by statisticians measurements on the notes are converted into pictures of human faces as seen in the slide. It is easy to see that there are two types of faces indicating that some are forged. The whole operation takes a short time and no expert is needed as everything is done mechanically.

No doubt experts are needed to assist the law makers in taking appropriate decisions. However, it is important for policy makers to acquire some technical knowledge of statistics to understand the jargon of experts and analyze their recommendations. As H.G.Wells says:

A time may not be very remote when it will be understood that for complete initiation as an efficient citizen, it is as necessary to be able to compute, to think in terms of averages and maxima and minima, as it is now able to read and write.

I believe economists and statisticians have to play a major role in policy making based on available information, building suitable models of growth and continuously monitoring the

progress made. I understand that there is a serious shortage of economists and statisticians in India. Perhaps production of these professionals should be one of the objectives of five year plans.

Above all, I would like to add that the future of a country depends on a scientific way of thinking, although the procedures of solving a problem may vary from one field to another, as emphasized by Pandit Nehru:

It is science alone that can solve the problem of hunger and poverty, of insanitation and illiteracy, of superstition and deadening custom and tradition, of vast resources running to waste of a rich country Inhabited by starving people.... Who indeed could ignore science today? At every turn we have to seek its aid…the future belongs to science and those who make friends with science.

I may end with an anecdote connected with the jargon of statisticians. A teacher asks one of his pupils:

What does a statistician mean when he says 3.2 people died out 100? How can 3 point 2 die?

The boy replies:

Sir, when a statistician says 3 point 2 people died, he means, 3 people actually died and 2 are at the point of death.

Thank You.