Socio-economic implications of retiring baby boom generation people, shrinking workforce in the developed economy and proposed solution

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Abstract

This paper talks about the socio-economic problems that would arise when the baby boom generation people will eventually start retiring between 2007 and 2011 in the developed countries. This paper advocates that how the Indian workforce can supplement the shortage that would likely to be experienced by the developed countries. In this paper, four European countries are considered (Germany, France, Italy and UK) for the purpose of study. In these developed countries, due to advancement in medical sciences and therefore increasing life expectancy, the proportion of population aged above 65 is increasing. The fertility rates are low in these countries because of the modern life style of young generations, increased focus on career and generally little inclination towards bearing children. This puts considerable pressure on the workforce as they end up paying higher per capita taxes to the government to fund for pension, health care and housing. Some countries such as the USA, UK, and Germany have been outsourcing some of their work to India and other third world countries over the last few years to take the advantage of cheaper and yet skilled workforce. The money saved through outsourcing can be re-invested in these countries that outsource to help solve some of the socio-economic problems that will arise when the baby boomers will eventually start retiring between 2007-2011 (when they turn between 60 and 65). If outsourcing is indeed considered an option to this shrinking workforce, then how long current and future outsourcing will last in India? This paper also considers the population dynamics in terms of ageing population, out sourcing and social security by 2050?

1. Introduction

The baby boom period for the developed countries was the post second world war period until the 1960s. In France, the population growth in 1950s and 1960s was 1% per annum highest growth in the history of France. The two Germany in late 1950s and 1960s experienced baby boom generation simulated by increased prosperity. The West Germany peaked birth 1.3 million reached in 1965. In Australia, the baby boom generation period was 1946-1964 when more than four million babies were born. In UK between 1945 and 1965, around seventeen million babies were born. In Japan, the period between 1947-1949 is considered the baby boom generation. In US, the baby boom generation period was between 1946-1964 when seventy five million babies were born whereas in Canada, the baby boom generation period was 1947-1966. Most of the babies born in the baby boom period will turn 60 by around 2006-7 and 65 by around 2011-12 and will eventually retire from the active workforce. Unless this retiring generation is to be replaced there will be a vacuum in the working population.

The problem

Due to improvements in medical sciences, now successive generation is expected to live longer. This has lead to increasing life span that may lead to certain problems. The one problem is on pricing the annuity rates, as improvement in mortality is to be taken into account that require judgment about the future mortality else things may go wrong. Another problem is increasing cost of providing pensions and health related benefits to the retired people to be borne by the governments where social security system is quite comprehensive.

The consequence of improvement in mortality resulting in increasing life expectancy means that those receiving pensions will receive it for a longer duration. The pensions, which are not funded, the governments have to find some means to cover the extra cost . On the other hand as the fertility rate decreases, those dying due to old age are not replaced by the new born babies to maintain the equilibrium between workforce and retiring people. As a result of this, the process of life and death is halted by the old age people resulting in higher proportion of old age people over the total population. This also implies that the workforce (15 to 65 years of age) are also decreasing as a proportion of old age people. This leads to some social security problems for the governments.

The problem is more sever in the developed countries where workforce funds for social security through taxes. In countries where social security system is more generous, may force working population to exist from the workforce and retire early and obtain generous benefits from the government leading into further shrinking in the work force.

2. Various solutions suggested by different governments in the developed countries to solve social security problems

As different governments of developed countries are foreseeing the problem that is going to arise after the retirement of baby boom generation people, the governments have suggested various solutions to the problem. Every suggested solution has some merits and demerits. To gauge the magnitude of problem, consider an example of Germany and see its population dynamics.

It can be seen from the table-1 below that the projected German population are decreasing drastically, the workforce which is 67.3% of the total population in 2004 and people aged 65+ are 18% of total population, the workforce reduces to 56.5% in 2050 and the retired community increases to 31.6%.

Table-1

in millions

Age	Actual Pop-2004	Actual Pop-2025	Actual Pop-2050
0-14	12.13	10.59	8.88
15-64	55.54	51.32	42.17
65+	14.86	20.20	23.59

Source eurostat: April 2005

Lets us see some of the solutions suggested by the different governments.

Increased workforce participation

Some of the governments in Europe have suggested that if the workforce is increased, that is, more participation of workforce or higher employment rate, the government can earn extra taxes from extra employment that can be diverted into fund of social security. This has a logical argument but this also leads to a problem that those who will join the service will eventually retire and will receive the pension and other old age benefits. If more workforces are not added in future when these extra workforces retires, the governments will again face the same problem of funding for their pension and other health care facilities.

Increase in retirement age

Some countries are working towards finding the solution by increasing the retirement age to get extra years of work and less number of years of pension payment. In the period between 2001 and 2012, the German pension age will be raised to 65 years for both sexes. In Britain pension age will be raised from 60 years to 65 years in the period 2010 to 2020. In Italy, the pension age is to be

raised to 60 years for women and 65 years to men. Increasing retirement age is one of the possible solutions to increase fund for social security but it also has some issues. Some of the issues related to increasing the retirement age are, unrest among unemployed and also increase in unemployment rate. This also infringes the right of the elderly in the society to retire. In France in 1997, there was unrest with the workers demanding the right to retire at the age of 55. So increasing the retirement age is not all that of solution, though this provides some respite of reducing pension payment period.

Increase in birth rate

At a first instance, it sounds that increase in the birth rate is one of the possible solutions of this problem, however, the secret is hidden under the concept. When the birth rate is increased this has two immediate repercussions. One is, with the increase in the birth rate, there is a time lag of 20 to 25 years before newborn babies start giving results in terms of participating in the workforce. During the time lag period (20 to 25 years), the government has to find some alternative solutions of finding extra workforce. This also means that the governments should be ready for the overall expansion of the population and hence the economic growth. This will depend on the overall philosophy of the government on population growth. If any government decides to increase the population level such that the dependency ratio in 2050 will be same as 2004, then the government must also increase the economic growth to a level such that people in 2050 can enjoy all the material benefits as in 2004, otherwise, country can become economically weaker. The second effect which is , that all the growth in the population will lead further to chocking of population at the upper end of the funnel when they become old and eventually start receiving the pension and other old age benefits.

Increase in migration rate

The inward migration of population from the third world countries may solve problem temporarily and instantly as it can provide an instant increase in population in the workforce age group. One of the problems in this solution is once the migrated workforce become old, they are again at the upper end of the funnel requiring pension and other old age benefits for themselves. Another question associated with this solution is that, will it be possible to arrange such a huge surplus of population from rest of the world.

Increase in tax rates

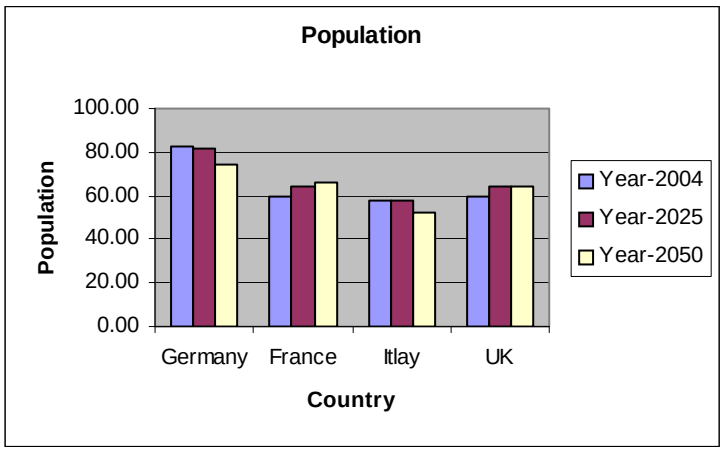
Increase in income tax rates is one of the options available with the governments of developed countries to fund the deficit in social security fund. The question is how much taxes can be increased to put more pressures on the workforce. According to one study, the German pension cost will reach to 28% of GDP in 2030. In France, the pension cost will be around 25% of GDP by 2030 as compared to 13% in 1990. Similarly, in Italy, the pension cost will be around 25% of GDP by 2030. So increasing the tax rates is a harsh option, if the government prefers to implement. However, after a certain period with proportionate decrease in workforce, it may not be feasible to increase tax rate indefinitely.

3. India and European population comparison

This section compares the population position of four developed countries, namely, the Germany, France, Italy and UK, between the time period 2004 and 2050. This section also compares the population dynamics of India with four above-mentioned European countries. The objective of this section is to find whether there will be any surplus population available in India between the time periods 2004 to 2050 so that some of work may be diverted for the use as a workforce in these four European countries workforce.

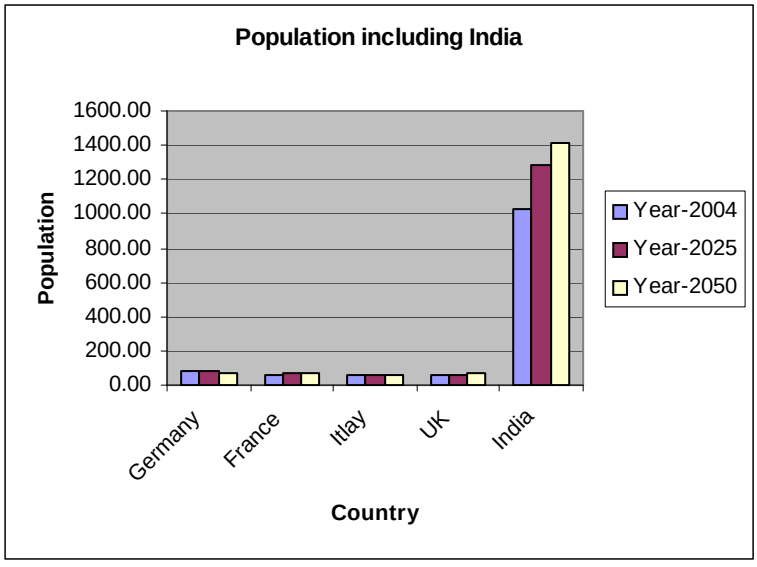
The Graph-1 shows the progression of population of four European countries between the time period 2004,2025 and 2050.

Graph-1



The Graph-3 shows the comparison between the population of India and four European countries. This graph shows the size of total population of India as compared to four European countries. At a face of it, this shows that India may have potential surplus population for the use of developed countries as a workforce.

Graph-3



The total population of four countries is 6% to 8% of population of India in 2004 and reduces to 4% to 5% population of India by 2050.

Table-2

Total Population

Country	Year-2004	Year-2025	Year-2050
Germany	82.53	82.11	74.64
France	59.90	64.39	65.70
Italy	57.88	57.75	52.71
UK	59.65	63.79	64.33
	Year-2001	Year-2021	Year-2051
India	1027	1287	1416

Workforce population (15-65)

Country	Year-2004	Year-2025	Year-2050
Germany	55.54	51.32	42.17
France	38.99	39.21	37.45
Italy	38.55	36.32	44.15
UK	37.58	40.19	37.76
	Year-2001	Year-2021	Year-2051
India	628	904	961

Population 65+

Country	Year-2004	Year-2025	Year-2050
Germany	14.86	20.20	23.59
France	9.76	14.42	17.87
Italy	11.11	14.44	29.13
UK	9.54	13.33	17.11
	Year-2001	Year-2021	Year-2051
India	46	86	238

All figures in millions

Dependency ratio as a percentage of workforce

Country	Year-2004	Year-2025	Year-2050
Germany	27%	39%	56%
France	25%	37%	48%
Italy	29%	40%	66%
UK	25%	33%	45%
	Year-2001	Year-2021	Year-2051
India	7%	10%	25%

Workforce: 15-64 years

The German total population as well as workforce population decreases by around 10% and 24% respectively between 2004 and 2050. There is an increase in the 65+ populations by around 59% in the same period. Also the dependency ratio in Germany is up from 27% in 2004 to 56% in 2050. This indicates the increasing quantum of population 65+ as against workforce.

The total French population increases by around 10% between 2004 and 2050, the workforce decreases by around 4% in the same period. Between 2004 and 2050, French 65+ population increases by around 83% and dependency ratio increases from 25% in 2004 to 48% in 2050. It can be seen that dependency ratio is almost doubles in 45 years time.

In Italy, there is a decrease of total population by around 9% between 2004 and 2050 whereas workforce population increases by around 14%. Also 65+ population increases by around 162%. This leads to increase in dependency ratio from 29% in 2004 to 66% in 2050. The dependency ratio get more than doubled in 45 years time, though there is an increase in total population in the same period.

There is an increase of 8% of total population in UK between 2004 and 2050; workforce marginally increases to 0.5% between 2004 and 2050. The population of 65+ increases by around 79% in the same period. This leads to increase in dependency ratio to 45% in 2050 compared from 25% in 2004.

Now moving to Indian population dynamics, there is an increase of 38% of total population in the period 2001 to 2051 more than sum of all four European countries. The workforce increases by around 53% and 65+ populations increases by around 417%. The dependency ratio increases from 7% in 2001 to 25% in 2050.

It may be inferred that there will be a large surplus population available in India. Also currently there is a not much social security benefits available to the 65+ populations compared to social security benefits available in the developed countries. Even, the dependency ratio 43 years later is same as current French or UK dependency ratio.

From the above tables, there is a clear signs that there will be a lack of supply of workforce in the developed countries as compared to India. Also dependency ratio in the developed countries will touch around 50% as compared to around 25% in India.

In order to determine the surplus population in India by 2050, we must know the likely unemployment rate would be prevailing in 2050. The current unemployment rate (2003) in India was 9.1% of the workforce compared from 8.8% in 2002. For sake of simplicity, if we assume current unemployment rate will be prevailing in 2050, then there will be 86 million workforces unemployed in 2050. This figure is around equivalent to sum of total workforce of Germany and Italy in 2050.

This section ends with a note that surplus population in India will be available in 2050 and can be used as a workforce for developed countries.

4. Workforce supplementation in the developed countries from India

The question is can we make up the shortage of workforce supply in the developed countries from India, which will have such a large surplus of workforce population (around 86 million) without bothering any of the arguments given in section-2 of this paper.

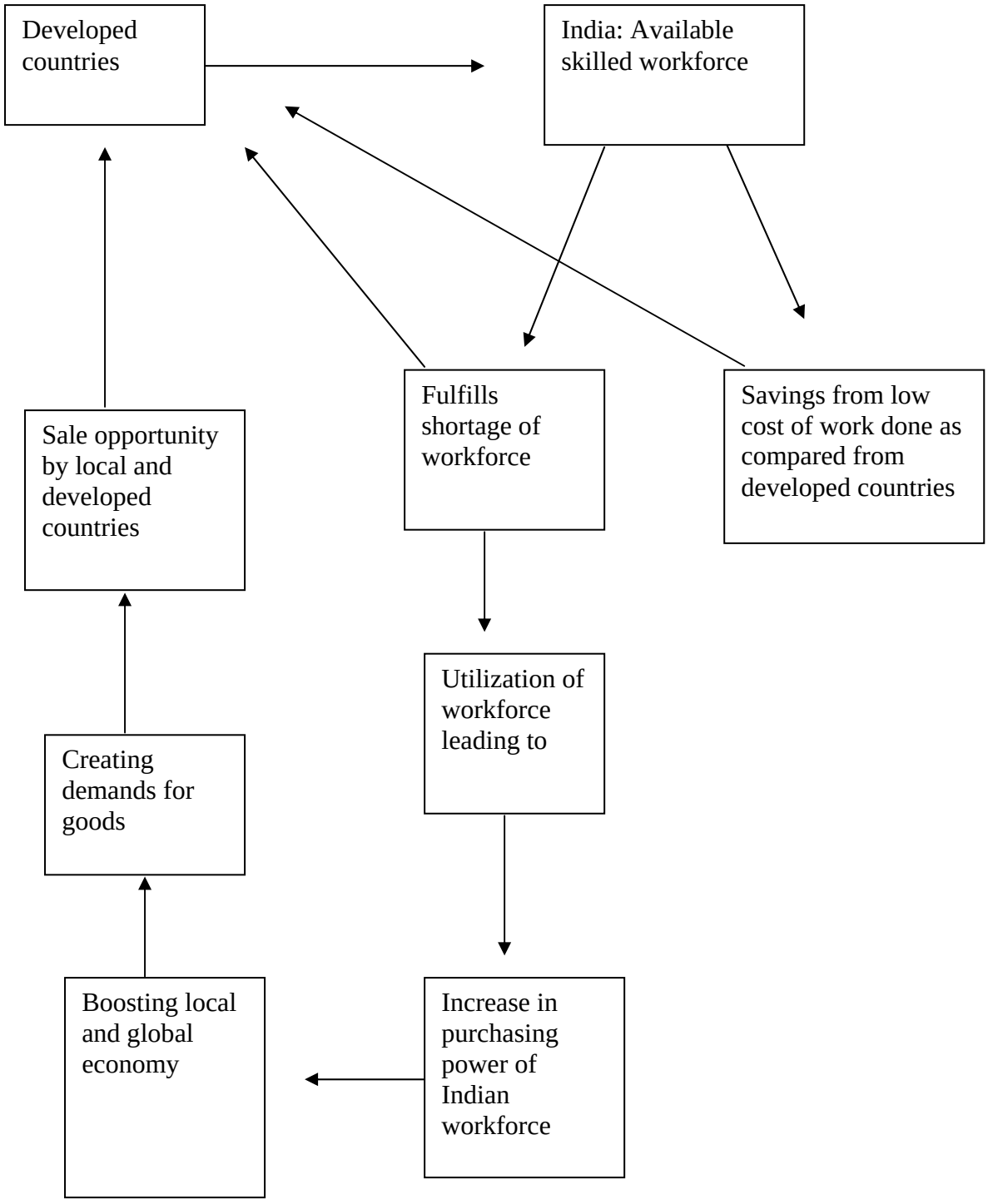
The surplus Indian workforce can work from India for countries who will be experiencing the shortage of workforce. This will not cause any of the problems discussed in the section-2 under the heading of 'Increase in migration rate'. So outsourcing of work may be considered as an option to off set the problem of shortage of workforce.

Some of the countries are already outsourcing works to India to utilize the skilled manpower available in India. This enables the job get done as a replacement of shortage of workforce in the respective developed countries with low cost of production which in turn results in savings. Such savings can be diverted to solve some of the social security problems. Some of the advantages of outsourcing are:

1. Supplementation of shortage of workforce in the required country;
2. Saving in terms of lower cost of job done;
3. This process may boost global economy.

A pictorial representation of the entire process as follows:

Chart-1



The chart-1 represents a scenario when the work is transferred to India and its chain reaction. When the job by the required country is transferred to India, the job will be completed within the time frame and the required country will not experience the shortage of workforce. This will enable the required country to generate the money because if the job is not done, then they have to get it done in their own country by paying extra money for extra time and if the job is done in India, the difference in the cost of production will be the savings. It is also possible that the job may not be

done at all because there are not enough number of people to take up the jobs. So there will be a value for every job available in future.

It has been reported in the press that the outsourcing country saves as much as 40% to 50% of money had the work would have been completed in their country.

When there is a greater utilization of workforce in India, means that more people will be employed or getting the higher salary. This will lead to increase in their purchasing power that will generate demands for the goods. Once the demand is created, there will be a greater opportunity of more sales. The opportunity of sales in the liberalized economic can be enchased either by local economy or world economy. In directly this also provides and additional avenue for the developed countries to increase their sale and ultimately boost the economy.

5. Determination of outsourced work

In the above sections, we have seen that in future there will a severe shortage of workforce in the developed countries,. We have also seen that outsourcing by the developed countries is one of the options available that can be exploited to solve social security problems. The question now need to be answered that what should be the proportion of work they can outsource so that a balance may be created between 65+ population and workforce.

In order to address this problem, it is important to realize that what should be the ideal proportion of 65+ populations over the work force in any country so that the balance is comfortable. Because once this proportion is determined, it will be easier to know that how much work need to be transferred or what is the extra workforce requirement. This will help in moving towards the direction of the solution where workforce will be feeding enough to the government through taxes and savings to divert the social security funds for pensions and other old age benefits. The determination of such proportion will vary from country to country.

Let us suppose that the **ideal dependency ratio** of 65+ populations over the workforce is R. The ratio is defined as

R = (Number of person aged 65+)/ (Number of person in the age group 15-65)

$= L_{65+} / L_{15-65}$

When the number of persons aged 65+ increases and workforce decreases (this is the problem in question) then the new ratio $R^{/}$ will be greater than the ideal ratio R. In order to bring the new ratio $R^{/}$ to the level of R, we need to increase the workforce in the denominator.

The new ratio is

$$R^{/} = L^{/}_{65+} / L^{/}_{15-65}$$

$L^{/}_{15-65}$ need to be increased to $L^{//}_{15-65}$ in such a way that

$$R = L^{/}_{65+} / L^{//}_{15-65}$$

This means that the extra workforce requirement will be

$$L^{//}_{15-65} - L^{/}_{15-65}$$

Whenever, the ideal dependency ratio R moves to $R^{/}$, the extra workforce required to maintain the balance between old age people and workforce will be $L^{//}_{15-65} - L^{/}_{15-65.}$

Let us take the example of Germany. The ideal dependency ratio between 65+ populations and the workforce should be when the population is in a stabilized state. The stabilized population state is not known yet; therefore for sake of ease of calculation, let us suppose that the current dependency ratio of 26.75% is an ideal ratio for Germany.

In 2050, the dependency ratio expected to be around 56%.

In 2004 number of persons aged 15-65 years are around 65 millions, and number of persons aged 65+ are around 15 millions.

In 2050 number of persons aged 15-65 years expected to be around 42 millions, and number of persons aged 65+ are around 24 millions.

To bring the ratio in 2050 to the current level of 26.75%, the total workforce required will be 90 million in 2050 as against would be available 42 million. So extra workforce required in the Germany will be 90 million minus 42 million equal 48 million. Thus, if everything remains constant and current ratio is an ideal dependency ratio, the Germany will require extra workforce of 48 million. India has 86 million of surplus population in 2050 at a current level of unemployment rate.

If Germany has to maintain the demographic balance in 2050 same as 2004, then they will require 48 million extra workforces.

This section end with a note that if developed countries are to solve social security problem in future, then it is important to define an ideal dependency ratio and then work towards finding the extra workforce requirement to create population balance and social security problem.

6. Population scenario of ageing population, outsourcing and social security problem by 2050

A scenario of population dynamics of four countries in 2050 will look like as given in the table –4 below:

Table-4

Country	Workforce Population in 2050 (million)	Dependency ratio in 2004	Dependency ratio in 2050	Total workforce required to maintain 2004 DP ratio (million)	Extra workforce required in 2050
Germany	42	27%	56%	90	48
France	37	25%	48%	72	35
Italy	44	29%	66%	100	56
UK	38	25%	45%	68	30

The above table suggests that the four countries will require 168 million extra people in the workforce age group category in order to maintain the dependency ratio in 2050 same as the dependency ratio of 2004. There is an assumption that four countries are running smoothly now (2004), means the dependency ratio of 2004 as an ideal ratio. However, if the ideal ratio changes, the requirement of extra workforce will also change in 2050. The above extra workforce requirement is sensitive to ideal dependency ratio. Therefore, the lower bound of surplus population requirement in 2050 will be zero if a government decides to define the ideal dependency ratio same as in 2050, however, if the government decides to define the ideal dependency ratio as in 2004, the upper bound of surplus workforce population requirement will be as calculated in the last column of table-4

It may be noted that India has surplus population of 86 million in 2050 that do not cater the need of all the above four countries. It can serve at most two countries.
There is a visible mismatch between demand and supply of the workforce in 2050. This may lead to change in the economic situation as developed countries may be severely handicapped by the

supply of labour force. One of the repercussions could be inflationary increase in the salary in a country with surplus workforce population.

It is expected that in the next fifty years, developed countries will be outsourcing some of their works to the low cost of production countries such as India and China because of shortage of workforce in their countries.

7. Summary

The problem that is going to arise in future will be a very cracking problem of workforce shortage in the developed countries. By 2050, the four major countries of Europe; Germany, France, Italy and UK will require 168 million extra workforce whereas India can provide only 86 million of surplus population. For the deficit of workforce, these countries have to look at the other low cost production countries that also have surplus population such as China. There are other major economies, such as USA, Canada, Australia and Japan may also be requiring surplus workforce to supplement their shortage of workforce. This is a right time to address that from where such huge workforce will come.

The time is right now to concentrate on mix of ways through which shortage of workforce in developed countries can be solved. In future many jobs may move in the east direction from west and outsourcing from the developed countries in India is going to stay for at least next half a century. If this happens, the world economy will get a major boost, as there will be an eruption of consumption of goods.

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