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## **Demographics: A Game Changer in Global Economic Growth Prospects**

The global economy is interestingly poised with developing and emerging economies growing at a rapid pace and advanced economies at a slow pace. This dual speed recovery is expected to continue as per the IMF. Within advanced economies, US economic growth is expected to be higher than previously expected whereas the Euroarea will remain sluggish. However overall global economic growth projections continue to be revised upwards. Initially this upward revision was on account of higher growth in EMEs and subsequently it is on account of the advanced economies. For 2011, IMF pegs world growth at 4.4%, higher than 4.2% estimated earlier in October, 2010.

In all these developments, there is one risk which is either ignored or not paid adequate attention to - Demographics. The advanced economies are suffering from an ageing problem with old age people forming larger percentage of population in future years. This presents both short and long term challenges for growth. In the short-term it raises issues on economic recovery after the crisis. In long-term it raises questions on the finances needed to meet the pension liabilities.

This paper analyses the demographic trends in key economies going forward and assess the impact it could have on their economic prospects. In particular, it focuses on how demographic pressures could impede in the recovery of the advanced economies from the 2007 recession. This is particularly important as economists and policymakers have been aware of these demographic challenges even before. It is this interconnection of demographics with the recession which makes the issue all the more complex.

### **Ageing Problem in Developed Economies**

There are many indicators to understand demographic patterns of an economy. In this study, we focus on dependency ratio as it helps understand the ageing problem in an economy which is the objective of this study.

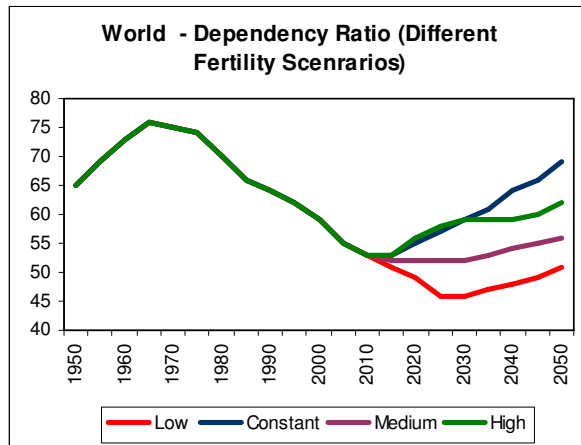
Dependency ratio is measured as percentage of population which is dependent on working population. Dependents include both children and old age populations. The United Nations defines dependency ratio as sum of the population aged 0-14 and aged 65+ to the working population aged between 15-64. All ratios are presented as number of dependants per 100 persons of working age (15-64). So, if the total dependency ratio is 50, it means there are 50 dependents (both child and old age) for 100 working persons.

For our analysis we look at both child and old age dependency ratio in key economies. UN demographics database also provides various scenarios based on different fertility rates (low fertility rates, constant, medium and high). For most of our analysis we rely on medium fertility scenario.



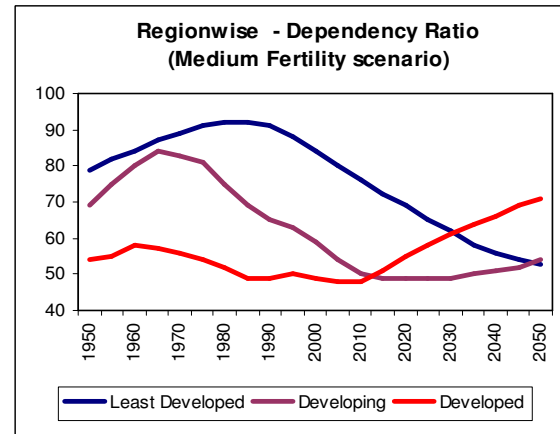
Based on above, figure 1 looks at the world dependency ratio going in 2050. In 2010, the average dependency ratio is 53. It touches 51 based on low fertility scenario and improves to 62 based on high fertility scenario. The medium scenario is also favorable with the dependency ratio projected at 56 in 2050.

Figure 1



Source: UN

Figure 2



Source: UN

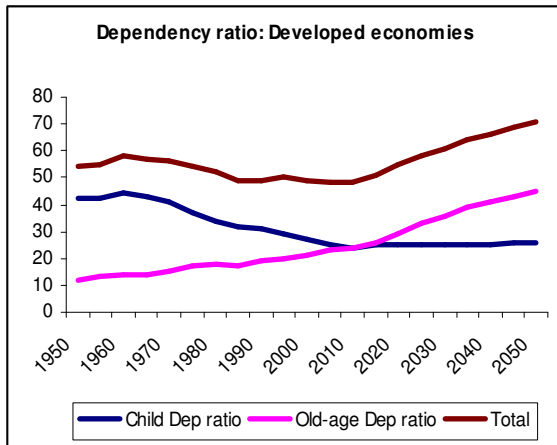
However, if we divide the regions into developed and developing we see some crucial differences (Figure 2). The developed economies dependency ratio increases from 48 in 2010 to 71 in 2050. In developing economies, we see the ratio declining from 50 in 2010 to 49 in 2030 and then recovering to 54 in 2050. The least developed economies are expected to see their ratio decline sharply from 76 in 2010 to 53 in 2050.

In developed economies, fertility levels have been declining and replacement of older population with younger population has been much slower. The baby boom generation is closer to retirement age. Life expectancy has also risen in economies because of advances in healthcare and medical facilities. The developing and least developed economies have favorable demographics as higher fertility levels lead to younger population joining the workforce. The developing countries are going through a similar transition which the developed economies went through in their high growth phases.

If we look at the break up of the total dependency ratio, in developed economies the rise is mainly because of rise in old age dependency ratio (Figure 3). Hence, even going forward things are not positive for them as ratio of young population is not expected to rise. In case of developing economies, situation is much better and there is a healthy replacement rate (Figure 4).

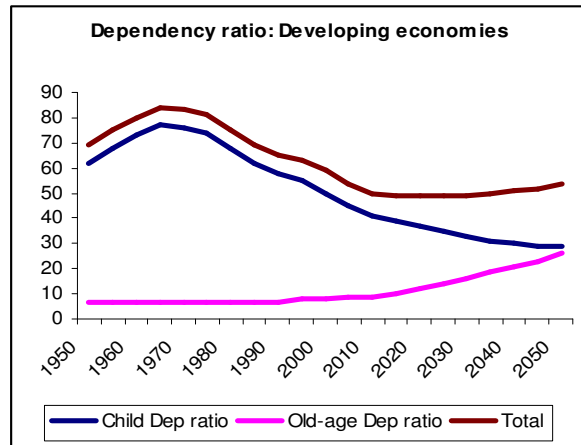


Figure 3



Source: UN

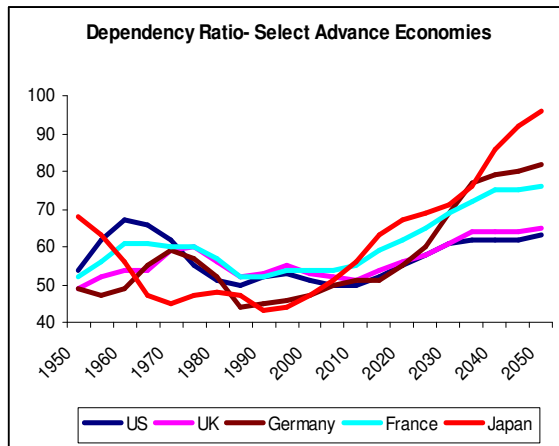
Figure 4



Source: UN

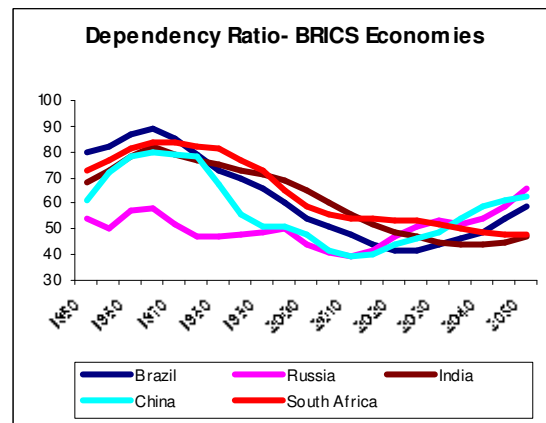
Within developed economies, some economies are critically placed especially Japan and Germany (Figure 5). In Japan the dependency ratio is expected to increase from 56 in 2010 to 96 in 2050. In Germany it is expected to rise from 51 in 2010 to 82 in 2050. In US and UK the demographics are more favorable with dependency ratio touching 63 for US and 65 for UK in 2050 respectively.

Figure 5



Source: UN

Figure 6



Source: UN

Comparing these with developing economies (Figure 6), we can see the difference. Where we see dependency ratio rising for advanced economies in 2010, we see the ratio declining for most BRICS economies from 2010 onwards. By 2050, the ratios rise, but still are expected to be much lower than advanced economies. In case of South Africa and India the ratio remains below 50 even in 2050.

On analyzing the break-up of dependency ratio, in case of advanced economies, the rise in dependency ratio is mainly on account of rise in old age dependency. For instance in Japan, old age dependency ratio is expected to be 74 in 2050, forming 77% of the total dependency ratio. In Germany the same figures are 59 and 72% respectively. Whereas in the case of developing, it is



different with higher contribution coming from child dependency ratio. For instance, in South Africa child dependency ratio is 33 and old age dependency ratio is 15 in 2050. In India the same figures are 27 and 20 respectively. This is similar to the aggregate trend we saw for developed and developing economies.

## Impact of Demographics on Advanced Economies

The shift in demographics brings challenges to both advanced and emerging economies. Let us discuss these challenges in brief:

- **Short-term challenges:** The short term challenge is that worsening demographics might make recovery from the 2007 recession a prolonged and complex one. This was seen for the first time seen in Japan's long crisis that started in 1990s and continues till date. Lot of analysis and suggestions were given to Japan which were implemented as well albeit with a lag. But still the economy could not really recover barring some spurts followed by another decline. This sluggishness was blamed on passive Japanese policymakers but demographics played a critical role in the slow recovery.

Masaki Shirakawa, Governor of Bank of Japan has recently started explaining this issue in his speeches (This Time May Truly Be Different: Balance Sheet Adjustment under Population Ageing, January 2011). He explains that Japan's demographic cycle started turning in early 1990s just at the time the bubble burst and the crisis started. In earlier recessions in Japan, the economy recovered quickly as central bank cut rates as younger population spent and invested. In 1990 recession, strong recovery was not possible because of this change in demographics.

- The older population was more interested in saving for the future.
- The property prices also do not recover as old people do not buy houses.
- Then in recessions, people migrate to more prosperous regions. With old age, this mobility is limited as well.
- Larger percent of old age population also leads to depletion of human capital which leads to decline in overall productivity levels.

Hence, the Japanese economy did not recover despite interest rates being pushed to zero and expansion of central bank's balance sheet. The balance sheet adjustment became more complex with demographics not being in favor. Demographics was not the only factor but a very important and ignored factor for the Japan's prolonged recession.

Shirakawa points how this similar situation is now occurring in other advanced economies as well. In US crisis started in 2007 and its dependency ratio starts to rise in 2005-10 period. In troubled European economies like Greece, Portugal, Spain etc the ratios have started to rise in 2000-05. Even for China, the ratio is expected to rise in 2010-15 period.

Going by Japan's analogy, recovery from recessions for these economies is also likely to be prolonged. The pace of recovery would differ as each economy is unique. For instance, US has better demographic profile going ahead compared to other European economies. Hence, it might be better placed compared to other European economies.



- **Long-term challenges:** The issue of demographics is not new and was a hot topic before the crisis. Advanced economies knew of this upcoming challenge and there was a lot of discussion and research looking to understand and mitigate the issues. Jean Claude Trichet, President of European Central Bank summarized the issues in a speech in 2007 (The monetary policy implications of ageing, September 2007). He pointed to following effects of population ageing on the economy:

- *Impact on public finances:* This was the centre of discussions on population ageing before the crisis. The problem was expected to be severe as economies would have more number of people asking for pensions and fewer contributing to it. And with old age people increasing, demand for healthcare and Medicaid also increases. OECD Economic Policy Committee's Ageing Working Group estimated in 2005 that in absence of significant reforms in pension systems, the costs related to old-age pension schemes will push government expenditure up by 2.6% of GDP in the euro area by 2050. Quantitatively, public healthcare costs were projected to increase by between 1% and 4% of GDP over the period 2000-2035, exacerbating the fiscal imbalances just discussed. As these projections were given in 2007, fresh estimates might raise additional concerns as the public finances have worsened considerably in this crisis. The idea is the impact was expected to be very high even despite the crisis.

Some economists assess that economies understate their debt levels by not including all the future liabilities due to old age in their budgets now. When these are included, debt levels are much higher than reported. Laurence Kotlikoff of Boston University estimated US debts at \$65.9 trillion including social security, medicaid etc. much larger than reported \$ 14 trillion. This figure was given in 2006 and with the crisis could be much larger. Richard Fisher, Dallas Fed President, in a speech pointed to Dallas Fed staff estimates at a present value of over \$80 trillion. The former comptroller general of the United States, David Walker, estimated gap to be at \$53 trillion fiscal hole, equal to \$455,000 per household and \$175,000 per person.

- *Impact on Savings:* As majority of the people age, they would need more savings to finance their expenditure in the old age. One of the main tenets of the life-cycle theory is that individuals try to smooth consumption over their lifetime. Population ageing increases the proportion of households with a relatively lower savings rate in the economy and therefore tends to reduce private savings. It is estimated that a 10% increase in the old-age dependency ratio could reduce the savings rate by around 9%.
- *Impact on Investments:* The productivity of physical capital is typically influenced by two factors: technological progress and the capital intensity of the production process. While it is not straightforward to identify clear links between ageing and technological progress, the literature has explored how demographic developments could affect capital intensity. The degree of capital intensity in the economy depends on the relative abundance of the different productive factors: the capital stock and the labour force. All other things being equal, ageing would presumably generate a fall in the rate of growth of the labour force, if not a contraction in its size. The production process would therefore become more capital intensive and the relative productivity of new capital purchases would be lower. Consequently, investment rates are expected to decelerate, and the growth rate of capital stock could gradually decline to better accommodate the relatively scarcer labour force.



- *Impact on interest rates:* It would depend on whether the impact of savings or impact of investments is greater. As both are expected to decline, it would matter which happens first and faster. If investment decelerates or falls faster than domestic savings – at each level of aggregate income – the real interest rate that clears the market for loanable funds is expected to fall, since it is difficult for savers to find profitable investment opportunities. Alternatively, if domestic savings were to fall faster than investment, the real interest rate would rise to reflect the relative scarcity of financial funds.
- *Impact on Financial Markets:* With ageing population questions were asked on which kinds of financial assets would be in demand. Economists said that demand could shift to fixed income instruments of longer term. Most economies only have sovereign bond market which has lower returns. Suggestions to improve the corporate bond market were given so it could give additional returns to retirees.

Before the crisis, some economists had suggested that expectations of such developments may have already started as yield curve had flattened. As people start investing in long term assets, prices of long term bonds fall leading to flattening of the yield curve. But then there are many factors for the same and one should be careful in stating it as the only factor.

- *International Mobility:* Economists have been suggesting advanced economies to allow immigration from developing economies to mitigate the demographic pressures. But it looks remote as immigration is not appreciated by local population and immigration laws are pretty stiff especially in Europe.
- *Impact on Monetary Policy:* Ageing Populations would depend more on wealth for their consumption needs and higher inflation might lead to lower real value of assets. Hence monetary policy would have to be even more committed to fighting inflation.

The other impact is expected change in demand patterns. With rising share of old age population, demand in areas such as health care and nursing, tourism and leisure rises as well. Shirakawa points out that in Japan the turnover of fitness clubs has increased by nearly 40 percent in the past ten years, reflecting the increase in health consciousness due to population aging. But as other areas like health care and nursing care are highly regulated supply capacity is insufficient and there is a mismatch of demand and supply. Hence, there is ample scope to tap potential demand in these areas.

Needless to say the challenges are interconnected as if short term challenges persist, it would lead to increase in long term challenges. Likewise, a focus on long term could make addressing the short-term challenge difficult. For instance, say recession is prolonged and policymakers want to push a fiscal stimulus. It might not be possible if one estimates how fiscal stimulus will lead to rise in public debts in future and make paying pension liabilities more difficult. This was precisely what happened in Japan in 1990s as well. Similarly, following imprudent policies over short-term could worsen the long-term challenges.

Japan has not been able to solve this problem which is a testimony to the complexity over the whole issue. The other economies are better placed than Japan but that does not undermine their share of problems.



## Impact of Demographics on Developing Economies

- **Realising the demographic dividend:** The challenge for developing economies is to convert their demographic advantage into a dividend. This would involve providing education and employment opportunities to its young population. As the population sizes are very large one cannot even take lessons from the developed economies who gained from demographic dividends with much smaller population.

Various studies show how the emerging and developing economies can grow faster because of this demographic situation. But the key is to make policies which can help realize the dividends. Otherwise it could lead to its own sets of problems and turn instead into a discount.

The large population sizes would imply that government would have to provide large supply of opportunity sets to its population and allow people to become skilled in their respective jobs. Then they would have to create a stable business environment so that the skilled population could be employed. This would involve massive investments in overall infrastructure. Government participation would be critical and fostering partnerships with private sector would be the way going forward. The scale of investments and managing the same would pose a major challenge for developing economies.

- **Ageing not limited to developed world alone:** World Bank in a recent report (Some Consequences of Global Aging, 2011) says ageing is actually a global problem. In the period 1950-2010, life expectancy at birth grew by 11 years in developed countries, but increased much faster by 26 years in developing countries. Further gains are anticipated in the coming decades. Some developing economies like East European ones are going to face this ageing problem before becoming an advance or high income economy. Hence they may not have buffers and income levels like advance economies as well. This is unlike the experience of advance economies.

However, there is no need to panic or treat it as a time bomb issue. The governments can mitigate the problem with smart policies in labor markets, social security, long-term care and public health in place. There is no one size fit solution and each economy will have to build its safety net based on basic principles but tweak it as per their economies uniqueness.

## Way Going Forward

The 2007 recession was severe and it has worsened the huge problem of financing the pension liabilities in future. The fiscal deficits and debt levels have increased substantially in those economies that were required to start planning for these upcoming demographic challenges. Now, with high debt levels all this planning has to be reevaluated. A major task ahead of policymakers is to revisit their earlier calculations and update their estimates for pension and other demographics related liabilities. Most governments prefer not to include these liabilities in their budgets understating their debt levels. This understates the scale of the debt problem as well. The governments need to present a more realistic and holistic assessment of their liabilities.

The above analysis also highlights how demographics can impede recovery from a financial crisis/recession. Recessions can also push an economy into higher debts like we saw in this recession making future allocations for demographics difficult. As financial crisis would continue and we might see recurrences till 2050, it is only expected to create further problems for the governments in future.





One suggestion from this crisis is that governments build a countercyclical fund which helps in mitigating the impact of the crisis in future. Similar countercyclical funds could be initiated for meeting the challenges of demographics as well.

Demographic change is a slow process and does not have an immediate impact on an economy. Hence, policymakers could be tempted to postponing action to address the issues. It is like we see in case of monetary policy. A central bank might be tempted to trade-off high inflation for an increase in growth, leading to higher inflation in future. To address this issue, central banks are made independent/autonomous of the government and are required to focus on inflation (see our earlier report - **Central Bank Independence - A major victim of the 2007 crisis, December 2010**).

Likewise, ignoring demographics might not look like a concern over a short-term but could pose serious concerns over long-term. One can still work around to mitigate inflation but with demographics even that cannot be done as it would require huge investments. Some institutional changes like we saw in the case of central banks could also be done to tackle this problem. For instance, we could have an agency which regularly monitors the demographic trends and policies being undertaken to mitigate the challenges in future. It could also be required to regularly release publications on the same. The governments can choose to either create a new agency or add these tasks in an existing agency.

## **Conclusion**

The above note highlights the importance of demographics in global economy prospects going forward. It was at the centre of discussions before the crisis but was sidelined as crisis management became the attention for all policymakers. The attention has to shift back to this important issue. The problem is also not going to be limited to developed economy but spread to developing economies as well. They need to start preparing for the challenge as well.





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