Impact of Demographic Transition on Stock Markets - A Review Perspective

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Abstract:
Curiosity is the starting point of all research. Does demographic transition have an impact on stock markets and, if yes, then to what extent?; was the preliminary question. This inquisitiveness led to this unique research.
The demography of a nation, the composition of its population plays a vital role in reflecting that nation's economic growth. This contemporary commercial issue is multidisciplinary in nature. The financial aspect of stock market returns and the economic and statistical concept of demographic transition are linked together.
This exploratory research is carried out to study the degree to which the demographic variables like age structure of the population, dependency ratios, and growth rates are linked; and related to the stock markets and its returns over the years. This paper reviews the various research work done internationally and then describes the extent of relationships that exist between the parameters under study.

Keywords: Demographic transition, stock market returns.

1. Introduction

Curiosity is the point of origin of all research. Does demographic transition have an impact on stock markets and, if yes, then to what extent? ; was the preliminary question. This desire for knowledge led to this unique research. This contemporary commercial issue is multi-disciplinary in nature. The financial aspect of stock market returns and the economic and statistical concept of demographic transition are linked together.

The demography of a nation, the composition of its population plays a vital role in reflecting that nation's economic growth. The savings and investment patterns of the country depend upon its age structure to quite a significant level; is what this paper tries to reveal. On the basis of the basic lifecycle theory, the young do not invest much as they do not have spare revenue, whereas the middle population is the foremost depositor in a variety of government, non government schemes along with the stock market. The elder population has very little income, so they invest in such financial options which are comparatively very less risky and instead prefer to reap the bounties of their past investments. Several studies have been done to explore the impact of demographic transition on stock market of the country at global level. This area of research has remained almost untouched in terms of Indian perspective.

2. Objective of Research

This paper aims to review the global research work carried out to study, the degree to which the demographic variables like age structure of the population, dependency ratios, growth rates are linked and related to the stock markets and its returns over the years.

3. Research Methodology

- Research Design: This exploratory research work reviews the various literatures available and then describes the type of relationships that exist between the parameters under study.
- Data Collection Method and Sources: Secondary data was collected from sources like, World Bank, Official web sites of stock markets of the relevant country, Journals and Research Publications.
- Data Analysis Variables: Demographic variables related to age structure of the population, dependency ratios, growth rates of the country and Stock markets returns of various global markets.

3.1. Global / International Research Supporting the Perception, Demographics Do Have an Impact on Stock Markets
Various studies have been done on the concept of population studies in not only statistics but also in commerce and economics, however very less is known or widely accepted that demographics have an effect on asset markets. This research paper adds a specific

dimension to the asset markets i.e. stocks markets and its returns and takes us through a journey of various related research done around the globe over the years.

One of the first research done, revealing a link between asset prices and different phases of the life cycle model was conducted by Modigliani and Brumberg in the year 1954. They developed the life cycle hypothesis which states that a consumer's consumption and saving decisions aim to smooth consumption over their lifetime. The changing trends in asset accumulation and portfolio choices over different phases of the life cycle lead to a changing supply-demand dynamic for assets, contributing to variation in asset prices.

In the 1960 not much research seems to have been done. It was in 1975 when, Cohn et al found that an individual's risk aversion is related to demographic variables such as age, gender, marital status and socioeconomic variables such as education, income and wealth. Coming to the 80'z; Morin and Suarez in the year 1983 found that an investor's lifecycle plays a prominent role in portfolio selection behavior and risk aversion increases uniformly with age.

The 90'z saw reasonable amount of research been done in this field. A very important contribution in studying the relation between demographic variables and stock markets can be attributed to Bakshi and Chen. In the year 1994, Bakshi and Chen studied and tested the relationship between demographic changes and asset prices in the US during 1900-1990. They tested two hypotheses. The first is the life cycle investment hypothesis: investors allocate a larger part of their wealth to housing when they are young and to financial assets as they grow older. The second hypothesis is that an investor's risk aversion increases with age and thus risk premium should be positively correlated with average age. Their tests use Euler equations as well as a two-factor model based on consumption growth and percentage change in average age.

In the year 2003, Ang and Maddaloni used both a long sample from the year 1900–2001, with five countries and a short term sample from 1970–2000 with 15 countries to study the relationship between excess stock returns (at one, two, and five-year horizons) and log changes in the following demographic variables. In the very next year, Ameriks & Zeldes examined the empirical relationship between age and portfolio choices for allocation to the US stock market. They were interested in how individuals adjust their exposure to the stock market as they age. They noted that there was a tendency for older individuals to shift completely out of the stock market around annualizations and withdrawals. In the same year i.e. 2004, Goyal studied the link between population age structure, net outflows from the stock market and stock market returns in an overlapping generation's framework.

Liu and Spiegel in the year, 2011 examined the extent to which aging of the US population creates headwinds for the stock market. They looked at the ratio of the middle age cohort (aged 40- 49) to the old age cohort (aged 60- 69) -M/O ratio. They estimated that the M/O ratio explains about 61% of the movements in the P/E (price /earnings) ratio of the S&P 500 from 1954 to 2010 and concluded that the M/O ratio (Middle age cohort/ Old age Cohort) predicts long-run trends in the P/E ratio fairly well. Their model-generated path for real stock prices in future implied by demographic trends is quite bearish.

3.2. Important Revelations of the Types of Relations between Demographic and Stock Market Variables from a Global Perspective
On the basis of the literature reviewed above the following are the major revelations that describe the impact /extent of relationships that exist between the parameters studied by the various authors:

- In the year 1994 Bakshi and Chen found strong support for their lifecycle risk aversion hypothesis and a positive and statistically strong relationship between U.S. stock excess returns and growth in the average U.S. population age.
- In the year 2003 Ang and Maddaloni used the concept of pooled regressions, and their results display a strong and negative effect for the fraction of retirees in the population (65+). Interestingly, the authors found an opposite and positive result in isolated regressions for the United States and the United Kingdom. Every important result of this paper showed that by pooling data from five countries gives almost the same power as increasing the sample size of the United States by five times.
- Goyal in the year 2004 used US data and he found that stock market outflows are positively correlated with changes in the fraction of old people (65 and over) and negatively correlated with changes in the fraction of middle-aged people (45 to 64). The population age structure also adds significant explanatory power to excess stock return predictability regressions.

Over past several years, many other researches must have been done in various countries and that too in diverse languages, however due to time, resource and language constraints only a few imperative studies have been sited here.

4. Conclusions

With respect to demographic transition of any given country of the world, the youth of today, will be the adults of tomorrow, similarly the adults of today will be the senior citizens of tomorrow, with this logic, the savings and investments patterns, the risk taking ability of the population changes. Each countries government must study its population composition and accordingly plan and formulate its financial and economic policies, so that they can work towards optimal utilization of their Demographic scenario. Hence our working research paper, based on the literature, reviewed clearly reveals that the demographic transition, the demographic age structure does have great impact on the stock markets of the country. With special reference to our country, India has undergone a significant transition as regards its population structure over the past few decades. This has led to a noticeable impact on the macro and micro economic factors affecting the growth and development of the country. The increasing rate of Demographic Dividend in terms of population in the working age group may have its contribution to the changes in the savings and investment patterns of the country. It can be said that as of today in the year 2016 (2011 census), 60 percent of our population is below 35 years of age, it's the best phase to increase savings and investments in the economy, which will further pump in investments in the stock markets. India! let's make the best use of our demographic dividend.

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