



International Center for Pension Research

Research Report Number 4-2002

By

**Professor Mukul G Asher
National University of Singapore**

International Center for Pension Research is a non-profit global organization dedicated to pension research. For more information, contact the Director Dr. Tapen Sinha (tapen@itam.mx) or see the website icpr.itam.mx

Behavioral Economics and Retirement Well-being In Asia

**Mukul G. Asher
Professor
Public Policy Programme
National University of Singapore
AS 7, 5, Arts Link,
Singapore – 117570
E-Mail: mppasher@nus.edu.sg
Fax: (65) 6778-1020**

**August 2002
Version 1**

Word Count: 4,408
File Name:

Abstract

In recent years, insights from behavioral economics, which incorporates observed behavior of homo sapiens into analytical framework, has been increasingly applied to a wide range of issues. This framework which borrows from psychology and other disciplines has challenged many of the explanations of human behavior based on the traditional concepts of economic rationality. This paper analyzes the relevance of such insights for retirement financing in Asia. Rapid individual and population ageing have made achieving social security in old age among the major challenges facing Asia. Two questions of particular relevance for retirement financing in Asia are the following. First, to what extent are mandatory savings schemes, which enable retirement savings to be separated from other types of savings, and are consistent with psychological theories of savings, prevalent in many Asian countries? Second, what factors explain the investment behavior of households in Asia favoring short-run and speculative investments over long-term investments? The paper concludes with suggestions for enhancing retirement income security in Asia.

I. INTRODUCTION

This paper analyzes the implications of behavioral economics on retirement well-being in Asia. Research suggests that non-financial aspects such as opportunities to socialize and network, health status, and intra-family control over retirement financing also have significant impact on well being of the retirees (Lowenstein, Prelec, Weber, 1999). Therefore, in retirement (as in non-retirement), the emphasis should be on well being and not just on income (or consumption) as conventionally assumed.

This paper is organized as follows. First, a brief discussion of the nature of behavioral economics is provided. This is followed by the reasons for the importance of retirement financing in the world in general, and in Asia in particular. Certain key ideas of behavioral economics as they apply to retirement arrangements in Asia are then discussed. Finally, suggestions are offered to modify some of the existing retirement arrangements in Asia to take advantage of the insights offered by behavioral economics.

II. BEHAVIOURAL ECONOMICS: A BRIEF INTRODUCTION

Behavioral economics is an emerging field that blends insights from psychology, sociology, and economics to analyze rigorously the growing evidence that the behavioral of the homosapiens does not often correspond to that of homo economicus assumed in the currently dominant economic theory. In behavioral economics, not only conscious or explicit information plays a role in decision making process, but also implicit or unconscious components are considered to be important and incorporated in the analysis.

Behavioral economics is currently primarily a North American phenomenon, with about one-fifth of the graduate students in the most prestigious universities specializing in it. The graduate students however are from many different countries. The opportunities for intensive interaction between mainstream economics students and those in behavioral

economics provide a fertile ground for advances in both mainstream and in behavioral economics.

That the most prestigious economics departments are at the center for research and training in behavioral economics is encouraging. As is well known, existing dominant paradigm is seriously challenged when it can not satisfactorily answer important policy questions of the day. Thus, great depression and prolonged periods of unemployment in the 1930s enabled Keynesianism to overthrow then existing paradigm which assumed full employment as normal equilibrium outcome, and admitted existence of only short-run cyclical unemployment. Similarly, stagflation in the 1970s resulted in the decline of Keynesianism. The conventional economic theory is not able to satisfactorily explain booms and busts, and other phenomenon such as the level and volatility in stock markets (Shiller, 2001; and Wolman and Colamosca, 2002)). It also can not explain other types of micro-behavior, such as savings behavior. The conventional theory also does not incorporate the importance of perceptions, particularly concerning fairness, in analyzing individual behavior.

The term “irrational exuberance”, popularized by Robert Shiller in his book by that name (2000), vividly captures the skepticism about the efficient market hypothesis which has dominated thinking about the stock market in recent decades. The 1987 stock market crash, the on-going sharp decline in stock prices, and the recurrence of asset bubbles¹ have made this skepticism even more widespread among the general public.

The efficient stock market hypothesis can provide fair valuation of stocks if information available is reasonably complete and essentially accurate, and if economic agents are rational. However, on both these counts, there are ample grounds for skepticism, and therefore use of this hypothesis as a basis for decision making may be inappropriate.

As Shiller concluded in a recent article: “... .. human pattern of less-than-perfectly rational behavior are central to financial markets behavior, even among

investment professionals, while at the same time there is little outright foolishness among investors (2002, p.14). Moreover, information revolution, particularly omnipresent and virtually instantaneous communication through television and internet, has meant that intemperance occurs faster and more often than even before (Biggs, 2002). This could also contribute to greater volatility in assets markets.

In addition to uncertainty, i.e. events that are essentially unique, and whose probability can not be conventionally estimated, creative accounting and in some cases deliberate falsification of financial information, have seriously undermined confidence in the quality of information available for financial (and economic) decisions, and for corporate surveillance and control. The view, encouraged by conventional assumptions concerning rational economic agents, that any business strategy or activity that does not maximize monetary reward is suspect, is undergoing reexamination in the aftermath of the recent failures of corporate governance, most notably in the U.S.².

The golden age of models employing exclusively rational economic agents (some detractors call economic agents in these models hyper-rational) began with the rising importance of the mathematical economics in the 1940s. The earlier economists, Smith, Marx, Fisher, and Keynes incorporated complex psychology in their reasoning and thinking. But since the 1940s, equations rather than words have become the main language of economics with predictable sharp decline in the ability of the economics profession to communicate with the non-economists. The advent of the behavioral economics is likely to imply only a modest comeback for words however. The likelihood is that mathematical models will become more complex, and enormous computing power will be used to accommodate even more complex game theoretical situations in economic models; and economic experiments will also become more elaborate.

Nevertheless, behavioral economists are making a welcome and on the whole overdue healthy attempt to bring emotions such as temptation, fear, spite, anger, love, inertia, lack of self control, over-confidence, excessive optimism and pessimism, wishful

thinking, the false consensus effect (i.e. individuals have the tendency to think that others are just like them), the curse of knowledge (which is that once we know something, we can not imagine ever thinking otherwise), and other such ideas and concepts into economic theorizing and reasoning.

The term ‘rationality’ in economics has two main ingredients – self interest (broad definition); and consistency in preferences and choices (narrowly defined). Individuals decide what they are seeking and having done so single mindedly workout how to get as much as possible. The behavioral economists are challenging both, arguing that spotting patterns, categorization and predictive rules of thumb are for more widespread and not always consistent with the rationality as defined above.

This does not mean that the behavioral economists are completing rejecting today’s mainstream economics. As Thaler (2000) has argued, behavioral economics will lead economists to more clearly distinguish between normative and descriptive theories. Normative theories do generally characterize rational choice, such those including axioms of expected utility theory and Bayes’ rule. Descriptive theories on the other hand try to characterize actual choices. They are therefore more data driven than normative theories.

The difficulties arise when theories which are normative (such as life-cycle saving theory) are also used to describe actual choices. This theory postulates that the amount a person saves each year depends not just on current income but on lifetime economic circumstances. Individuals smooth their consumption over lifetime by typically savings during the working years and dissaving during the non-working years. Bequest and inheritances play an insignificant role as motivations for savings in the life cycle theory..

III. IMPORTANCE OF RETIREMENT FINANCING IN ASIA

It may be useful to briefly recapitulate the evidence on demographic trends in the world (United Nations, 2002).

- In 2000, about 0.6 billion people, 10 percent of the world's population were over 60 years of age.
- By 2025, the number will nearly double to 1.18 billion, around 15 percent of the world's population; and by 2050, the number will be 1.96 billion, around 21.1 percent of world population.
- In 2000, ageing female population was 11.1 percent of world population while the corresponding male population was 8.9 percent. By 2025, 16.3 percent female and 13.6 percent male population will be in old ages. By 2050, the number will nearly double - 22.7 percent female population and 19.4 percent male population of the total world population.
- In 2000, the life expectancy at 60 years of age, for total population was 18.8 years. The number 20.4 years was for female population and 17.0 years for male population. By 2025, these numbers will be to 21.0 years for total population; 22.8 years for female population and 19.1 percent for the male population. As a result, gender issues are intricately linked with the old age security arrangements.
- Most of the growth will take place in developing countries, over half of it in Asia and more than a quarter in china alone.
- Many developing countries will have 'old' demographic profile at much lower level of per capita income than the industrial countries. Thus, by the middle of this century, elderly in china will number around 250 million and in India, around 180 million. These are staggeringly large numbers.
- The problem in the developing countries will not just the level of elderly population but the rapid pace of aging. For example, while in the United States it took 81 years 60 years and over to rise from 10 to 20 percent of national population, in Singapore the corresponding increase will take 18 years, in Korea 23 years, in Thailand 24 years, in Indonesia 26 years and in China and Taiwan 27 years,.

- Almost half of the world's population is now in countries with below replacement rate fertility levels (less than 2.1 children per woman). These include nearly all countries in Western Europe, Russia, many parts of Eastern and Central Europe, major parts of Asia including China, several states in India, Canada, Australia and parts of Latin America. U.S. is a major exception largely due to its willingness and ability to absorb net immigration over a substantial period.
- Thus, most of the high income countries, and several low and middle income countries have below replacement fertility rate.
- The above implies that over time the absolute population will begin to fall, if net immigration is not taken into account. These trends, if they materialize, will have profound consequences for societies, economies, and politics of these countries. Singapore is already grappling with this issue as its TFR has been below the replacement rate since 1975; about a quarter of its workforce is foreign; and net immigration is high bringing about subtle but profound changes in society (Asher, 2002a). Japan is expecting even more severe symptoms, with its population expected to begin declining in next decade.
- The life expectancy has also been rising. It is estimated that life expectancy at birth for men for the world has a whole will rise from 61 in 1998 to 67 in 2025, and for women 65 to 72. In high income countries, average age of women may soon be above 80 years of age. The gender issues are inevitably tied up with social security. Individual aging will also significantly impact in the health costs.
- The consequences for financing the elderly will also be profound. In countries such as china, enterprise based social security system act as severe constraint in state-enterprise reform essential for transition to a more market-consistent economy (Asher and Newman, 2002c).
-

IV. MAIN CHARACTERISTICS OF RETIREMENT FINANCING IN ASIA

In recent years a consensus has evolved among social security experts that a multi tier system is preferable to a reliance on a single tier (Fox and Palmer, 2001). A three-tier system has become a norm in this framework. The first tier is tax or contribution-financed redistributive tier with social insurance principles. This tier is designed to alleviate poverty and to provide protection to life-time poor. Its contribution to total retirement financing is expected to be small, perhaps in the range of 20 to 30 percent of the replacement rate³. The second – tier is the mandatory savings tier, designed to ensure that individuals do save for retirement from an early age. The third is a tax – advantaged voluntary savings tier which can be used only for retirement.

In Asia, in general, the three-tier system is yet to take deep root, even in advanced countries such as Japan and Korea. In these countries, the second and the third tiers are relatively underdeveloped. In high income economies of Hong Kong and Singapore and in Malaysia and Indonesia there is near exclusive reliance on mandatory savings pillar, with consequence lack of protection against longevity and inflation risks, lack of survivors' benefits, and inadequate replacement rates even at the time of retirement. The arrangements in these countries are particularly discriminatory against women. This is because women as a group have lower exposure to labor force during their life time; and when they do, they as a group earn less than men, even when all other variables are controlled. On the other hand, women tend to live longer than men, and therefore require greater resources in old age.

The acceptance of social insurance principle to be applied uniformly, i.e. For workers in both private and public sectors, is also absent in much of the non-OECD Asia, with Philippines and more recently Thailand being exceptions. But even in these two countries, the second and the third tier remain relatively weak. India has been attempting to develop a multi-tier system. But it shares with Southeast Asian countries need to enhance professionalism and take a system-wide perspective in encouraging and

developing its provident and pension funds (Asher, 2002b). The formal social security schemes in Asia are thus deficient in terms of risk covered, level of protection offered for the risks which are covered, and the coverage of the population; and many suffer from lack of professionalism, customer service orientation and application of modern portfolio management principle and practices.

An important characteristic of the retirement financing arrangements in Asia has been the reliance on family, especially children. However low fertility rates, industrialization, urbanization, changing attitudes and expectations leading to more individualistic lifestyle are gradually undermining this reliance even in more traditional and relatively low income Asian countries (Asher, 2002b)

V. BEHAVIORAL ECONOMICS AND IMPLICATIONS FOR RETIREMENT FINANCING IN ASIA

The importance of behavioral economics and by implications limitations of rational models, are particularly evident in the area of retirement financing. As Matthew Robin has argued:

“Formal economics has traditionally assumed that people plan for retirement with perfect rationality, under the constraints of significant uncertainties, and to do so with accurate forecast of what contributes to their subjective well being. If there is a single realm where economist ought to be wary of the rationality assumption, it is retirement planning. One of the arguments used ... to dismiss research exploring, the limits of rationality assumptions, - that through feedback from repetitive decisions people (eventually) get things right – is not much of an argument in the context of retirement planning, because no 30-year-old decides how much to save twice. A second common argument is that people pay more attention to things that actually matter, and are there for more likely to get things right on important issues... The evidence ... indicates that people spend remarkably little time thinking about retirement”.

The mandatory savings schemes so prevalent in Asia and Latin America, as well as such plans as 401K and individual retirement accounts (IRAs) are more consistent with reasoning of behavioral economists than with life cycle savings hypothesis of fully rational economic agent school. While this hypothesis does have limited role for

institutional practices, such as universal social security provided by welfare states, it does not explain how expectations are formed.

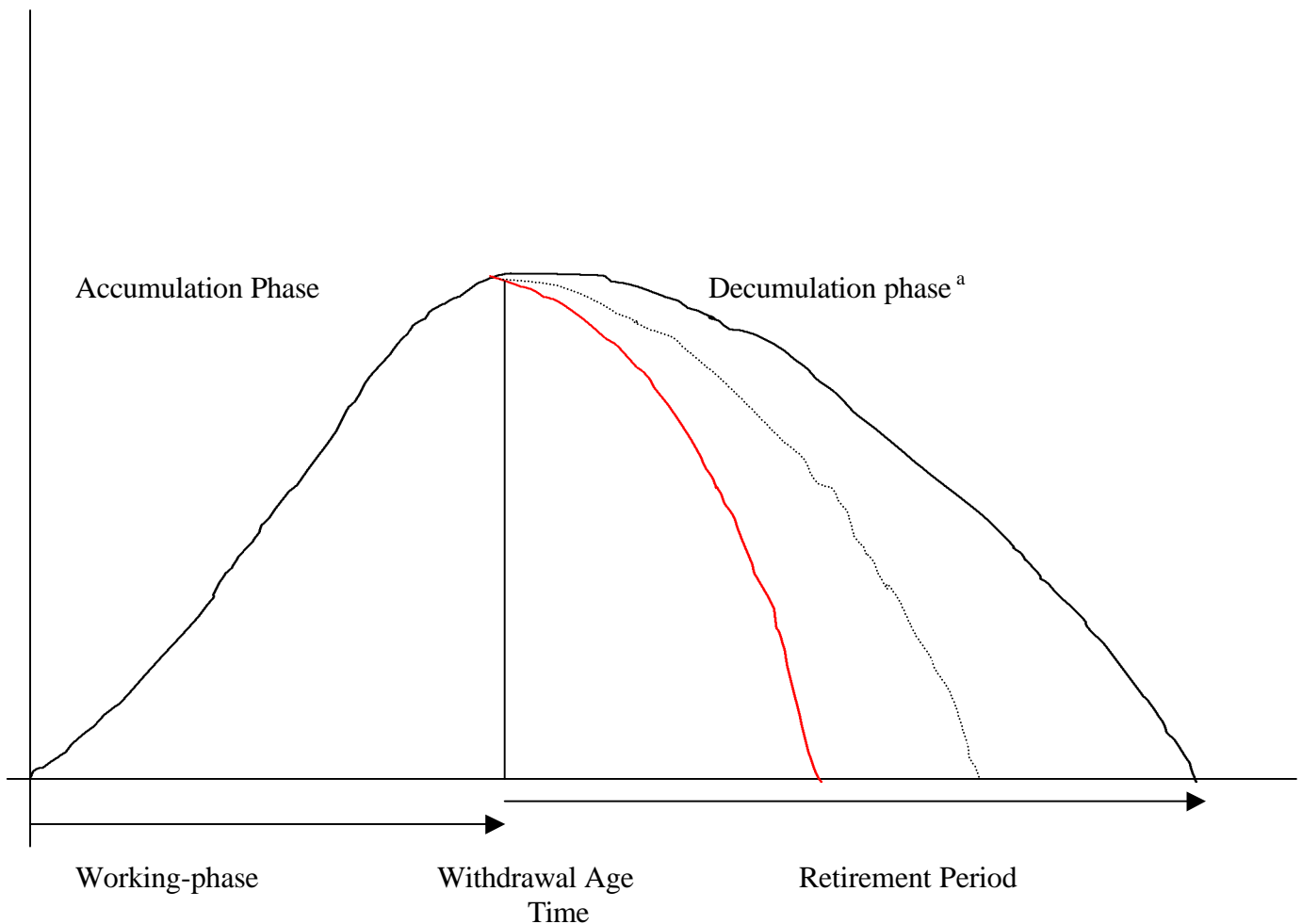
Behavioral economists explain individual savings in terms of mental accounting, which is a set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities (Thaler, 1998, p.12). The mental accounting framework incorporates social, cultural, and experiential influences and not just demographic and economic factors. It emphasizes not just the level but also the composition of income and wealth in explaining saving behavior. Purely cultural factors however should not be overemphasized. For example, in Japan, savings rates have varied enormously in the post-war period; while in 1960, Singapore had negative savings, while today it has among the highest national savings rates, approaching 50 percent of the GDP in the world (Asher, 2002a). There is a large literature on this topic for the industrial countries, particularly the U.S., but little research has been undertaken in the developing countries.

The Asian countries would do well to analyze whether their public policies and institutions are appropriate for attaining the desired savings levels and their, composition, taking advantage of the insights from behavioral economics. For example, too liberal a credit for consumer purchases may result in invasion of mental accounts reserved for retirement; and so would encouragement of consumerist culture, with its emphasis on perpetual dissatisfactions with existing material goods and services, and seeking mental fulfillment in acquiring continuous flow of goods and services.

In many Asian countries, particularly in South Asia, and the Philippines, government and business savings is particularly low, while household's savings constitutes a disproportionate share. So breakdown of psychological restraints towards excessive consumption by middle class in these countries could result in even more inadequate savings for development.

The Asian countries have tended to emphasize mandatory savings schemes in their retirement financing arrangements. As shown in figure 1, such arrangements have two phases, accumulation phase and the decumulation phase. While the mandatory nature of savings is consistent with the insights of behavioral economics, these countries may consider how to utilize these insights in the design and operation of the two phases.

Figure 1: Accumulation and decumulation phases of Provident Funds
Cumulative Balances \$



Note: a. Decumulation phase: the funds accumulated can be spent rapidly or slowly. Death may occur before the funds are exhausted or it may occur long before the funds are exhausted. There is therefore a need to protect against longevity risk. As it is the

purchasing power of the funds that is relevant, protection against the inflation risk is also desirable.

Cumulative Balances = Net contributions (contributions minus withdrawals), plus interest credited on accumulated balances.

Source: Author

In the accumulation phase in the Figure 1, the rate of return obtained on total balances accumulated by an individual has a crucial role to play. A low real rate of return (nominal rate less inflation rate less transactions costs of investments) implies that final accumulated balances will be low, and vice versa. Thus, a \$1000 invested in year 1 will become \$43,873 after 20 years at real rate of return 7 percent per year but only \$20,861 if the annual return is 0.04 percent, and \$24,506 if the annual return is 1.9 percent (Wolman and Colamosca, 2002, Table 10.1,p . 197)

The above strongly suggests that in addition to enhancing financial (and pension economics) literacy of policymakers, administrators, financial market participants, and individuals, the actual investment strategies of provident and pension funds should take into account insights of behavioral economics. The general insights however, will need to be applied in the particular context of a country and in accordance with the prevailing macroeconomics conditions.

There is therefore a strong case for devoting considerable research efforts and resources in analyzing these issues in the specific context and social-cultural milieu of a country, rather than simply using the research findings for the U.S. Such research could assist the Asian countries in devising appropriate investment products and in design of provident and pension fund programs.

In the decumulation phase, most Asian countries have provisions for lump sum withdrawals of the accumulated balances rather than converting them to a periodic payment or an annuity⁴. Some countries such as Singapore require small portion of accumulation to be withdrawn in a phased manner, while some countries such as India incorporate in their provident funds a defined benefit pension component. The impact of

these arrangements on overall financial security in old age is however small, as they provide limited inflation protection.

Research in behavioral economics suggests that while individuals are capable of rational planning when large gain (which is what a lump sum withdrawal is) is being anticipated, once the event actually occurs, there is often a breakdown of will power, and self-control, and often the lump sum is used too quickly, or in some cases too slowly, leaving large unintended bequests. In Asian countries, it is however more common to find that lump-sum provident fund withdrawals are often spent too quickly and on things which do not enhance retirement security⁵. Ill-advised and excessive pre-retirement withdrawal provisions also contribute to this tendency (Asher, 2002b)

There are other aspects of design of retirement schemes in Asia which could greatly benefit from the insights arising from the literature in behavioral economics. An area of much relevance to Asia is research on allocation of expenditure in retirement based on who controls the funds and decision making. In conventional theory, intra-family decisions are not affected by which family member makes financial decisions. But in behavioral economics, this outcome which is based on rational theoretic assumptions is not accepted, In Asia, providing adequate property rights to women and getting income to them directly without the intermediation of males could be one of the avenues to enhance retirement income security for the women.

Another research area of relevance is the relationship between changes in income and well-being. It is the latter that should ultimately be of relevance to the analysts and policymakers. The research suggests that the quality of leisure activities in the retirement matter. Given the relatively low income levels when many Asian countries will experience ageing, traditional welfare state schemes which focus on money incomes are likely to be too expensive (the welfare of the old must be balanced by the welfare of the non-old), and too disruptive economically and socially. Thus, efforts to device appropriate support- groups enhance mobility through subsidized transport, formation of

community groups, fostering of trust and confidence, and promoting general public-spiritedness could help considerably in improving well being of the elderly without large financial outlay. These aspects, usually grouped under the analytical concept of social capital, have received considerable attention in industrial countries in recent years (Lin, 2001; and Dasgupta and Serageldin, 2000). But analysts and policymakers in Asia have paid inadequate attention to these aspects.

Behavioral economics is very data intensive. So if Asian countries wish to encourage and benefit from research in this area, they would need to consider information as a public good rather than a strategic instrument in the hands of the policymakers to be used for tactical purposes. Effective implementation of right to information laws and practices could assist in this regard.

The Asian social security systems are still at a developing stage. There is a recognition that simple imitation of the traditional welfare state mechanisms and programs are likely to be simply too expensive for universal coverage. There is therefore a strong motivation for using the insights of behavioral economics to plan and implement retirement financing mechanisms, and other policies towards the elderly. It is now upto the research community to accept the challenge and for policy makers to provide facilitating environment to undertake such research.

References

Aaron, Henry J., (2000), “Retirement, Retirement Research, and Retirement Policy” in Henry J. Aaron(ed), Behavioral Dimensions of Retirement Economics, Brookings Institution Press, Washington D.C.

Asher, M. G., (2002a). The Role of the Global Economy in Financing Old Age: The Case of Singapore. Tokyo: Asian Development Bank Institute, Research Paper, No.37, pp.24

Asher, M. G., (2002b). “Southeast Asia’s Social Security Systems: Need for a System-wide Perspective and Professionalism”, International Social Security Review, 4 Forthcoming.

Asher, M. G., and D. Newman (2002c).” The Challenge of Social Security Reforms in Transition Economies: The Case of China” Indian Journal of Social Development, Forthcoming.

Bernheim, Douglas, (1991), The Vanishing Nest Egg: Reflections on Savings in America, Twentieth Century Fund, U.S.A.

Biggs, B.M. (2002). “The Bearded Prophet of the Apocalypse”, Morgan Stanley Equity Research, European Investment Perspectives, May 29, 2002

Dasgupta, P. and Serageldin, I., (2000). Social Capital: A Multifaceted Perspective. Washington D.C.: World Bank 2000.

The Economist, (1999), “Rethinking Thinking”, December 18, p.67-69

The Economist, (1994), “Rational Economic Man: The Human Factor”, December 24 1994 – January 6 1995, p.14-16.

Fox, Louise, and Edward Palmer (2001), “New Approaches and Multipillar Pension Systems: What in the World is Going On?” in Robert Holzmann and Joseph E. Stiglitz (eds.), Towards Sustainable Pension Systems in the 21st Century: New Ideas about Old Age Security, pp. 90-132, World Bank, Washington, DC.

Hirschman, A.O., (2002). Shifting Involvements, Princeton: Princeton University Press.

Lin, Nan, (2001). Social Capital: A Theory of Social Structure and Action. Cambridge: Cambridge University Press. P.267

Lowenstein Gorge, Drazen Prelec and Roberto Weber, (1999), “What, Me Worry? A Psychological Perspective on Economic Aspects of Retirement” in Henry J. Aaron(ed), Behavioral Dimensions of Retirement Economics, Brookings Institution Press, Washington D.C.

Lundberg, Shelly, (1999), “Family Bargaining and Retirement Behavior” in Henry J. Aaron(ed), Behavioral Dimensions of Retirement Economics, Brookings Institution Press, Washington D.C.

Shiller, R. (2000). Irrational Exuberance, Princeton: Princeton University Press.

Shiller, R. (2001). "Bubbles, Human Judgment, and Expert Opinion", New Heaven: Cowles Foundation Discussion Paper No. 1303

Thaler, Richard, (2000), "From Homo Economicus to Homo Sapiens", Journal of Economic Perspectives. 14(1), p.133-141.

United Nations, (2002). World Ageing 1950- 2050, New York: United Nations, Population Division, DESA. Available from <http://www.un.org/esa/population/publications/worldageing19502050/index.htm>

Wolman, W., and Colamosca, A, (2002). The Great 401 (K) Hoax, Cambridge (U.S) : Persus Publishing

Endnotes

1. In the twentieth century, the U.S stock market bubbles which raised price index well above earning were observed in year ending 1901, 1929, 1966, and probably in 2000; with the most spectacular differential being observed in the most recent episode (Wolman and Colamosca, 2002, pp. 19-20). In the post-bubble period, the stock market returns were on average quite low for a prolonged period. Thus, in the twenty years following the 1901 peak , the inflation adjusted return to stocks in the U.S., including dividends, averaged -0.2 percent per year; the corresponding return following 1929 peak averaged 0.4 per year; and following 1966 peak, 1.9 percent per year (Wolman and Colamosca, 2002, p. 20). The annual return has increased following each successive peak, but if history is any guide, the annual returns on stocks in the US are likely to be fairly low in first two decades of the twenty first century.
2. This should not imply that the complex objective functions involving non-monetary aspects facing individuals and organizations should be permitted to act as an alibi for poor performance. This is particularly relevant in developing countries where complex social objectives have often been used in this manner to excuse poor performance of agencies and organizations.
3. Replacement rate is defined as proportion of final salary (or suitable average salary) that a person may expect to receive as monthly income during retirement. In the absence of inflation indexing, real replacement rate at death will be substantially below the rate at the time of retirement.

4. The withdrawal age for mandatory savings schemes, such as provident funds, need not coincide with the retirement age. Usually, the withdrawal age usually occurs earlier than the actual retirement.

5. This type of behavior also occurs when a pre-retirement withdrawal from mandatory savings is permitted, but its end-uses can not be effectively supervised. An example, Malaysia permitted its national provident fund members to withdraw money to purchase a computer. Newspaper reports suggest that as a result of widespread benefit cheating, i.e. significant portion members did not use withdrawn money to purchase computer but used them for other purposes, and the scheme has to be withdrawn. In designing such scheme, it is essential to incorporate actual behavior of the target groups; and insights from behavioral economics may assist in this task.