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**THE INSTITUTE OF SOCIAL SCIENCES**  
**DEPARTMENT OF MANAGEMENT**

**MASTER OF BUSINESS ADMINISTRATION**

**FINANCING AND ACCOUNTING ASPECTS OF PRIVATE  
PENSION FUNDS: A PROPOSAL FOR TURKISH SOCIAL  
SECURITY SYSTEM**

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**İstanbul – 1999**

*T 89620*

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DOKÜMANTASYON MERKEZİ**



# Fatih Üniversitesi

Tarih: 25 / 08 / 1998

Sosyal Bilimler Enstitüsü Müdürlüğü'ne

## TUTANAK

...FAHRETTİN...O...KURBAN... 'a ait

..Financing and Accounting Aspects of Private Pension Funds.."  
..Project for Turkish Social Security Systems..  
..60... dk.'lık süre içinde savunulmuş ve jüri tarafından

.....İŞ...L.F.T.M.K. Anabilim Dalında YÜKSEK LİSANS TEZİ olarak oy

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## ÖZET

Bu çalışma gelişmiş ve gelişmekte olan ülkelerde uygulanmakta olan özel emeklilik sistemleri hakkında bilgi vermeyi ve bu bilgilerin ışığında Türk Sosyal Güvenlik Sistemine bir reform teklifi sunmayı amaçlamaktadır.

Birinci bölümde OECD ülkelerinde uygulanmakta olan özel emeklilik sistemleri incelenmiştir. Özel emeklilik sistemleri temel olarak iki kısma ayrılmaktadır:

- a) Önceden Belirlenen Emeklilik Hakkı Planları( Defined Benefit)
- a) Önceden Belirlenen Katkı Payları Planları ( Defined Contribution)

Maaş Esaslı Emeklilik Programı; emeklilik aylığı miktarının çalışanın çalışma süresine ve son yıldaki maaşına bağlı olduğu bir özel emeklilik sistemidir. Genelde son yıldaki maaşının belli bir oranında emekli aylığı hesaplanır. Çalışan, çalışma süresinin sonunda ne kadar emekli maaşı alacağını tahmin edebilir. Emekli maaşları nominal olarak finansal dalgalanmalardan etkilenmez.

Prim Esaslı Emeklilik Programı; emeklilik aylığı miktarının çalışanın programa katkı miktarına ve fonun yatırımlarından elde ettiği kazanç miktarına bağlı olduğu bir özel emeklilik sistemidir.

Özel emeklilik sistemleri zorunlu veya isteğe bağlı olarak kurulabilmektedirler. Dünya Bankasının 1994 yılında hazırlatıp değerlendirmeye sunduğu reform seçeneklerine göre emeklilik sistemleri üç alternatifli olarak kurulabilmektedir:

- a) Zorunluluk esasına dayanan, kamu tarafından yönetilen, emeklilik maaş tutarının çalışma yıllarındaki ücret miktarına bağlı olduğu, vergi veya katkı payları ile finanse edilen emeklilik programlarıdır.
- a) Zorunluluk esasına dayanmasına karşın kamu veya özel kuruluşlar tarafından yönetilebilen, maaş veya prim esasına dayanan, çalışan veya işverenin katkılarından oluşan fonların kaynaklık ettiği sistemler.

a) İsteğe bağlı olan, özel kuruluşlar tarafından yönetilen, maaş veya prim esaslı, fon kaynaklarını işçi veya işverenlerin katkı paylarının oluşturduğu sistemlerdir.

İkinci bölümü özel emeklilik fonlarının muhasebeleştirilmesi uygulamaları oluşturmaktadır. Bu bölümün hazırlanmasında Uluslararası Muhasebe Standartları'ndan ve Genel Kabul Görmüş Muhasebe Standartları'ndan istifade edilmiştir. Özel emeklilik fonlarının muhasebeleştirilmesi ile ilgili standartlar sürekli olarak yeniliğe uğramaktadır ve ABD'de halen muhasebeciler ve hükümet temsilcileri arasında standartlar üzerinde tartışmalar yapılmaktadır. Türkiyede de Türkiye Muhasebeciler Derneği ve Standard Kurumu( T穆DESK) da özel emeklilik haklarının muhasebeleştirme yöntemleri konusunda çalışmalar yapmaktadır.

Son bölümün ana konusunu Türk Sosyal Güvenlik Sistemi ve Sosyal Güvenlik Kurumları SSK,EMEKLİ SANDIĞI ve BAĞ KUR oluşturmaktadır. Türk sosyal güvenlik sisteminin neredeyse emekli maaşlarını ödeyemeyecek duruma gelmesinin başlıca nedenleri arasında keyfi politik uygulamalar, fonların verimsiz alanlarda değerlendirilmesi ve çalışan işçi –emekli sayısı arasındaki oranın ( Aktif / Pasif rasyo) gittikçe azalması gösterilmektedir.

Türk sosyal güvenlik sistemi acilen reforme edilmelidir. Emeklilik sistemi tamamen veya kısmen özelleştirilmeli ya da sistem yeniden yapılandırılmalıdır. Son yıllarda emeklilik sistemi literatüründe adı başarılı emeklilik reformları arasında sıkça geçen Şili yöntemi incelenerek ülke şartlarına uygun bir emeklilik sistemi geliştirmeye çalışmaları başlatılmalıdır.

## ABSTRACT

This study aims to analyze the private pension funds, which are being practiced in developed and developing countries, and tries to prepare a proposal for Turkish social security system in the light of those systems.

In the first part, the main private pension funds were examined. Generally, two systems have been practiced in OECD countries:

- a) Defined Benefit ( Final Salary)
- a) Defined contribution ( Money Purchase)

Defined Benefit, which is fixed percentage of final salary for each year of working years. Workers can know what benefits they will take and benefits values are not effected from the fluctuations.

Defined Contribution, which provides benefits that is determined by the accumulated contribution and return on fund's investment performance.

Those private pension systems can be established either mandatory or voluntary ways. In the world banks report (1994), three-pillar pension systems were recommended as a pension reform options:

Pillar 1, mandatory, publicly managed, Defined Benefit system, tax financed or contributory.

Pillar 2, mandatory, publicly or privately managed, Defined Benefit or Defined Contribution model, contributory.

Pillar 3, voluntary, privately managed, Defined Benefit or Defined Contribution model, contributory.

Second part stresses on accounting practice of private pension funds. American Generally Accepted Accounting Principles (GAAP) and International Accounting Standard (IAS) are examined for developed accounting practices for Pension Accounting. Actually we can say that those standards have been argued among accountants and government representatives. In Turkey, Accounting and Auditing Standards Board of Turkey (TMUDESK) has been studying on private pension funds

accounting standards. It has prepared a draft, which are containing 29 article about standards. Mainly stress on cost of pension fund and accounting of its.

In the last parts' main subjects are the structure of Turkish social security system, its organizations, which are Social Security Fund (SSK), Pension Fund (Emekli Sandığı) and Self- Employers Security Administration (Bağ-kur), and reform options. The Turkish social security system is nearly bankrupt due to the political interventions, mismanagement of funds and deteriorated active- passive ratio.

Turkish social security system must be immediately reformed by whether fully or partially privatization or restructuring of the system. Chilean pension system, which is the most argued and the government representatives must examine successful private pension system among the recently reformed systems, and initiatives should be taken for appropriate reform options.

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### **List of Abbreviations**

|                |                                                               |
|----------------|---------------------------------------------------------------|
| <b>ABO</b>     | <b>Accumulated Benefit Obligation</b>                         |
| <b>AFP</b>     | <b>Administradoras de Fondos de Pensiones</b>                 |
| <b>CFO</b>     | <b>Chief Financial Officer</b>                                |
| <b>DB</b>      | <b>Defined Benefit</b>                                        |
| <b>DC</b>      | <b>Defined Contribution</b>                                   |
| <b>ERISA</b>   | <b>Employee Retirement Income Security Act</b>                |
| <b>EU</b>      | <b>European Union</b>                                         |
| <b>FASB</b>    | <b>Financial Accounting Standard Board</b>                    |
| <b>GAAP</b>    | <b>Generally Accepted Accounting Standards</b>                |
| <b>GDP</b>     | <b>Gross Domestic Product</b>                                 |
| <b>Ibid</b>    | <b>Ibidem</b>                                                 |
| <b>ILO</b>     | <b>International Labor Organization</b>                       |
| <b>IMF</b>     | <b>International Monetary Fund</b>                            |
| <b>IRA</b>     | <b>Individual Retirement Account</b>                          |
| <b>IAS</b>     | <b>International Accounting Standard</b>                      |
| <b>NAPF</b>    | <b>National Association of Pension Funds</b>                  |
| <b>NBER</b>    | <b>National Bureau of Economic Research</b>                   |
| <b>OECD</b>    | <b>Organization for Economic Co-operation and Development</b> |
| <b>Op.cit.</b> | <b>Opere Citato</b>                                           |
| <b>PBO</b>     | <b>Projected Benefit Obligation</b>                           |
| <b>RRSP</b>    | <b>Registered Retirement Saving Plan</b>                      |
| <b>SERPS</b>   | <b>State Earnings-Related Pension Scheme</b>                  |
| <b>SFAS</b>    | <b>Statement of Financial Accounting Standards</b>            |
| <b>SSAP</b>    | <b>Statement of Standard Accounting Practice</b>              |
| <b>TMUDESK</b> | <b>Accounting and Auditing Standards Board of Turkey</b>      |

UNCTAD      United Nations Conference on Trade and Development  
 USA          United State of America

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## INTRODUCTION

This study essentially examines the private pension funds' applications in the world and its probable effects on stock market. In the light of those private systems, which have been in practiced in developed countries such as USA, England, Canada, I tried to suggest reform options for Turkish social security system and briefly stressed on accounting applications for private pension funds in The United States.

In recent years in many countries, movements towards private pension systems bring some regulation issues. The expansion of private pension system requires sophisticated financial market but in some countries, private pension system is just considered as a reform options for public pension systems.

First section focuses on private pension funds and its structural framework. Pension funds in practiced mainly either Defined Benefit (final salary) and Defined Contribution (money purchase) that is differs in the distribution of risk between the member and program sponsor. The individual bears more risk with Defined Contribution, as the pension returns depends on asset returns. Conceptually, Defined Benefit program offer better retirement income. Private Defined Benefit programs generally available through companies.

There is some disadvantages of Defined Benefit funds relative to labor mobility. Many countries around the world quit their traditional pension system, Pay-As-You-Go, and pass to private pension systems. Those reform lessons from the experienced countries are very useful for countries, which are, want to reform their social security system. Therefore private pension funds are growing rapidly. Between 1990-1996, the average annual growth of these assets was 10.9 percent. Total pension assets in OECD countries rose from almost 29 percent of GDP in 1997, to almost 38 percent of GDP, or its assets value around \$8.7 trillion 'n 1996.

Ones, the recent OECD study on institutional investors shows that insurance companies and pension funds are the largest OECD institutional investors with 46 percent of the investments in 1995. The financial assets these two institutions more

than \$14000 billion in 1995. As a result of expansion of pension funds' assets, required some appropriate regulation arrangements for financial risk of private pension schemes.

Regulation deals with the some issues, namely licensing, segregation of assets, minimum funding requirements, regulation of investments, insolvency insurance and disclosure to members.

In the second part, examines the accounting application and main funding rules of private pension funds in USA. The main accounting standards currently in use are the American FAS87, British SSAP24 and recently IAS19. pension funds must meet these standards.

Plan funding rules determine the contributions. Several variables must be taken in to account when the contributions are counting such as management fees, the inflation rate, mortality tables, the expected return on investments, interest rates, etc. Actuarial methods play key role in ensuring the soundness of pension plans.

Accounting standards both FAS87 and SSAP24 take into account possible volatility in employer contributions as a balance-sheet item rather as an information note. A basic difference that SSAP24 doesn't put restrictions on the actuarial methods used whether normal cost (ongoing) or projected-unit method (winding-up) whereas FAS87 obligated to use projected-unit method.

Accounting methods have important influence on pension funds regulations. Accounting and auditing standards are important for effective management of risk. Accounting standards are key because disclosure will be effective only if the financial information provided by the solid accounting principles. Internationally accepted accounting standards are essential for pension funds to be able to assess the value of investments.

Last part analyze the Turkish Social Security System and its institutions, which are Social Security Fund (SSK), Pension Fund (Emekli Sandığı) and Self- Employers Security Administration (Bağ-kur). Social security institutions nearly bankruptcy. The main reasons of these situations can be shown that political interventions, mismanagement of funds and deteriorated active-passive ratio. Early retirement programs, super retirement, admittance of new members to the SSK without any provisions to actuarial calculations are the main political interventions to the SSK.

Among the recently reformed and the most argued social security system is Chilean pension system. In 1981, Chile shifted from a public, pay-as-you-go, defined benefit system to a private fully funded defined contribution system. Participation in the new system was optional for persons who are already contributing to the public system, but for new labor market entrant's mandatory. The government's role was limited to financing the transition. Government just regulating, supervising the private pension funds and guaranteeing minimum benefits.

Nearly 90 percent of the active workers have an account under the new private pension scheme, but only 50 percent of whom paying contribution. Workers contribute a fixed percentage of their gross salary (10 percent) into saving account with approved pension fund, referred to AFP (Administradora de Fondos de Pensiones). Participants are free to select any approved AFP and can switch after four months at no cost. Each AFP is required provide to participants with survivor and disability insurance. The government guarantees all participants a minimum pension.

Government representatives should examined Chile pension system and adapt to Turkish social security system. In every situation below measurement should be taken:

First, politicians' interventions into the system must be obstructed. There is no doubt that decreasing of retirement age while increase life expectancy distorted structure of social security system.

Second, lengthening of the working years to reasonable levels and lifting early retirement would have positive effect on pension rates.

## **PART 1**

### **SOCIAL SECURITY**

#### **1.1 DEFINITION**

Social security, which can be defined as a contributory social insurance program. It provides benefits to peoples who are contribute financially to system during their carriers and earn benefits upon retirement, disability, or death.

In most countries, employees and employers contribute to social security systems. Aggregate contributions have contained defined percentage of workers' wage and almost same amount come from employers. On the other hand, self employed people pay their own and their employer's share. Contribution rates show differences in terms of countries. The payroll taxes are the largest source of funding social security; a small amount from the taxation of social security benefits of high-income beneficiaries.

The most well known public pension fund is social security that mostly funding on a pay-as-you-go (defined benefit) basis. It not means that employees put money into system and then take out of when they retire. It means that employees now know how much money will take when they retire. The benefits that today's retirees receive are paid out of taxes collected from today's workers and employees.

In developed countries, the primary function of a retirement income system is to provide adequate income to people in their retirement years. Policymakers, around the world, seriously concern providing adequate income for aged people. There are

many successful examples that governments can learn from each other alternative ways to rearrange their social security system.

Social security systems fundamentally different from private pension plans, which are, invest in private-sector financial assets (equity and debt instruments) that provide a right against real assets. Real assets may be either tangible (building, machine) or intangible (good will, patent).

Private pension plans are created by private agencies, including industrial, Labour, non-profit, service, charitable and educational organizations. Some pension funds are so large that they represent major investors in corporate securities. At some point, the system may cause a problem when the future benefits exceed the contributions that either prevent the pension funds from fulfilling their promises or requires more contributions. This under-funding is potentially dangerous over the long run, as existing employee and employers contributions are supporting retirees.

There is considerable uncertainty as to whether the social security system will adequately support future needs, or even continue in the future, so employees are likely to become more dependent on their pensions over time.<sup>1</sup>

## 1.2 BACKGROUND

In former times, individual and families had had a responsibility to get their wealth. Charity institutions started to arrange a contribution programs owing to not enough those earnings. There are many more aid programs have been developed since that time. Workers societies were firstly founded from solidarity and Labor unions. Legal institutions had been established later times.

Modern social security laws firstly enforced in Germany in 1880. Germany's service in this field both take advantage and risks under social security day by day expanded with the enforcement of other countries similar programs. Minimum social security level for defined risks started to be seen into the general responsibilities of governments.

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<sup>1</sup> Jeff Madura, *Financial Markets and Institutions*, West Puplicing Company, St. Paul, 1992, p.678

Today in many countries generally accepted that everybody, who is couldn't care to himself, must have been in social security programs of governments with out any other requirements. Today social security programs have been expanded and it has been seen a right more than a need.

The International Labour organization (ILO) has extended the concept of social risks which were protected by publicly organized social security systems its including medical care, sickness benefits, unemployment benefits, old age benefits, disability benefits and survivors' benefits.<sup>2</sup> We can briefly explain developments of those programs like below:

### **1.2.1 OLD-AGE, DISABILITY, WIDOW, AND ORPHAN INSURANCE**

These programs have been financing from the revenues that are cutting from the employee and employers. Even if there are obligation that someone, who want to have old age or retirement income, have to work until defined age or time, these obligations are more flexible in disability and widow insurance programs.

### **1.2.2 MEDICAL CARE AND SICKNESS INSURANCE**

The most controversial and complex program in social security programs. These kinds of programs offer contribution medicate expenses besides giving wage loses due to the illness. While some insurance systems contain all people, others are covering only their member firms' workers. Although in some countries private doctors and pharmacist have been provided the medicate service, in other countries its being provided from state-owned institutions.

### **1.2.3 WORK-RELATED DISEASES INSURANCE**

It has been enforcement in almost all developed countries, hasn't been expanded yet in developing countries. These programs are supporting people who

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<sup>2</sup> Ilo Convention ,No:102,1952; Cited in Metin R Ercan and Deniz R. Gökçe, " Defined Contribution Model: Definition, Theory and an Application for Turkey", *The ISE Review*, p.33, vol:2, no.7-8(July-December 1998

were fired from their work without their failures or have skilled and looking for a job.

#### **1.2.4 EMPLOYMENT INSURANCE**

It has long background and the most extensive insurance system. These programs contain workers who are working in corporations, which are bigger than normal standards. Programs are being generally financing from the employers' contribution. Developed countries, where large portion of peoples working, have the most expanded social security programs. Although the first aim of these programs in developed countries is that redistribution of revenue from rich to poor peoples, a few people who are top or average class get more in less developed countries. The most poor people, who are especially in agricultural area, are being exodus from the social security even if pay a tax.

#### **1.3 PENSION FUNDS**

Pension funds protect individuals and families against loss of income in their retirement years by allowing workers to invest a portion of their current income. A pension fund plans places current savings in portfolio of stocks, bonds, and other assets. In this way, the pension plan member can balance planned consumption after retirement with the amount of the savings to set aside today.<sup>3</sup>

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<sup>3</sup> Peter S.Rose,*Money And Capital Markets*, Richard D. Irwin, Inc, 1994, p.159.

### 1.3.1 COVERAGE OF PENSION

When social security programs first developed in a country, they often are fragmented, with politically sophisticated and powerful groups, such as military and civil service, obtaining generous benefits for themselves. This process lead to a social security system with numerous groups having their own scheme, with befit generosity differing across groups.<sup>4</sup>

Generally national security systems start with limited coverage and gradually extended coverage to more groups. Initially also tend to exclude the self-employed people in agriculture, the unemployed, part time and non-workers. Frequently, they exclude the military and civil service because those groups are already covered under unselfish programs. In order to faster national solidarity and respect for government that government workers and the military be included in the national social security program.

Mostly, countries as they developed their social security systems move away from fragmented social security system and towards universal programs that treat all groups of society equally.

In some countries with well-developed systems, such as Japan non-workers and the unemployed are included under social security, while in other countries they are excluded. In Chile coverage of self-employed is voluntary and non-workers are excluded. In many countries such as Indonesia, workers in small firms are excluded. In India, workers earning above a certain amount are excluded. In some poor countries, contribution evasion is high among some groups that nominally are covered by social security. Because evasion raise disrespect for law and government, if a country unable to achieve high compliance among a groups of workers, such as the self-employed, its better that either exclude them from coverage or make their coverage voluntary.<sup>5</sup>

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<sup>4</sup> John Turner and Sophiye Korczyk, What Have Other Countries tried and How has It Worked, *Social Security Department*, ILO Geneva, 1998, p.1

<sup>5</sup> Ibid, pp.2-3.

### 1.3.2 TYPES OF PRIVATE PENSION PLANS

Private pension plans can be classified in two main types:

1. Defined Benefit (Final Salary)
2. Defined Contribution (Money Purchase)

#### 1.3.2.1 DEFINED BENEFIT PLAN

The typical pension plan scheme provides benefit which is a fixed percentage of final salary (some times average salary, but mostly final or near final salary) for each year of service. If the pension assets' value exceed the current and future benefits owed to employees, companies reduce the future contribution. Alternatively, they may distribute the surplus amount to the firm's share- holders rather than the employees. Most industrial countries and many developing countries have a defined benefit (pay-as-you-go) basis pension scheme.<sup>6</sup>

A defined benefit plan can be either a single-employer plan or a multiemployer's plan. A single-employer plan provides benefits for workers of one employer, or it may provide benefits to workers of several employers. A multiemployer plan is collectively bargained pension usually in a common industry, such as construction, textiles, and mining. Defined pension plans may count the promised benefit as an exact amount or the benefit is calculated by use of formula. Generally, a company funds plan and its assets are collectively invested by a professional manager. A defined benefit plan must offer to pay an annuity, like a monthly benefit, for the life of retired worker, no matter how long worker lives. A defined benefit plan must also pay an annuity to the worker's surviving spouse for the spouse's life.

Defined benefit plans offer workers a number of advantages when compared to other retirement plans:

- Workers are promised a specific benefit at retirement.

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<sup>6</sup> Richard Hemming , "Should Public Pension Be Funded", *IMF Working Paper*, 1998,p.5.

- Workers can know what benefits they will receive
- The benefits of workers are certain it's not effected from the fluctuations.
- Employers are responsible for providing the retirement benefits that are not dependent upon salary.

#### **1.3.2.1.1 BASIC PENSION PLAN PROVISIONS**

Generally, defined pension plans require workers to meet age and service requirements before they can participate in the plan. Workers cannot be excluded for being too old. When worker leave a job they can take an information about their benefits and pension plan. Workers are eligible to begin receiving pension benefits when they reach retirement age. For many pension plans, the normal retirement age is 65. Many pension plans allow workers to take early retirement completing certain number of years or reaching a giving age. When they decided to early retirement, they more probably receive a lower benefit because benefits will be paid in future time. Pension plans may pay benefits either as an annuity or other regular payments.

#### **1.3.2.1.2 FUNDING OF PENSION PLAN**

Defined benefit plans are usually funded completely by the employer. Employers contribute annually to cover the normal cost of the plan. Amount that is at least equal to value of benefits that is earned from the participants that year. Funded pensions are backed by accumulated assets. If a firm (or financial institution) runs a DC pension scheme, the assets of the pension fund will by definition cover the pension liability. If a firm run DB pension scheme, then at minimum the assets of the pension fund should be sufficient to cover the pension liability that has been accrued according to the rules of the schemes.<sup>7</sup>

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<sup>7</sup> Hemming , op.cit., pp.7-8.

### 1.3.2.1.3 ADMINISTRATION OF PENSION PLAN

The person who administers the pension plan is known as the plan administrator. The plan administrator's responsibilities include giving an information to workers about their rights and benefits, making a pension payments to retirees. The administrator must also notify participants about changes in the plan.

### 1.3.2.2 DEFINED-CONTRIBUTION PLAN

As an alternative to the Defined-Benefit plan, which provides benefits that determined by the accumulated contributions and return on the funds' investments performance. Contributions are predetermined pensions reflect the pension fund accumulated at retirement This type of plan allows a firm to know with certainty the amounts of funds to contribute, whereas that amount is undetermined in the defined-benefit plan until the return is known. However, the defined-contribution plan provides uncertain benefits to the participants. In principle, contributions could be invested in any security, although in many practices most plans limit investment choices to bond, stock, and money market funds. The employee bears all the investment risks of the retirement accounts and the employer has no legal obligations beyond making its periodic contributions. Investment policy for defined contribution assets is essentially the same as for any tax-qualified individual retirement account. Therefore in defined contribution plan, much of the task of the setting and achieving retirement income replacement goals falls on the employee.<sup>8</sup>

The main providers of investment products for these plans are the mutual funds and insurance companies that also serve the general investment needs of individuals. Retirement incomes depend upon return of investment revenue. If the returns are high, retirement income will be high. Fund Portfolio diversification is very important for these funds. Investment risks can be reduced with global diversification and investments in low risky securities.

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<sup>8</sup> Zvi Bodie and Olivia S.Mitchell, "Pension Security In An Aging World", *Pension Research Council*, 1996, p.9.

Contribution amount easily removed without devaluation from the plan. Retirees whether take their total amount out from plan, or by annuities. These situations increase the risk.

#### **1.4 DEFINED-BENEFIT VERSES DEFINED-CONTRIBUTION SCHEMES**

There are two main issues between defined benefit and defined contribution plan. These are distribution of income between workers and pensioner, and incentives for working in same company until retirement years. Defined benefit programs provide a higher-level income certainty during retirement years. In defined benefit schemes sponsors who are either employer or government, or others bear all income risk. In defined contribution schemes, pensioners bear all the income risk. Defined contribution schemes also expose investment risk, but manager of funds could reduce risk with diversifying into bonds. If risks are associate with domestic investments then fund manager could reduce risks with internationally diversification, but investment risk wouldn't be reduced to zero. In extreme situation, sharp downsizing in domestic or international stock price like recent Asian crises. In such event government may have to bear this risk.

Secondly, defined benefit schemes have an incentive to work hard, because retirement income determined by final or nearly final salary. Fund mobility in defined benefit system is limited, but there is no obstruction in defined contribution schemes, funds are portable from job to job.<sup>9</sup>

In USA most corporate pension plans are defined benefit plans. Federal pension law, known as ERISA, makes defined contribution plan relatively more attractive than they had been previously. Some employees prefer a defined-benefit plan because it reduces the employee's risk in planning for retirement. Employers tend to prefer defined-contribution plans because of the reduced uncertainty of

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<sup>9</sup> Hemming, op.cit., pp.19-21.

pension expenses and contributions and because defined-benefit plans more regulated by governments than are defined-contribution plans.<sup>10</sup>

When we look at the Table 1.1 pension systems vary across the countries.

**TABLE 1.1 CHARACTERISTICS OF SELECTED FUNDED PENSION SYSTEMS**

|             | Coverage                       | Contribution Rate | Benefit Type                          | Asset Management                              | Portfolio Regulations  |
|-------------|--------------------------------|-------------------|---------------------------------------|-----------------------------------------------|------------------------|
| Chile       | 99% Members,<br>58% Contribute | 13%               | Defined Cont.<br>Mandatory            | Decentralized<br>( Personal)                  | Portfolio<br>Restrict. |
| Singapore   | 90% Members<br>67% Contribute  | 40%               | Defined Cont.<br>Mandatory            | Centralized                                   | Discretion-<br>ary     |
| Switzerland | 90%                            | 7%-18%            | Defined Cont.<br>Mandatory            | Decentralized<br>Occupational                 | Portfolio<br>Restrict. |
| U.K.        | 75%                            | Variable          | Def.Ben.and<br>Def.Cont.<br>Voluntary | Decentralized<br>Occupational<br>and Personal | Prudent<br>Man Rule    |

Source: Davis (1998)

<sup>10</sup> Davidson Sidney, Stickney Clyde P, Weil Roman L, *Financial Accounting: An Introduction to concepts, methods and Uses*, 1985, pp.503-504.

## **1.5 PENSIONS IN DEVELOPED NATIONS**

All seven major industrialized nations have social security systems are funded on a pay-as-you-go basis, the United States and Japan accumulate some reserves for future use. Payments to current beneficiaries are financed through payroll taxes on current workers and employees. A few countries, such as Japan and Germany, use general tax revenues in addition to payroll tax collections to finance social security benefits.

The level of public pension spending varies across the seven major developed countries. As its being seen at the Table 1.2 the United States was spending about 4 percent of GDP on social security. Other countries, including Germany, France, and Italy, spent more than 10 percent of their GDP on public pensions.

### **1.5.1 THE STRUCTURE OF PENSION BENEFITS**

The structure of retirement benefits varies across nations. All of the seven major industrialized nations pay an earnings-related pension. Various restrictions can be placed on the earning that are subject to mandatory social security contributions. Some times contributions are not required for workers above a maximum age. In Belgium this age 65 for man and 60 for women, but rising in steps over time to age 65 for women also.

Several argument oppose having a maximum age for paying the social security mandatory contribution. First, it reduces the contribution base. Second, it prevents the workers from continuing to accrue social security credits. Third, it is an-fair between workers who are excluded by age from contributing and those who contribute. The United Kingdom and Japan also pay retirees a flat benefit based on the number of years they made payroll tax contributions. Canada supplements its earnings-related pension program with non-contributory, universal pensions. Many countries have ceiling on covered earnings.

|             |           |    |     |     |
|-------------|-----------|----|-----|-----|
| France      | prices    | 11 | 83  | 14  |
| Germany     | net wages | 11 | 69  | 23  |
| Ireland     | prices    | 4  | 62  | 34  |
| Italy       | prices    | 13 | 89  | 22  |
| Luxembourg  | wages     | 17 | 77  | 16  |
| Netherlands | net wages | 6  | 67  | 15  |
| Portugal    | prices    | 7  | 98  | 38  |
| Spain       | prices    | 10 | 98  | 30  |
| Sweden      | prices    | 12 | n/a | n/a |
| U. Kingdom  | prices    | 5  | 59  | 38  |
| U. States   |           | 4  | n/a | n/a |

Source: Royal Institute of International Affairs(1997) and OECD No.168(1996)

n/a: not available

If there is no ceiling on covered earnings and benefits are based on earnings high income workers will have high social security benefits. Alternatively, if there is no ceiling on covered earnings, but there is a ceiling on benefits, high-income workers receive no benefit for contributions made on earnings above a certain level. Some countries don't require workers with low earnings or who works few hours to pay mandatory contributions. Benefits may also be reduced for these workers, as in Japan, but in some countries such as Canada, benefits aren't reduced.

Some times general revenues is used to supplement financing. General revenue used to finance roughly a third of the earnings-related benefits in Japan. It is used to finance the entire flat benefit in Canada. Revenue from income taxation of social security benefits is used to help finance benefits in The United States. General financing may be less regressive than payroll tax financing that is meaning the burden fall less heavily on low-income workers. Alternatively, pension funds can be financed with stock from privatization of formerly state-owned enterprises.

### 1.5.2 SOCIAL SECURITY REPLACEMENT RATES

Replacement rates which means that the percentage of one's income at retirement replaced from social security. When we compare the social security earnings replacement rates, United states very low in major industrialized nations. Table 1.2 that table reports the social security earnings replacement rates, which is defined here as the annual government pensions as a portion of final salary. The maximum earnings replacement rates for a retiree with average career earnings is about 40 percent in The United States, compared the more than 60 percent in Germany and France. At one extreme is Italy, the government-run social security system provides a replacement rate grater than 85 percent for workers who are earning a wide range of payment.

### **1.5.3 INDEXATION OF BENEFITS AND RETIREMENT AGE**

Like The United States, developed countries, such as Italy, Canada and United Kingdom index their pension benefits against inflation to protect beneficiaries. Private pensions are not indexed in any countries. Indexing the normal retirement age to life expectancy (as being done in Sweden) is limiting the need for a steadily rising payroll tax rate.

### **1.5.4 FISCAL CONDITION OF SOCIAL SECURITY SYSTEMS IN DEVELOPED COUNTRIES**

The International Monetary Fund (IMF) projects that, without changes, over the next fifty years, the social security systems in each of the major industrialized nations will expose a funding shortfall. The USA projected deficit is small compared to most of the other nations. Only The British social security system appears to face a shortfall comparable to The USA.

For rebuilding of the fiscal balance, the United States and United Kingdom would need to increase their annual revenues by less than 1 percent of their GDP. All of the other nations would require an increase amount 1 to 3 percent of their GDP.

In the next 35 years the proportion of the world's population that is more than 60 years old will nearly double, from 9.5 to 16 percent.

TABLE:1.1 DEMOGRAPHY

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| DEMOGRAPHY     |                                   |            |                     |             |         |                   |                                                      |                   |                   |                   |                   |                   |                   |                |
|----------------|-----------------------------------|------------|---------------------|-------------|---------|-------------------|------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------|
|                | Total area<br>thousand<br>sq. km. | Population |                     |             |         | Growth Rate<br>%  | Age Structure of Population<br>% of total population |                   |                   |                   |                   |                   |                   |                |
|                |                                   | thousands  |                     | per sq. km. | 1995/84 |                   | under 15                                             |                   | 15-64             |                   | 65 and over       |                   |                   |                |
|                |                                   | 1985       | 1985                |             | 1985    |                   | 1978/77                                              | 1985              | 1980              | 1985              | 1980              | 1985              |                   | 1980           |
|                |                                   |            |                     |             |         |                   |                                                      |                   |                   |                   |                   |                   |                   |                |
| Australia      | 7,687                             | 18,054     | 15,788              | 2           | 1.2     | 1.2               | 1.2                                                  | 21.6 <sup>a</sup> | 30.1              | 66.6 <sup>a</sup> | 61.4              | 11.8 <sup>a</sup> | 8.5               | Australia      |
| Austria        | 84                                | 8,047      | 7,555               | 96          | 0.2     | -0.1              | 0.2                                                  | 17.6 <sup>a</sup> | 22.0              | 67.4 <sup>a</sup> | 65.8              | 15.0 <sup>a</sup> | 12.2              | Austria        |
| Belgium        | 31                                | 10,137     | 9,858               | 332         | 0.2     | 0.1               | 0.1                                                  | 18.1 <sup>a</sup> | 23.5              | 66.3 <sup>a</sup> | 64.5              | 15.7 <sup>a</sup> | 12.0              | Belgium        |
| Canada         | 9,976                             | 28,606     | 25,942              | 3           | 1.2     | 1.0               | 1.0                                                  | 20.2              | 33.7              | 67.7              | 58.7              | 12.0              | 7.6               | Canada         |
| Czech Republic | 79                                | 10,331     | 10,337              | 131         | 0.0     | 0.6               | 0.6                                                  | 18.6              | ..                | 68.2              | ..                | 13.2              | ..                | Czech Republic |
| Denmark        | 43                                | 5,228      | 5,114               | 121         | 0.4     | 0.3               | 0.3                                                  | 17.2 <sup>a</sup> | 25.2              | 67.4 <sup>a</sup> | 64.2              | 15.4 <sup>a</sup> | 10.6              | Denmark        |
| Finland        | 338                               | 5,108      | 4,902               | 15          | 0.4     | 0.3               | 0.3                                                  | 19.1 <sup>a</sup> | 30.4              | 66.9 <sup>a</sup> | 62.3              | 14.0 <sup>a</sup> | 7.3               | Finland        |
| France         | 549                               | 58,141     | 55,284              | 106         | 0.4     | 0.4               | 0.4                                                  | 19.5              | 28.4              | 65.4              | 62.0              | 15.1              | 11.6              | France         |
| Germany        | 357                               | 81,662     | 61,024 <sup>a</sup> | 229         | 0.3     | -0.1 <sup>a</sup> | 0.3                                                  | 15.9 <sup>a</sup> | 21.3 <sup>a</sup> | 68.1 <sup>a</sup> | 67.8 <sup>a</sup> | 16.0 <sup>a</sup> | 10.8 <sup>a</sup> | Germany        |
| Greece         | 132                               | 10,459     | 9,934               | 79          | 0.3     | 1.3               | 1.3                                                  | 17.3 <sup>a</sup> | 26.1              | 67.5 <sup>a</sup> | 65.8              | 15.2 <sup>a</sup> | 8.1               | Greece         |
| Hungary        | 93                                | 10,229     | 10,579              | 110         | -0.3    | 0.3               | 0.3                                                  | 18.1              | ..                | 67.8              | ..                | 14.1              | ..                | Hungary        |
| Iceland        | 103                               | 267        | 241                 | 3           | 0.0     | 0.5               | 0.5                                                  | 24.7 <sup>a</sup> | 34.8              | 64.2 <sup>a</sup> | 57.1              | 11.1 <sup>a</sup> | 8.1               | Iceland        |
| Ireland        | 70                                | 3,580      | 3,540               | 51          | 0.3     | 1.3               | 1.3                                                  | 25.2 <sup>a</sup> | 30.5              | 63.3 <sup>a</sup> | 58.6              | 11.5 <sup>a</sup> | 10.9              | Ireland        |
| Italy          | 301                               | 57,283     | 57,141              | 180         | 0.1     | 0.7               | 0.7                                                  | 15.3 <sup>a</sup> | 23.4              | 68.9 <sup>a</sup> | 67.6              | 15.8 <sup>a</sup> | 9.0               | Italy          |
| Japan          | 378                               | 125,250    | 120,750             | 332         | 0.2     | 0.9               | 0.9                                                  | 16.4 <sup>a</sup> | 30.1              | 69.6 <sup>a</sup> | 63.9              | 14.0 <sup>a</sup> | 6.1               | Japan          |

|                |       |         |         |     |     |     |                   |      |                   |      |                   |      |                |
|----------------|-------|---------|---------|-----|-----|-----|-------------------|------|-------------------|------|-------------------|------|----------------|
| Korea          | 99    | 44,851  | 40,806  | 452 | 0.9 | 1.5 | 23.2              | ..   | 71.7              | ..   | 5.7               | ..   | Korea          |
| Luxembourg     | 3     | 413     | 367     | 159 | 3.0 | 0.0 | 18.5              | 21.4 | 67.4              | 67.9 | 14.1              | 10.8 | Luxembourg     |
| Mexico         | 1,973 | 91,120  | 73,950  | 46  | 3.1 | ..  | 38.9 <sup>a</sup> | ..   | 58.3 <sup>a</sup> | ..   | 4.8 <sup>a</sup>  | ..   | Mexico         |
| Netherlands    | 41    | 15,457  | 14,484  | 379 | 0.5 | 0.6 | 18.4 <sup>a</sup> | 30.0 | 68.3 <sup>a</sup> | 61.0 | 13.4 <sup>a</sup> | 9.0  | Netherlands    |
| New Zealand    | 269   | 3,580   | 3,272   | 13  | 1.5 | 0.0 | 23.3 <sup>a</sup> | 32.9 | 65.1 <sup>a</sup> | 58.5 | 11.7 <sup>a</sup> | 8.7  | New Zealand    |
| Norway         | 324   | 4,360   | 4,153   | 13  | 0.5 | 0.4 | 19.4 <sup>a</sup> | 25.9 | 64.6 <sup>a</sup> | 63.2 | 16.0 <sup>a</sup> | 10.9 | Norway         |
| Poland         | 313   | 38,588  | 37,203  | 123 | 0.1 | 0.9 | 22.8              | ..   | 66.1              | ..   | 11.1              | ..   | Poland         |
| Portugal       | 92    | 9,921   | 10,014  | 107 | 0.1 | 1.1 | 18.0 <sup>a</sup> | ..   | 67.6 <sup>a</sup> | ..   | 14.4 <sup>a</sup> | ..   | Portugal       |
| Spain          | 505   | 39,210  | 38,507  | 78  | 0.2 | 1.1 | 17.2 <sup>a</sup> | 27.3 | 67.9 <sup>a</sup> | 64.5 | 14.9 <sup>a</sup> | 8.2  | Spain          |
| Sweden         | 450   | 8,827   | 8,350   | 20  | 0.5 | 0.3 | 18.8 <sup>a</sup> | 22.4 | 63.7 <sup>a</sup> | 65.9 | 17.5 <sup>a</sup> | 11.8 | Sweden         |
| Switzerland    | 41    | 7,081   | 6,533   | 171 | 0.6 | 0.3 | 16.5 <sup>a</sup> | 23.5 | 67.8 <sup>a</sup> | 66.3 | 15.7 <sup>a</sup> | 10.2 | Switzerland    |
| Turkey         | 781   | 61,644  | 50,306  | 79  | 1.8 | 2.1 | 32.3              | 41.2 | 63.0              | 55.1 | 4.7               | 3.7  | Turkey         |
| United Kingdom | 245   | 58,613  | 56,685  | 239 | 0.4 | 0.0 | 19.5 <sup>a</sup> | 23.3 | 64.8 <sup>a</sup> | 64.9 | 15.7 <sup>a</sup> | 11.7 | United Kingdom |
| United States  | 9,373 | 283,057 | 238,466 | 28  | 0.9 | 1.1 | 21.9              | 31.0 | 65.3              | 59.7 | 12.7              | 9.2  | United States  |

Notes:

.. not available

a. Ex-FRG only

b. 1984.

Sources: Labour Force Statistics: 1975-1985, OECD, Paris, 1987.

With the rapid increase in life expectancy and declines in fertility rates, the population in developing countries is aging much more rapidly than population industrial countries. For instance when we look at the Turkey's demography from 1960 to 1995 proportion of aged people, who are over 65, in population have been increased from 3.7 percent to 4.7. By 2030, 80 percent of the elderly people will live in developing countries due to this situation, policy makers start to plan their aging population.

Many of these countries now relay on family assistance and private voluntary old-age support. Cross- sectional analysis shows that public spending on formal pension plans increases as population age. For example in some industrial countries such as, France, Germany, Italy, and Netherlands it exceeds 15 percent of gross domestic product.<sup>11</sup>

It means that increase in public spending can effect the entire economy by influencing productivity, factor supplies, and eventually the size of GDP. For instance, large public spending means that high payroll taxes can lead to unemployment, or deficit financing can lead to inflation.

## **1.6 THE RECENT DEVELOPMENT OF PRIVATE PENSION FUNDS**

In recent years, many developed countries have been in economic instability. These unsoundness increased anxiety about financing of social security programs. Most of social security programs have been sported from government revenue. These assistance 15.4 percent of government expenditures in European Unions Countries in 1995. All of major industrialized countries will be expose same problem over the next 30 year, because of increasing life expectancy and declining fertility rate countries now started to take into account private security programs.

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<sup>11</sup> Çağatay Ergenekon, *Özel Emeklilik Fonları:Şili Örneğinden Alınacak Dersler*, IMKB, 1998,p.20.

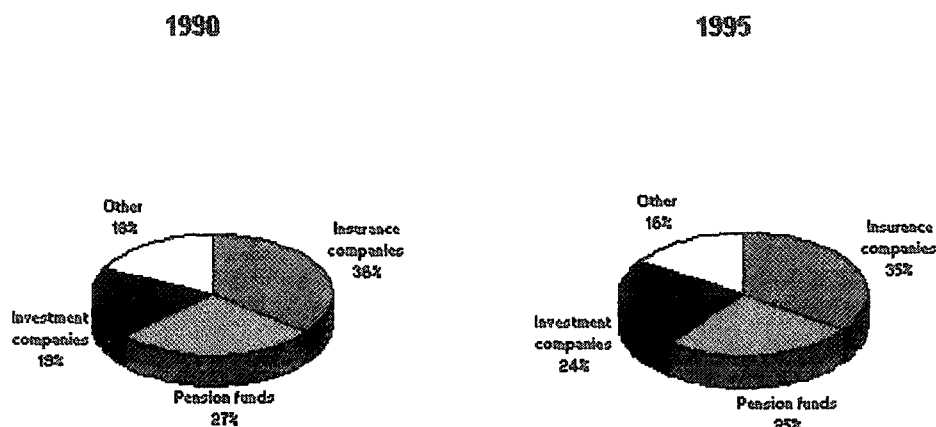
Expectations for pension funds in advanced countries vary with the maturity of existing funds and the current generosity of social security. The past decade has witnessed expansion of pension fund assets. “ Over the period 1990-96, the average annual growth of the these assets was 10.9%. As a result, total pension assets in OECD area rose from almost 29% of GDP in 1987, to almost 38 % of GDP, or around \$8.7 trillion, in 1996. These aggregate figures conceal a great aviation among individual OECD countries”.<sup>12</sup>

In countries such as, France, Italy, and Germany, growth in coming decades could be quite large. Pension funds have been performing since firs times of 1900, but it has been more developed late 30 years. Private pension and life insurance institutions in OECD countries have the largest portion of the funds.

Pension fund institutions with 25% of financial assets in OECD countries second biggest investor after the life insurance institutions in 1995, as its being seen in Figure 1.

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<sup>12</sup> Hans J. Blommestein, “ Financial Market Implications of Pension Reforms”, *The ISE Review*, vol:2, no.7-8(July-December 1998), pp.80-82.

**FIGURE 1.1 Total Financial Assets by Type of Investor**

*Source:* OECD Institutional Investors - Statistical Yearbook, 1997

There is a significant advantage for private pension fund institutions. Member of which couldn't take their share from program until retirement. Program members contribute to system through the their career years. Cash outflows are could be estimated easily because formula for figuring the benefit payments is explained in contract between the institutions and its member. This situation encourages the pension institutions' long-term bond and stocks. The investment strategy, according to their members' age, changes from institutions to institutions. Generally, institutions, which are have more old age people compare the others, chose lest risky investment strategies.

There is also significant difference between pension fund assets and insurance institutions. Insurance companies to create annuities on assets and sell these annuities, but pension funds' assets belong to the corporation.

Among the OECD countries, which are have private pension institutions, the biggest private pension markets respectively USA, UK, Netherlands, Switzerland, and Canada.

**TABLE 1.4 SIZE OF PENSION FUND ASSETS –1997**

|             | <u>% of Pensions<br/>Funded</u> | <u>Pension<br/>Assets(\$bn)</u> | <u>Pension Assets<br/>(% GDP)</u> | <u>Pension Assets<br/>% Market Cap.</u> |
|-------------|---------------------------------|---------------------------------|-----------------------------------|-----------------------------------------|
| Belgium     | 4                               | 25                              | 11                                | 24                                      |
| Denmark     | 4                               | 148                             | 84                                | 147                                     |
| Finland     | n/a                             | 40                              | 35                                | 79                                      |
| France      | 1                               | 95                              | 7                                 | 18                                      |
| Germany     | 12*                             | 310                             | 14                                | 51                                      |
| Ireland     | 19                              | 29                              | 42                                | 87                                      |
| Italy       | 0                               | 91                              | 7                                 | 36                                      |
| Netherlands | 10                              | 502                             | 127                               | 138                                     |
| Portugal    | 0                               | 10                              | 9                                 | 34                                      |
| Spain       | 0                               | 22                              | 4                                 | 12                                      |
| Sweden      | n/a                             | 142                             | 66                                | 69                                      |
| Switzerland | n/a                             | 288                             | 117                               | 60                                      |
| UK          | 6                               | 1015                            | 77                                | 61                                      |
| Total       | n/a                             | 2752                            | 33                                | 61                                      |

\*Includes voluntary book reserves  
Source: Royal Institute of International Affairs(1997) and William M. Mercer 1998

According to report, which explains financial problems in OECD countries, indicates that respectively in term of shares of equities in pension funds was 79,3 percent in the United Kingdom, 57,6 percent in the United states and 41,1 percent in Belgium as of 1996. Private pension funds' development speed in OECD country nearly 10 percent.<sup>13</sup> It's expected that increases in pension funds' assets will be slow in countries such as USA, UK and Germany.

In the light of the latest OECD data, pension fund investments in domestic bonds have very high returns for instance, in Germany 77,8 %, in Sweden 58, 5 %, in Switzerland 53,3 %, in Japan 52,6 percent and in the Netherlands 50,1 percent as of 1996.<sup>14</sup> Pension funds investments vary according to countries' special conditions

<sup>13</sup> Andre Laboul, "Private Pension System:Regulatory Policies", *OECD Financial Market Trends*, Paris, June 1997, p.99

<sup>14</sup> Ergenokon, *The Impact of Tax Regimes on the Development of Private Pension funds: Reflection of the capital market, The ISE Review*, Volume: 2 no: 7-8 July-December 1998.,p.107.

such as level of financial market development and legal structure. The most advanced funds among the private pension funds between 1990-1995 are equities that are increased nearly 16 percent<sup>15</sup>. When we compare countries according to their pension fund assets as a percentage of their GDP, respectively in Switzerland 117,1 %, in Netherlands 87,3 %, in UK 74,7 %, in USA 58, 2 %, and Ireland 45 %.<sup>16</sup> If we consider expanding of pension fund assets between 1970-1995 as a percentage of their GDP, the huge increases nearly 330 % in UK, 300 % in Denmark Table 1.4

### **1.6.1 THE CONSEQUENCES OF PRIVATE PENSION FUND DEVELOPMENTS**

The aging population in developed countries increasing year by year because of decreasing fertility rate increasing life expectancy. Associated growth of pension fund with aging and other growing institutional assets is increased demand for pension fund management. Professional, portfolio managers have an important influence on financial markets through investment and trading strategies. Countries with large funded pension schemes tend to have highly developed securities markets, while capital markets are relatively underdeveloped.

The increase in pension funds will lead new financial instruments and different types of assets. It is expected that more pension funds will be invested in emerging markets because of recession in developed markets. The size of flows from the developed countries to the emerging markets shows that globalization in markets increasing. When the investment limitation on pension fund liberalized and emerging markets and emerging markets will have strengthened their market structure, pension funds from developed nations continue flow increasingly in emerging markets. These situations also offer more diversification opportunities.

All of the developments, which are mentioned up, support the financial markets' deepness and expands. Pension fund managers will have more choice about their portfolio diversification, which would positively effect the return of the funds.

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<sup>15</sup> Ergenekon, op.cit., p.107.

<sup>16</sup> Ibid, p.108.

These positive effect also increase fund flows into investments eventually all of these developments improve the level of life standards.

### 1.6.2 EFFECTS OF DEMOGRAPHIC CHANGES

Pension burdens on government have been increasing with old age population. These fiscal burdens lead to countries rearrange of their social security system. When we look at the Table1.5 dependency ratio, which means that percentage of retirement people in working people, has been increasing from 1960 to 2050

**TABLE: 1.5 DEMOGRAPHIC CHANGES**

|                          | 1960 | 1990 | 2000* | 2010* | 2020* | 2030* | 2050* |
|--------------------------|------|------|-------|-------|-------|-------|-------|
| Dependency ratio(%)      |      |      |       |       |       |       |       |
| France                   | 18,8 | 20,8 | 23,6  | 24,6  | 32,3  | 39,1  | 43,5  |
| Germany                  | 15,9 | 21,4 | 24,3  | 30,1  | 35,0  | 47,1  | 51,3  |
| Japan                    | 8,9  | 17,3 | 25,1  | 34,1  | 43,2  | 43,5  | 50,2  |
| UK                       | 17,9 | 24,2 | 24,2  | 25,5  | 30,5  | 38,5  | 40,9  |
| USA                      | 15,2 | 18,7 | 18,7  | 19,1  | 24,8  | 31,9  | 33,5  |
| Average in Dev.Countries | 14,0 | 19,3 | 21,5  | 24,6  | 31,5  | 39,8  | -     |
| Average in Emr.Countries | 7,9  | 8,3  | 9,1   | 8,7   | 11,4  | 14,6  | -     |

Source: Bosworth, Barry and Gary Burtles, " Social Security Reform In a Global Context" Steven A.Sass, Robert K. Triest (Ed.s), Social Security

Reform: Links to Savings, Investment, and Growth, Federal Reserve Bank of Boston, Conference Series, No: 41, June 1997, p.246

\*Values are assumed

## 1.7 FINANCIAL SECURITY OF PRIVATE PENSION SYSTEMS

The financial security of private pension funds and instruments, which are being using financing of pension fund, are crucial element for effective regulations for private systems. The primary aim of which is that to protect beneficiaries from the effects of fund insolvency misappropriate investment and management decisions and default risk.

### 1.7.1 REGULATIONS FOR PENSION FUND INSTITUTIONS

Regulations on institutions are those affect the structure and competitiveness of sector. These regulations include rules on authorized institutions, operational controls such as the non-discrimination rule, and the regulation of fees and commissions. Regulations vary from one country to another, but their goals are the same.

Regulations are being discussed extensively in most OECD countries. Particularly in countries where large private systems. This is a consequence of recent bankruptcy. The Employee Retirement Income Security Act (ERISA) in the United States, has become one of the most comprehensive regulations governing the Defined Benefit Plans. In the UK the recently increased pension Act has raised funding standards. There are generally two ways of strengthening regulations. First, toughening pension regulations that are being used, second, adopting regulations to those governing insurance.<sup>17</sup> There are various ways for an appropriate regulatory and supervisory framework for private pension schemes.

#### 1.7.1.1 LICENSING

In a recent green book, the European Commissions noted that, although there were differences between national pension regulations, funds are required to be authorized or approved by authority.<sup>18</sup> Authorization or approval depends on certain criteria such as the honorability and competence of managers of pension funds and

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<sup>17</sup> Andre Laboul, "The Financial Security of Private Pension System", *Financial Market Trends*, no.71, November, 1998, PP.71-72

<sup>18</sup> Ibid, P.72

custodians (trustees) of pension funds' assets. There are two types of institutions that may be authorized, corporate pension funds and ordinary financial institutions (banks, insurance companies, or mutual funds).

In countries where there is no worker or employer mandate program, employers authorized to set up pension schemes on a voluntary basis. Corporate pension funds are operated as trust. In the United States, employers offering so called 401(k) plans must also set up a trust with fiduciaries and trustees, participating workers are allowed to select from authorized investment funds.<sup>19</sup> 401(k) refers to the selections of the International Revenue Code that regulate the requirements that must be followed to allow workers to defer tax by electing to contribute to qualified regular savings plans.

In countries with employer mandates, any employer can be authorized to establish a pension fund in the form of trust or foundation. Boards of trustees that usually consist of employer and employee representatives manage the trust of foundations. The trustees are responsible for selecting the asset, although rarely workers have limited choice of investment funds. There also multiemployer pension funds in industries that are characterized by high mobility and extensively unionized. Small employers in sector usually employee insurance companies or other financial institutions. These countries such as Switzerland, Australia and Hongkong tend to authorize both corporate and independent pension funds.

In many countries, all workers, but especially who don't participate in company pension programs, are encouraged by tax benefits to save for their retirement with existing financial institutions. However, financial institutions offering tax-advantaged retirement savings accounts must report contributions and withdrawals to the tax authorities. The Individual Retirement Accounts (IRAs) in the USA the Registered Retirement Savings Plans (RRSPs) and recently authorized Personal Pension Plans in the UK follow this way.

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<sup>19</sup> Dimitri Vittas, "Regulatory Controversies of Private Pension Funds", *Development Research Group The World Bank*, ( January 1998), p.13.

Special authorization may create segmentation and allow a few institutions; especially in less developed countries where capital markets are weak and financial instruments are not enough.<sup>20</sup>

#### **1.7.1.2 OPERATIONAL CONTROLS OF PENSION FUND**

Operational controls contain vesting, portability, funding requirements, single or multiple accounts or funds, and the non-discrimination rule. Operational control vary between Defined Benefit (DB) and Defined Contribution (DC) plans.

Defined Benefit plans firstly take into account portability, minimum vesting, funding requirements, and non-discrimination rule. Defined Benefit plans contain only pension fund for all employees and there are no other multiple accounts. Defined Contribution plans have multiple accounts and for vesting, portability, and funding requirement a little different from Defined Benefit plans.

In countries, where have voluntary company pension, employers have to meet non-discrimination among the workers. Regulations also contain minimum vesting, portability, and minimum funding requirements for DB plans. These are varying from country to country. Funding rules based on the liquidation of vested rights, which contain past service, it means that vested benefit.<sup>21</sup>

The funding rules have two approaches. The first stress on long-term equilibrium and consider system's as a normal cost method (ongoing). This method takes into account not only past services but also future ones. The second looks from the point of the projected unit credit (Winding-up). It primarily considers past services, which reflects changes in value of money.

Portability of vested benefits is allowed when employee changes employer, but employers tend to discriminate against departing workers. The new employer

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<sup>20</sup> Hemant Shah, "Towards Better Regulation of Private Pension Funds", *Worldbank Policy Research Working Paper*, 1997,p.27.

<sup>21</sup> Loboul, op.cit., P.13

recognizes prior employment period. The mobility issue is important for movement across the countries.

In countries with employer mandates, companies may have one fund for all covered workers they may offer limited choice of investment fund. Some countries allow account switching such as Australia, Australian workers have several pension accounts, but only one account active. In Chile and most other Latin American countries pension regulations have imposed the- one account per worker- and -one fund per company-. The aims of these restrictions are to keep the system trustworthy.

The -one account per worker- rule forces workers to place all their pension savings in one pension fund management company, but multiple accounts would allow a diversification of risk. The main argument against multiple accounts is it may increase fees and as a result of these workers hold one or at most two accounts. Multiple account may create some problems. Companies may encourage their members to join risky funds and they may manipulate the allocation of securities among different funds.

### 1.7.2 REGULATION OF ADMINISTRATIVE COST

Cost of administration is an important factor in determining the return of any pension plan. The high level of operating cost in countries with worker mandates has implied high fees cost. Large proportion of these costs comes from marketing and selling cost. For instance USA the administrative costs of the current social security system are considered low. In 1997, they were \$3,4 billion, equal to approximately 0,5 percent of assets.<sup>22</sup> Company- based pension schemes, whether mandated or voluntary doesn't involve high selling and marketing cost and there are no direct changes on workers. This is one of main advantages compared to independent fund based.

In company based pension schemes, the main selling and marketing cost are promotional cost of insurance companies and other financial institutions who seek to

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<sup>22</sup> [www.ssa.gov/OACT/STATS](http://www.ssa.gov/OACT/STATS)

obtain the pension business of different companies, especially in multiemployer funds. In multiemployer mandates, there are rarely any need to regulation of selling commissions and marketing cost, because underlying market only one between professionals in point of the equal access to information and financial sophistication.

In Chile, the authorities have not imposed any controls on the level of fees and commissions, relying on competitions. No controls have been placed on the level of the structure of commissions. Some pension fund management companies in Chile and other countries have used a high flat (fixed) fee as a means of discouraging low-income workers and attract high-income workers.

One way to cope with the high level pension cost, to limit advertising and marketing efforts or to control level of fees and commissions.

### 1.8 MANAGEMENT OF PENSION PLAN ASSETS

Various types of organizations are managing social security fund While government agencies have been considered to be inefficient compared to private sector organizations, because their first aim not profit or competitions defined benefit (pay-as- you-go) plans are generally managed by government agencies. Most companies have employee pension plans, which are different, each other. Generally, the Chief Financial Officer (CFO) administers the plan.

Administers has three specific responsibilities (1) deciding on the general nature of the plan, (2) determining the required annual payments into the plan, and (3) managers the plan's assets.<sup>23</sup> Management of private pension plan is important, but very complex process. Fund administration requires so much technical knowledge. Due to these situation companies hires specialist as consultants to help design and administer their funds.

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<sup>23</sup> Brigham, Eugene F and Louis C. Gapenski, *Intermediate Financial Management*, 1996, pp.961-962.

### **1.8.1 MANAGEMENT ISSUES FOR MANDATORY PENSION FUND**

Countries, which have private funds, manage their pension funds in different ways. Regulations are a major determinant of operations of private pension funds in different countries. Most countries follow a mixture of them. At the one hand, there may be centralized management by public agencies. Such as social security institutions. These institutions may centralize all aspects of administration and investment. Secondly, “draconian” drastic measurement.

Regulation covering many aspects of their operation, especially the case in Chile on investment policies. Draconian regulations are more appropriate for mandatory systems that are newly implementing in countries. Such as Chile, firstly there are no strong and transparent capital markets, secondly, the lack of private pension funds, thirdly, the lack of financial market instruments and familiarity to market instruments. Developing and underdeveloped countries will imitate Chile and adopt draconian management system when they first introduce a system of mandatory private pension funds.<sup>24</sup>

The others are “prudent man” rule or “prudent person” approach, extensive investor protection rules. The exact meaning not clear, but we can say that flexibility in response to changes in technology and market opportunities. We will stress on this subject later in investment issues.

### **1.8.2. PENSION FUND INVESTMENT ISSUES**

Institutions in mandatory funded systems have the same problem in investment as others in economy such as banks, companies. Problem is to achieve an optimal trade-off of risk and appropriately diversified combinations of assets. There are no possibilities of increasing return without increasing risk, also reducing risk without reducing return.

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<sup>24</sup>Vittas, op.cit., P.3

In Defined Contribution (DC) funds may be personal, occupational, or public, there is no guarantee regarding assets at retirement. It depends on growth in the assets of the plan. The portfolio distribution either be chosen only by the sponsors and investment managers or employees may choose their asset manager or can decide the their assets allocation. In Defined Benefit (DB) funds either public or occupational but not personal, appropriate investment strategies will depend on the nature of obligation incurred, whether it's indexed or nominal and demographic structure of the workforce. The interest rate, inflation, and real earnings can influence the liabilities.

### 1.8.2.1 INVESTMENT LIMITS

Investment limits are most controversial subjects not only in Chile and other Latin American countries but also in many OECD countries, especially in Japan, Finland, and Denmark. The prudent person rule has been used in many OECD countries. These rules compel managers to avoid risky investments and to follow high fiduciary standards in investing the funds.

**Table 1.6 MOST IMPORTANT RESTRICTIONS ON PENSION  
INVESTMENT**

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Belgium | : >15% in government bonds                                                                                                               |
| Denmark | : Rules of the E.U.'s 3 <sup>rd</sup> life insurance directive, 80% currency matching                                                    |
| France  | : >50% E.U. government bonds                                                                                                             |
| Germany | : <30% E.U. equities, <25% E.U. property, <6% non-E.U. equities, <6% non-E.U. bonds, <20% overall foreign assets, >80% currency matching |
| Italy   | : <20% liquid assets, <50% non-listed OECD securities, <5% non-OECD securities, >30% currency matching                                   |

Portugal : <40% in foreign equity

Switzerland : <50% real assets, <30% Swiss equities, <30% foreign loans,  
<25% foreign equities

Source: De Ryck (1996), European Commission (1997) and others.

Investment rules stress on profitability and safety. This means that pension funds to seek the highest returns in markets, but avoid excessive concentration on assets. The investment rules have been characterized by high investment rules.<sup>25</sup> First of them, the type of instruments that are eligible. Investments should be effected through organized exchanges and actively traded securities.

Direct investment in low rated assets should be discouraged, but indirect investments in assets such as mortgage-backed securities for housing long and venture capital funds for investments in new firms could be encouraged.

Secondly, to set clear limits on exposure to individual issuers of securities for instance, holding of equities or bonds of any issuer are usually limited to 5% or 10% of the total assets of the fund or total value of securities. These limits prevent the excessive concentration of risks. These two types of rule implementing in most countries. The last rules limits on risk classes of assets. The fundamental problem for these rules is that assets may have different risk characteristic, for example government bonds a very different risk instrument from five year to thirty-year.

The composition of private pension fund assets varies across countries

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<sup>25</sup> Vitas, op.cit., pp. 24-27

**TABLE: 1.7 ASSET ALLOCATION**

|                       | Domestic<br>Bonds, % | Foreign<br>Bonds, % | Domestic<br>Equities, % | Foreign<br>Equities, % | Real<br>estate, % | Cash<br>Other, % |
|-----------------------|----------------------|---------------------|-------------------------|------------------------|-------------------|------------------|
| Belgium               | 31                   | 12                  | 18                      | 24                     | 5                 | 10               |
| Denmark               | 65                   | 1                   | 17                      | 7                      | 8                 | -                |
| Finland               | 69                   | 1                   | 9                       | 1                      | 7                 | 13               |
| France                | 75                   | 10                  | 8                       | 5                      | -                 | 2                |
| Germany               | 71                   | 4                   | 6                       | 3                      | 13                | 3                |
| Ireland               | 26                   | 4                   | 24                      | 33                     | 6                 | 7                |
| Italy                 | 56                   | -                   | 2                       | -                      | 40                | 2                |
| Netherlands           | 47                   | 10                  | 15                      | 19                     | 7                 | 2                |
| Portugal              | 72                   | 1                   | 14                      | 4                      | 2                 | 7                |
| Spain                 | 65                   | 1                   | 9                       | 2                      | -                 | 23               |
| Sweden                | 64                   | -                   | 20                      | 8                      | 8                 | -                |
| Switzerland           | 25                   | 7                   | 10                      | 5                      | 16                | 37               |
| U.K.                  | 9                    | 6                   | 53                      | 22                     | 2                 | 8                |
| Total (weighted)      | 37                   | 6                   | 27                      | 14                     | 8                 | 8                |
| Total ex-U.K., N.Irl. | 56                   | 4                   | 11                      | 5                      | 13                | 12               |

Source: William M. Mercer 1998

For example, pension funds in UK and Ireland hold the majority of their assets in equities, while those in France, Germany, Italy, and Sweden invest their funds' large portion in bonds. Belgium and Netherlands are in intermediate position. Pension fund managers have strong home bias in their investment strategies, but recent years some movements towards greater international diversification.

The share of foreign assets is greatest in those countries where private pension funds are significantly large, this reflect that domestic equity markets too small to absorb private pension fund. There are some important restrictions on pension fund investments. (See Table1.6)

### 1.8.2.2 BARRIERS TO GLOBAL PENSION INVESTMENTS

The limits on overseas investments have reduced benefits of global diversification. When we look at the Table 1.7 most OECD pension funds are little invested abroad. Their foreign assets share far more below the global portfolio as suggested by portfolio theory.

Table 1.6 tells us that the diversification of pension funds assets has been limited by localization requirements and by requirements of currency matching. Which force funds to equilibrium the currency mix of their assets with the currency mix of their pension commitments. There are no governmental limits for foreign investment in Ireland, Australia, Luxembourg, Spain and United Kingdom. Another groups includes, Japan, Canada, Belgium, Switzerland have medium restrictions either by ceiling or currency matching requirements. There is one experience in the United Kingdom, where pension fund accounted for an important proportion of personal savings and of GDP, shows that when the restrictions lifted pension funds will diversify globally.<sup>26</sup>

UK pension funds invested exclusively in foreign assets. Because of freedom in their portfolio choice. The foreign assets shares of UK pension funds rose 15 percent in 1985 to 30 percent in 1994. Governments still see pension funds<sup>27</sup>

<sup>26</sup> Bernhard Fischer and Helmut Reisen, "Pension Fund Investment From Aging To Emerging Markets", *OECD Policy Brief* No.9, 1994, P.16

<sup>27</sup> Fischer and Reisen, op.cit., pp. 16-17

-As a captive market for absorbing government debt, which means that government, can easily finance their expenses from pension institution

-As a vehicle for retaining domestic saving at home

-Lastly, as a retaining government control over the allocation of large financial resources

Pension funds not only seek to maximization of profit, but also real purchasing power of their assets. Due to currency fluctuations there is long term deviations in purchasing power parity. Investor in small countries should hold higher share of foreign assets than investor in self-sufficient countries. Overseas investments are clearly more important for smaller countries, especially those that depend on a few industries. The lack of suitable domestic instruments is a very strong argument for permitting investments in overseas countries.

#### **1.8.2.2.1 HOST COUNTRY BARRIERS FOR FOREIGN INVESTMENTS**

The home bias of pension assets in many OECD countries is not only by restrictions in investor countries, but also host country barrier matter. There are still some cases where formal inflow restrictions may prevent foreign equity portfolio investments. Some countries are still completely closed to foreign investment. Another barriers for portfolio investments is exchange and capital controls. (Restrictions on portfolio capital inflows have been gradually relaxed.) Also tax discrimination towards foreign investor prevent foreigner to invest.

Another market barriers, which are determinants of international investments, include high information cost, lack of efficient local securities, high fixed commissions, lack of market transparency and lack of hedging techniques. The most important requirement for foreign investor is adequate information system.

Lacks of information, the absence of adequate accounting standards are the also severe obstacles to capital market development. There are some fundamental elements for foreign investors are absent particularly in low-income countries. (UNCTAD, 1993).<sup>28</sup> Prudent standards to establish capital adequacy requirements, selecting of securities, financial reporting requirements for intermediaries and enforcing such requirements.

- a. Prescriptions to protect investors from market manipulations and lack of transparency including information disclosure and strict fiduciary responsibility.
- b. Organizational rules to provide for the establishment, operation of stock exchange and market information systems.

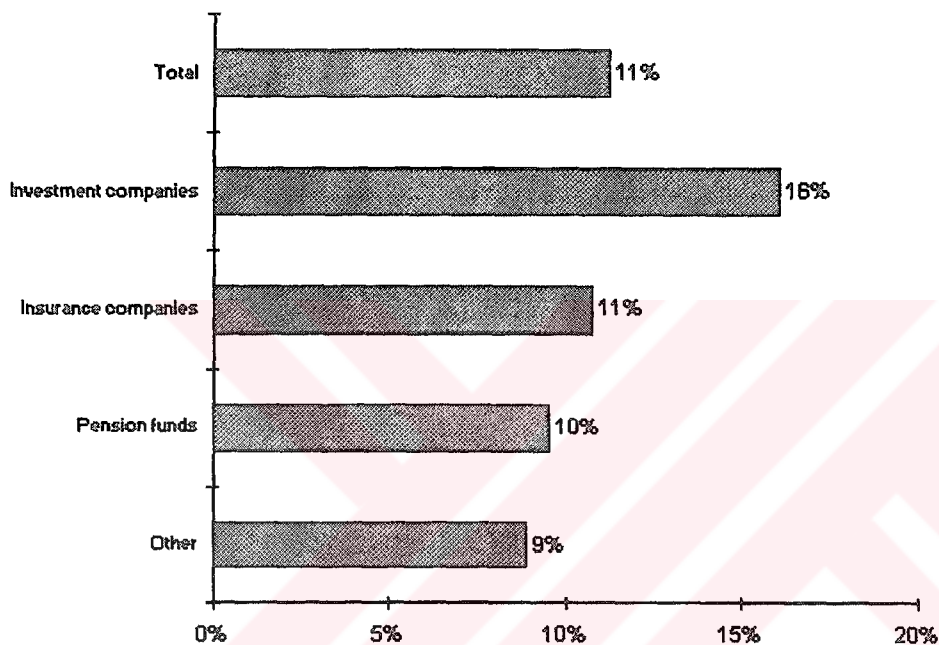
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<sup>28</sup> Fisher and Reisen, op.cit., p.22

### 1.9 PENSION FUNDS AND CAPITAL MARKETS

The importance of private pension systems growing as a result of financial assets of it's as its being seen in Figure 1.2

**FIGURE: 1.2 Average Annual Growth Rate of Financial Asset of Institutional Investors, 1990-1995**



*Source:* OECD Institutional Investors - Statistical Yearbook, 1997

Generally, impact of pension assets on financial markets different from country to country. We can say that pension funds can effect the capital markets with these ways <sup>29</sup>

1. Creating a demand for capital market instruments
2. Innovation in financial instruments

<sup>29</sup> Davis, *Pension Funds, Retirement Income Security and Capital Markets*, p.155.

### 3. Improvements on capital market structure

### 4. Decreasing market volatility

“It’s widely recognized that the development of funded pension systems should be supported by the simultaneous strengthening of infrastructure of the financial market. The ability for pension funds to maintain living standards during the retirement of the contributions is indeed crucially dependent on the performance of financial market instruments.”<sup>30</sup>

Institutional investor can influence the demand for financial market instruments either increase in supply of savings or portfolio distributions between bank deposits and securities. We don’t emphasize on savings, but the most important thing for increasing in savings is that tax incentives. Tax incentives have opportunity costs for the government. For instance, if peoples shift their savings to tax-free private pension funds without increase in their long-term savings, government would take lower tax income.

Despite these objections, if governments properly carry out tax incentives that are may be very powerful tools in encouraging to them for increase their savings. Pension funds are not only source of long-term savings to support the development of bond and equity markets. They those can also be a positive force for innovation, for corporate governance, and for privatization. Generally private retirement income savings are being taxed in three ways:

- a- Taxes on investment incomes
- b- Taxes on contributions that come from employees or employers
- c- Retirement benefits paid by the pension funds

Taxation policies of private pension savings in some countries like below

**TABLE 1.8 TAXATION OF PRIVATE PENSION FUNDS**

| TAXES ON     |                       |                    |                                       |
|--------------|-----------------------|--------------------|---------------------------------------|
|              | Employee Contribution | Investment Returns | Retirement Salary or Lump-Sum Payment |
| U.S.A*.      | No                    | No                 | Yes                                   |
| UK*          | No                    | No                 | Yes                                   |
| Germany      | Yes                   | No                 | Yes                                   |
| Japan        | No                    | Yes                | Yes                                   |
| Canada*      | No                    | No                 | Yes                                   |
| Netherlands* | No                    | No                 | Yes                                   |
| Sweden       | No                    | Yes                | Yes                                   |
| Denmark      | No                    | Yes                | Yes                                   |
| Switzerland* | No                    | No                 | Yes                                   |
| Australia    | Yes                   | Yes                | Yes                                   |
| France*      | No                    | No                 | Yes                                   |
| Italy*       | No                    | No                 | Yes                                   |
| New Zealand  | Yes                   | Yes                | No                                    |

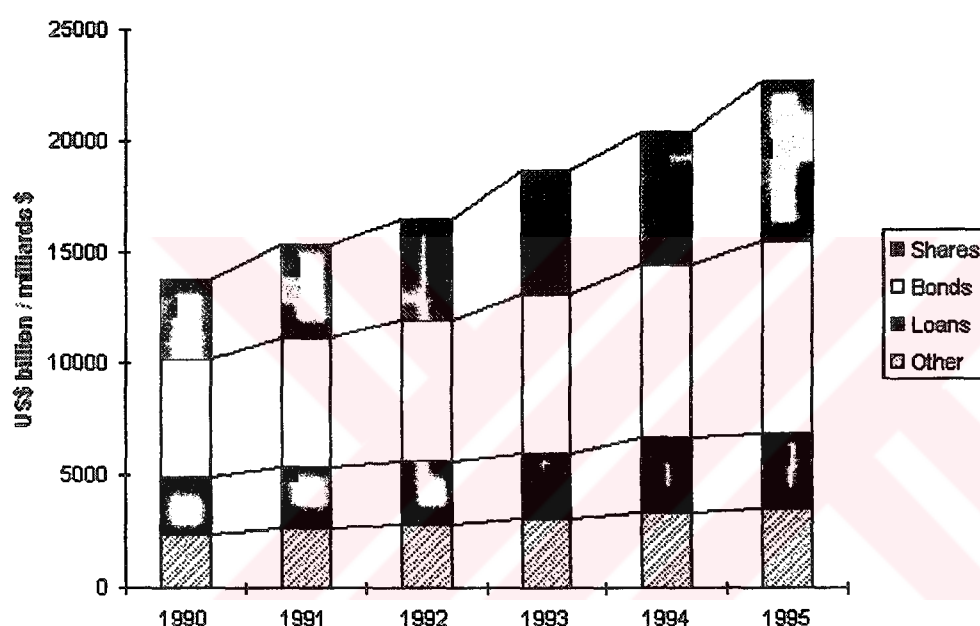
Source: Davis. 1995 (countries which provide tax incentives to private pension funds) ; Cited in Çağatay Ergenekon," The Impact of Tax Regimes on the Development of Private Pension funds: Reflection of the capital market, p.111.

Financial market instruments innovation has been closely related to the development of pension funds and stimulating the modernization of capital markets. For instance, derivative securities, indexation of benefits and portfolio insurance. New financial instruments are developed to meet pension funds' needs and to fill gaps in the markets.

<sup>30</sup> Hans J Blommestein, "Pension Funds and Financial Markets", *The OECD Observer* n.212, June/July, 1998, p.1

For instance, in USA the development of securitization and financial derivatives has been attributed to the investment and risk management needs of pension funds and other institutional investors. The return of stock exchanges around the world can also be attributed to growth of pension funds and other institutional investor. In Figure 1.3 shows that institutional investor fund in securities increasing.

**FIGURE 1.3 Trends in Financial Assets of Institutional Investors 1990-1995**



Source: OECD Institutional Investors - Statistical Yearbook, 1997

Risk reduction is the main motivation for portfolio diversification, as it being required in “prudent man” rules. Fund managers can reduce the systematic risk in domestic markets with internationally diversification their fund assets.<sup>31</sup> In the USA Employee Retirement Security Act (ERISA) codified the legal status of defined-benefit corporate pension funds and imposed strict minimum-funding requirements, sharply increasing demand for hedging by pension funds.

<sup>31</sup> Zvi Bodie, Olivia S. Mitchell and John A. Turner, *Securing Employer Based Pensions*, Chapter 8, 1996, p.267.

This has stimulated the development of immunization strategies (to match assets to liabilities).<sup>32</sup> In the United Kingdom not so clear the contribution of pension funds to innovation. Because many trust deeds used to prevent funds from using derivatives, but these restrictions have been related, as a result of these implications 5-10 % of the fund invested in the derivatives. For instance, in 1993, The National Association of Pension Funds (NAPF), some 5% of schemes used options only, 10% used futures only, 28% used both but 57% used neither.<sup>33</sup> These situations nearly same today. "Pension funds can act catalysts for the development of efficient trading and settlement systems, the adoption of modern accounting and auditing standards, and promotion of meaningful information disclosure".<sup>34</sup>

The size of pension funds has also impact on the structure of financial markets, countries, which are have large funded pension schemes, tent to have developed securities markets. A well-functioning pension system requires a stable and efficient financial market infrastructure, the legislative frame work, the system of regulation and supervision, the financial accounting system, clearing and settlement system. Most developed countries have made progress in the development of a capital-market infrastructure, including regulations and supervisory framework.

Differences in disclosure requirements among countries are clear, because of different legal systems. In most emerging markets, the ability of regulators to monitor and enforce disclosure is weaker than more mature markets. And recent events in Southeast Asia show that a weak financial market infrastructure, lack of transparency and accountability inadequate disclosure standards, can worst confidence crises. Several Asian governments have taken movements in strengthening disclosure requirements and reforming financial markets to regain trust of international investors.

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<sup>32</sup> Davis, op.cit., p.163

<sup>33</sup> Investment-Pension Europe, June 1999, Vol:3, Number:6, p.35

<sup>34</sup> Vittas, "Pension Funds and Capital Markets, Public Policy for The Private Sector",p.4

Private pension funds other effect with its stabilized and long term investments on capital markets are reducing volatility and stabilization in share prices. Investor, who are don't like high risk, avoid high volatile share as a result of this, companies' capital costs are increased. A large domestic institutional sector may help to stabilize markets by offsetting the effects of wholesale moves in or out of markets by foreign investors. Lack of institutional sector may be one reason for the high volatility of markets. In countries, where private pension funds so expanded, there are any relationships between private pension fund and capital markets. When the demand increase for companies share, capital cost decrease and companies easily increase their securities export and investments.

As we have seen Table1.8 the UK is the biggest component of the European pensions capital market, nearly 40% of total assets. European pension assets are tiny compared to those in the UK equities account for 75% of all European funds in domestic equities. Consequently, they have more funds to invest in the rest of Europe than other does.

**TABLE 1.9 PENSION FUND ASSETS IN EQUITIES, \$bn 1997**

| 1997-\$bn   | Total  | Of which |          | % of Domestic in E.U.-12 Total |
|-------------|--------|----------|----------|--------------------------------|
|             |        | Foreign  | Domestic |                                |
| Belgium     | 10.5   | 6.0      | 4.5      | 0.6                            |
| Denmark     | 35.6   | 10.4     | 25.2     | 3.5                            |
| Finland     | 4.0    | 0.4      | 3.6      | 0.5                            |
| France      | 12.4   | 4.8      | 7.6      | 1.1                            |
| Germany     | 27.9   | 9.3      | 18.6     | 2.6                            |
| Ireland     | 16.6   | 9.6      | 7.0      | 1.0                            |
| Italy       | 1.8    | -        | 1.8      | 0.3                            |
| Netherlands | 170.7  | 95.4     | 75.3     | 10.6                           |
| Portugal    | 1.8    | 0.4      | 1.4      | 0.2                            |
| Spain       | 2.4    | 0.4      | 2.0      | 0.3                            |
| Sweden      | 39.8   | 11.4     | 28.4     | 4.0                            |
| UK          | 761.3  | 223.3    | 538.0    | 75.0                           |
| Total       | 1084.8 | 371.4    | 713.4    | 100.0                          |

Source: William M.Mercer (1998)

## PART II

### ACCOUNTING FOR PENSION BENEFIT

#### 2.1. GENERAL PERSPECTIVE

The aim of this study is explanation of pension accounting and reporting problems of employer as the sponsor of pension plan. The main accounting standards currently in use are the American, Statement of Financial Accounting Standards (SFAS) 87- 88, International Accounting Standard (IAS) 19 and the British, Statement of Standard Accounting Practice (SSAP) 24 which are the sources of Generally Accepted Accounting Principles (GAAP) in pension area. Both take into account possible volatility in employer contributions as a balance-sheet item rather than as an information note.

In Turkey, Accounting and Auditing Standards Board of Turkey (TMUDESK) has been studying on an accounting standards for private pension funds. It has prepared a draft, which are containing 29 article about standards. Mainly stress on cost of pension fund and accounting of its.

SFAS 87 specifies the accrual basis of accounting for pension costs and focuses on accounting problems revolve around the amount to be expensed on the income statement and the amount to be accrued on the balance sheet.<sup>35</sup>

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<sup>35</sup> E. Philip Davis, *Regulation of Pension Fund Assets, Experts Meeting On Institutional Investors*, OECD, Paris, 7-8 July 1997; Cited in Ergenekon, *The ISE Review*, Volume: 2 no: 7-8 July-December 1998,p.51

SFAS 88 is closely related to SFAS 87. It establishes standards to be followed by employers of Defined Pension Plans when obligations are settled, plans are curtailed, or benefits are terminated directly on the terms of the plan to assist in the recognition of compensation cost over the service period of the employees.

The principal emphasis of SFAS 87 is the present value of the pension obligation, the fair value of the plan assets, and the disclosure of the makeup of the pension costs and of the projected benefit obligation.

There is an important principle in accounting that Matching Principle: A significant relationship exists between revenue and expenses. Expenses are incurred for the purpose of producing revenue. In measuring the net income for a period, revenue should be offset by all the expenses incurred in producing that revenue. This concept of offsetting expenses against revenue on a basis of "cause and effect" is called the matching principle.<sup>36</sup>

## 2.2. DEFINITION OF TERMS<sup>37</sup>

**Accrued pension cost;** cumulative net pension cost accrued in excess of the employer's contributions.

**Accumulated benefit obligation,** actuarial present value of benefits (whether vested or non-vested) attributed by the pension benefit formula to employee service rendered before a specified date and based on employee service and compensation prior to that date.

**Actual return on plan assets component (of net periodic pension cost),** difference between fair value of plan assets at the end of the period and the fair value at the beginning of the period, adjusted for contributions and payments of benefits during the period.

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<sup>36</sup> Robert F. Meigs, Mary A. Meigs, Mark Bettner and Ray Whittington, *Accounting The Basis for Business Decisions*, 1996, p.97.

<sup>37</sup> Delaney,P:R, Adler, J.R, Epstein, B.J and Foran, M.F, *Interpretation and Application of GAAP*, 1998, pp. 575-582.

**Actuarial present value**, as specified date of an amount or series of amounts payable or receivable. Each amount adjusted to reflect (1) the time value of the money and (2) the probability of payment (by means of decrements of events such as death, disability, or retirement) between the specified date and the expected date of payment.

**Expected long-term rate of return on plan assets**, Assumption as to the rate of return on plan assets reflecting the average rate of earnings expected on the funds invested or to be invested to provide for the benefits included in the projected benefit obligation.

**Expected return on plan assets**, amount calculated as a basis for determining the extent of delayed recognition of the effects of changes in the fair value of assets. The expected return on plan assets is determined based on the expected long-term rate of return on plan assets and the market-related value of plan assets.

**Prepaid pension cost**, cumulative employer contributions in excess of accrued pension cost.

**Prior service cost**, cost of retroactive benefits granted in a plan amendment.

**Projected benefit obligation**, actuarial present value as of a date of all benefits attributed by the pension benefit formula to employee service rendered prior to that date.

**Retroactive benefits**, benefits granted in a plan amendment (or initiation) that are attributed by the pension benefit formula to employee services rendered in periods prior to the amendment. The cost of the retroactive benefits is referred to as prior service cost.

**Settlement**, Transaction that (1) is an irrevocable action, (2) relieves the employer (or the plan) of primary responsibility for a pension benefits obligation, and (3) eliminates significant risks related to the obligation and the assets used to effect the settlement.

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**Unfunded accumulated benefit obligation**, excess of the accumulated benefit obligation over plan assets.

**Unrecognized net gain or loss**, cumulative net gain (loss) that hasn't been recognized as a part of net periodic pension cost.

**Unrecognized prior service cost**, portion of prior service cost that hasn't been recognized as a part of net periodic pension cost.

### 2.3. CONCEPTS

The principal objective of SFAS 87 is to measure the compensation cost associated with employees' benefits and to recognize that cost over the employees' service period. This statement is concerned only with the accounting aspects of pension cost. The funding<sup>38</sup> is the benefits not covered and it is considered to be a financial management matter.<sup>39</sup>

When an entity provides benefits that can be estimated in advance to its retired employees and their beneficiaries, the arrangement is a pension plan. The accounting for most types of retirement plans are covered by SFAS 87 and SFAS 88. These plans include unfunded, insured, trust fund, defined contribution and defined benefit plan, deferred compensation contracts. The establishment of a pension plan represents a commitment to employee that is of long term nature. Although some corporations manage their own plans, this commitment usually takes the form of contributions to an independent trustee.<sup>40</sup> The contributions are used by the trustee to obtain assets are used to generate or return which generally is earned interest or appreciation in assets value. The return in the plan assets provides the trustee with cash to pay the benefits to which the employees are entitled. These benefits in turn are defined by the plans benefit formula in corporate many factors including

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<sup>38</sup> Fund means to pay to funding agency (as to fund future pension benefits or to fund pension cost). It refers to assets accumulated in the hands of funding agency (trustee) for the purpose of meeting

<sup>39</sup> Delaney, op.cit., p.582

<sup>40</sup> Ibid, 582.

employee compensation, employee service, longevity, employee age, etc. are considered to provide the best indication of pension obligations and cost. It is used as the basis for determining the pension cost recognized each fiscal year.

Accounting for defined benefit pension plan is highly reliant upon information and measurements provided by actuaries. Actuaries are individuals who are trained through long and rigorous certification program to assign probabilities to future events and their financial effects. Employers rely on actuaries for assistance in developing, implementing, and funding pension plans. In accounting for pension plan, two questions must be answered:

1. What amounts of employer's liability and of pension obligation should be reported in the financial statements.
2. What pension expense for the period.

There are alternative ways measurements of employer's pension obligation.<sup>41</sup> One measure of the obligation is to base it only on the benefits vested to employees. Vested benefits are those that the employee entitled to receive even if the employee renders no additional service under the plan. Under most pension plans, a certain minimum number of years of service to the employer is required before an employee achieves vested benefit status. Generally the vested benefit obligation is using current salary levels.

Another measurement of the obligation is to base the computation of deferred compensation amount on all years of service performed by employees under the plan both vested and non-vested service using future salaries. This measurement is called accumulated benefit obligation.

A third measurement bases the computation of the deferred compensation amount on both vested and non-vested service using future salaries. This measurement is called projected benefit obligation. Regardless of which approach

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<sup>41</sup> Donald E. Kieso and Jerry J. WEYGANDT, *Intermediate Accounting*, John Wiley & Sons Inc., 1998, p.1096.

used, because the estimated future benefits to be paid are discounted to present value, FASB's choice is projected benefit obligation, which is the present value of vested and non-vested benefits accrued to date based on the employees future salary level.

### **2.3.1. CAPITALIZATION VERSUS NON-CAPITALIZATION**

Prior the issuance FASB statement 87, accounting for pension plans followed a non-capitalization approach. Non- capitalization, often referred to as off-balance-sheet financing, because balance sheet reported an assets or liability for the pension plan arrangement only if the amount actually funded during the year by the employer. From the accounting profession point of the view, the employer has a liability for pension benefits that it has promised to pay for employee services already performed. As pension expense is incurred -as the employees work- the employer's liability increase.<sup>42</sup>

Funding the plan has no effect on the amount of the liability, only the employer's promises and employee's services effect the liability. The pension liability is reduced through the payment of benefits to retired employees. The FASB in statement in 87 adopted an approach toward capitalization, which represents a compromise that combines some of the features of capitalization with some of the features of non-capitalization.<sup>43</sup>

### **2.3.2. COMPONENTS OF NET PERIODIC PENSION COST**

The profession recognizes that accounting for pension plans requires measurement of the cost and its identification with the appropriate time periods.<sup>44</sup>The plan's costs should be reflected in the financial statements and these amounts shouldn't be discretionary. All pension cost should be charged against income. No

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<sup>42</sup> Kieso, op.cit., pp.1097-1098

<sup>43</sup> Ibid, pp.1097-1098

<sup>44</sup> Ibid, p.1098.

amounts should be charged directly to retained earnings. Net periodic pension cost consist of the sum of the following five components:<sup>45</sup>

1. Service cost
2. Interest on the Liability
3. Actual Return on Plan Assets
4. Amortization of Unrecognized Prior Service Cost
5. Gain or Loss

#### **2.3.2.1. SERVICE COST**

The expense caused by the increase in pension benefits payable (the projected benefit obligation) to employees because of their services rendered during the current year. Actuaries compute service cost as the present value of the new benefits earned by employees during the year.<sup>46</sup>

#### **2.3.2.2. INTEREST ON THE LIABILITY**

Because a pension is a deferred compensation arrangement, there is a time value of money factor. As a result, it is recorded on a discounted basis. Interest expense accrues each year on the projected benefit obligation just as it does on any discounted debt. The accounted receives help from the actuary in selecting the interest rate, called for this purpose the settlement rate.<sup>47</sup>

#### **2.3.2.3. ACTUAL RETURN ON PLAN ASSETS**

The return earned by the accumulated pension fund assets in a particular year is relevant in measuring the net cost to the employer of sponsoring an employee pension plan. Therefore, annual pension expense should be adjusted for interest and

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<sup>45</sup> Kieso, op.cit., p.1098

<sup>46</sup> Ibid, p.1098

<sup>47</sup> Ibid, p.1098.

dividends that accumulate within the fund as well as increase and decreases in the market value of the fund assets.<sup>48</sup>

#### **2.3.2.4. AMORTIZATION OF UNRECOGNIZED PRIOR SERVICE COST**

Pension plan amendments (including initiation of pension plan) often include provisions to increase benefits (in rare situation to decrease benefits) for employee service provided in prior year. Because plan amendments are granted with the expectation that the employer will realize economic benefits in future periods, the cost (prior service cost) of providing these retroactive benefits is allocated to pension expense in the future, specifically to the remaining service- years of the effected employees.<sup>49</sup>

#### **2.3.2.5. GAIN OR LOSS**

Volatility in pension expense can be caused by sudden and large changes in the market value of plan assets and by changes in the projected benefit obligation. Two items comprise this gain or loss (1) the difference between the actual return and the expected return on plan assets (2) amortization of the unrecognized net gain or loss from previous periods. In summary, the components of pension expense and their effect are as follows:

Service cost (increase pension expense)

Interest on the liability (increase pension expense)

Actual return on plan assets (generally decreases pension expense)

Amortization of unrecognized prior service cost (generally increases pension expense)

Gain or loss (decreases or increases pension expense).<sup>50</sup>

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<sup>48</sup> Kieso, op.cit., pp.1098-1099.

<sup>49</sup> Ibid, p.1098

<sup>50</sup> Ibid, p.1098.

Elements of pension plans that effect the determination of the above components of pension cost and amount to be shown on the balance sheet are the accumulated benefit obligation. Projected benefit obligation, and plan assets both obligations are the actuarial present value of benefits attributed by the formula to service prior to given date. The accumulated benefit obligation doesn't include an assumption about future compensation levels, whereas the projected benefit obligation include.<sup>51</sup>

|                                      |                          |
|--------------------------------------|--------------------------|
| Example:                             | <u>start of the year</u> |
| Accumulated benefit obligation (ABO) | \$(2,500)                |
| Progression of salary and wages      | <u>(500)</u>             |
| Projected benefit obligation         | \$(3,000)                |

The actuary presents these amounts in a pension plan report. Plan assets include contributions and asset earnings less benefit paid. They must be separated and effectively restricted for pension benefits.

## 2.4. LIABILITIES FOR PENSIONS

Many employers agree to pay their employees a pension; that is, monthly cash payments for life, beginning after they retire. Pensions are not an expense of the years in which cash payments are made to retired workers. Employees earn the right to receive the pension while they are working for their employer. Therefore, the employer's cost of future pension payments accrues over the years that each employee is "on the payroll".<sup>52</sup>

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<sup>51</sup> Delaney, op.cit., p.583

<sup>52</sup> Meigs & Meigs, op.cit., p.732.

### **2.4.1. DETERMINING PENSION EXPENSE**

The amount of the pension expense for a period depends on the type of pension plan. There are two basic types: the defined contribution plan and the defined benefit plan.

#### **2.4.1.1. DEFINED CONTRIBUTION PLAN**

An employer that establishes a defined contribution plan agrees to deposit a certain amount with the trustee each year to pay for future retirement benefits. When employees retire, they receive their share of the funds that have accumulated in the plan. From the employer's perspective there is no uncertainty in offering this type of plan. Pension expense is simply equal to the required deposit (contribution) for each period.<sup>53</sup>

#### **2.4.1.2. DEFINED BENEFIT PLAN**

In a defined benefit plan, the employer agrees to pay all employees a percentage of their highest annual salary for life after they retire. The amount of these defined benefits that must be paid to today's workers after they retire is not known with certainty. Among other things, the amounts depend on how much the employees are making when they retire and how long they will live. The employer's obligations for future pension payments arising during the current year can only be estimated.<sup>54</sup> We will examine on defined benefit plan.

### **2.5. DEFINED BENEFIT PENSION PLANS**

The principle elements of defined benefit pension plan are:<sup>55</sup>

- The obligation for benefits to be paid to retirees
- The plan assets that are invested to meet that obligation

#### **2.5.1. ESTIMATING BENEFIT OBLIGATIONS**

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<sup>53</sup> Meigs & Meigs, op.cit., p.733.

<sup>54</sup> Ibid, p.733.

<sup>55</sup> Gerald I. White, Ashwinpaul C. Sondhi and Dov Fried, *The Analysis and use of Financial Statements*, 1998, p.597.

The benefit obligation is highly sensitive to the assumptions (Discount Rate and Rate of Compensation Increase) used to estimate future benefits.

#### Components of Benefit Obligation and Plan Assets<sup>56</sup>

**FIGURE 2.1 COMPONENTS OF BENEFIT OBLIGATION AND PLAN ASSETS**

| <b>Assumptions</b>            | <b>Benefit Obligation</b>     | <b>Plan Assets</b>           |
|-------------------------------|-------------------------------|------------------------------|
|                               | <b>Recurring</b>              | <b>Return on Plan Assets</b> |
| Discount rate                 | Service Cost                  |                              |
|                               | +Interest Cost                |                              |
| Rate of Compensation Increase | <b>Volatile</b>               | +Contributions               |
|                               | +/-Actuarial Gains or losses. |                              |
|                               | +/-Prior Service Cost         |                              |
|                               | =Gross Pension Cost           |                              |
|                               | -Benefits Paid                | -Benefits Paid               |
|                               | =Change in Benefit Obligation | =Change in Plan Assets       |

Three measures of the pension obligation must be disclosed under current accounting rules. All these measures are based on the same assumptions and discount rate. The Accumulated Benefit Obligation (ABO) is the present value of pension benefits earned as of the balance sheet date based on current salaries. The Projected Benefit Obligation (PBO) includes projected salary increases for career average or final pay plans. The third measure, The Vested Benefit Obligation (VBO), includes only the portion of benefit obligations that is not contingent on future service.<sup>57</sup> SFAS 87 mandates use of the PBO to measure the pension benefit obligation.<sup>58</sup>

<sup>56</sup> White, op.cit., p.598.

<sup>57</sup> Ibid, p.597.

<sup>58</sup> Ibid, p.598.

## 2.6. APPLICATION OF PENSION FUND COMPONENTS

### 2.6.1. SERVICE COST

According to SFAS 87, the actuary predicts the additional benefits that must be paid under the plans' benefit formula as a result of employees' current year's service and then discounts the cost of those future benefits to present values.

Example: 

|                                      | <u>Beginning of the Year</u> | <u>Service Cost</u> |
|--------------------------------------|------------------------------|---------------------|
| Accumulated benefit obligation (ABO) | \$(2,500)                    | \$(100)             |
| Progression of salary and wages      | <u>(500)</u>                 | <u>(25)</u>         |
| Projected benefit obligation (PBO)   | \$(3,000)                    | \$(125)(a)*         |

\* The actuary provides this amount.

### 2.6.2. INTEREST COST ON THE PROJECTED BENEFIT LIABILITY

Second component of pension expense is the interest on the liability, or interest expense. The interest component is the interest for the period on the projected benefit obligation outstanding. Interest (settlement) rate should be determined by an annual review and represents the time value of money. The result of accumulation of interests that increase in pension expense and the projected benefit obligation.<sup>59</sup>

Example:

|                                 | <u>Start of the Year</u> | <u>Service Cost</u> | <u>Interest Cost</u> |
|---------------------------------|--------------------------|---------------------|----------------------|
| Accumulated benefit obligation  | \$(2,500)                | \$(100)             | \$(225)              |
| Progression of salary and wages | <u>(500)</u>             | <u>(25)</u>         | <u>(45)</u>          |
| Projected benefit obligation    | \$(3,000)                | \$(125)             | \$(270)*             |

\* Interest rate assumed 8%

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<sup>59</sup> Kieso, op.cit., pp.1099-1100.

If the benefit paid to retirees that amounts are deducted from the above amounts to arrive at the end of the year balance sheet figures for accumulated benefit obligation and the projected benefit obligation.

### 2.6.3. ACTUAL RETURN ON PLAN ASSETS

Pension plan assets are usually invested in stocks, bonds, real estate, and corporate bonds. Pension plan assets are increased by employer's contribution, actual return in pension funds from interest, dividends and realized - unrealized changes in the fair market value of the plan assets, decrease by benefits paid. We can compute actual return this way:<sup>60</sup>

Actual return: (plan assets ending balance-plan assets beginning balance) - (contribution- benefit paid)

-Example: we used some assumed amounts:

|                                                        |                  |
|--------------------------------------------------------|------------------|
| Fair value of plan assets at the end of year           | \$10,000         |
| Fair value of plan assets at the beginning of the year | <u>\$(7,500)</u> |
| Increase in fair value of plan assets                  | \$2,500          |
| Contributions to plan during the years                 | (300)            |
| Benefits paid during the year                          | <u>500</u>       |
| Actual return on plan assets                           | \$2,700          |

If the actual return on the plan assets positive during the year, it is subtracted in the computation of pension expense. If the return is negative, it is added in the computation of pension expense. Several significant items of pension plan are unrecognized in the accounts and in the financial statements, under SFAS 87. Among the compromises the FASB made in issuing statement 87 was the non-recognition (non-capitalization) of the following pension items:

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<sup>60</sup> Kieso, op.cit., p.1100.

1. Projected benefit obligation
2. Pension plan assets
3. Unrecognized prior service cost
4. Unrecognized net gain or loss

The employer is required to disclose in notes to the financial statements all of these four non-capitalized items. The exact amounts of these items must be known at all times because they are used in the computation of annual pension expense.

Now let's assume that pension expense equal to the amount of cash contributed to the plan by the employer as a plan sponsor, the journal entry is:<sup>61</sup>

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DR Pension Expense

xxx

CR Cash

xxx

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#### 2.6.3.1 THE JOURNAL ENTRY TO RECORD THE PENSION EXPENSE AND FUNDING

For illustration of the journal entry for pension expense, below data are assumed for December 31, 1999:

|                                                 |            |
|-------------------------------------------------|------------|
| Service Cost                                    | \$32,000   |
| Interest Cost                                   | \$40,000   |
| Actual Return on Plan Assets                    | \$(35,000) |
| Amortization of Unrecognized Prior Service Cost | \$10,000   |

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<sup>61</sup> Lawrence Revsine, Daniel W. Collins and W. Bruce Johnson, *Financial Reporting and Analysis*, 1998, p. 674.

|        |                 |
|--------|-----------------|
| Losses | <u>\$12,500</u> |
|--------|-----------------|

|                      |                 |
|----------------------|-----------------|
| 1999 Pension Expense | <u>\$59,500</u> |
|----------------------|-----------------|

There is a three possible situation for funding and journal entry:

1. The entire amount of pension expense -\$59,500- can be funded by employer to the trustee, the entry is straightforward.<sup>62</sup>

|                    |          |          |
|--------------------|----------|----------|
| DR Pension Expense | \$59,500 |          |
|                    |          | CR Cash  |
|                    |          | \$59,500 |

2. A firm not required to fund full amount. When the amount of funding differs from the recognized expense, an additional balancing debit or credit must be established. If Company select to fund partially \$50,000 in 1999, the entry would be:<sup>63</sup>

|                    |          |                                  |
|--------------------|----------|----------------------------------|
| DR Pension Expense | \$59,500 |                                  |
|                    |          | CR Cash                          |
|                    |          | \$50,000                         |
|                    |          | CR Unfunded Accrued pension Cost |
|                    |          | 9,500                            |

The unfunded accrued pension cost account would appear on the balance sheet as a liability.

<sup>62</sup> Revsine, op.cit., p.690.

<sup>63</sup> Ibid, p.690.

3. If company determine to fund \$65,000 in 1999, the entry would be :<sup>64</sup>

|                         |          |
|-------------------------|----------|
| <hr/>                   |          |
| DR Pension expense      | \$59,500 |
| DR Prepaid Pension Cost | 5,500    |
|                         |          |
| CR Cash                 | \$65,000 |
| <hr/>                   |          |

The prepaid pension cost account would be shown as an asset on the December 31, 1999 balance sheet.

#### 2.6.3.2. THE PENSION FUNDING DECISION

The U.S. tax law also influences pension plan funding. Because plan contributions are tax deductible and plan earnings are nontaxable to the plan sponsor, there is a tax incentive to overfund pension plan. Because of this incentive, the tax law places limits on the deductibility of contributions to already overfunded pension plan.<sup>65</sup>

##### 2.6.3.2.1. FUNDED STATUS OF PENSION PLAN

For understanding the funded status of a plan, we must understand what factors cause the pension plan assets and liabilities to change over time. Below figure displays the causes for increases and decreases in plan assets.<sup>66</sup>

<sup>64</sup> Revsine, op.cit., p.690

<sup>65</sup> Ibid, pp. 690-691.

<sup>66</sup> Ibid, p.693.

**Plan Assets**

| DR                                                                                                   | CR                                                                                 |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| A. Beginning balance of plan assets at market value                                                  | D. Plan trustees distribution of plan Assets ( pension payments) to plan Trustees. |
| B. Actual return on plan assets During the period ( dividends, Interest and change in market Value ) |                                                                                    |
| C. Contribution of addition plan assets during the period by the plan sponsor and plan participants  |                                                                                    |
| E. Ending balance of plan assets at Market value<br>( A+B+C-D =E)                                    |                                                                                    |

In the pension plan liabilities -the Projected Benefit Obligation (PBO)- SFAS No.132 also requires that plan sponsors disclose these increases and decreases in the pension plan footnote.<sup>67</sup>

**Projected Benefit Obligation**

| DR                                                                                 | CR                                                                                                                      |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| K. Plan trustee's distribution of plan assets ( pension payments) to plan retirees | F. Beginning balance start of period discounted present value of expected pension benefits that will ultimately be paid |
|                                                                                    | G. Service cost during the period                                                                                       |
|                                                                                    | H. Interest cost during the period                                                                                      |
|                                                                                    | I. Change in promised benefits arising from plan amendments or curtailments during period                               |
|                                                                                    | J. Actuarial gains or losses during period from changes in assumptions (mortality                                       |

<sup>67</sup> Revsine, op.cit., p.694.

and turnover rates, interest rates and soon.)

L. Ending balance and of period discounted present value of expected pension benefits.

$$(F+G+H(+/-)I(+/-)J-K=L)$$

The change in the pension plan status reflects both the nonsmoothed pension cost and the actual cash flows of the plan (contributions and benefits paid). Below figure demonstrates these relationships in T- account format.<sup>68</sup>

(a). Economic Position

| Pension Fund                                          |               | Pension Liability |                                                                                                                    |
|-------------------------------------------------------|---------------|-------------------|--------------------------------------------------------------------------------------------------------------------|
| Opening balance contributions<br>(5) Return on assets | Benefits Paid | Benefits Paid     | Opening Balance<br>Service Cost (1)<br>Interest Cost (2)<br>Actuarial Gains or Losses (3)<br>Prior service cost(4) |
| Closing Balance                                       |               |                   | Closing Balance                                                                                                    |

Net Economic Position  
(Fund -Liability)

|                                       |                                                                                                                |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Contributions<br>(5) Return on assets | Opening Balance<br>Service Cost<br>Interest Cost (2)<br>Actuarial Gains or Losses (3)<br>Prior service cost(4) |
|                                       | Closing Balance                                                                                                |

<sup>68</sup> White, op.cit., p.602.

## (b) Financial statements

| Balance Sheet        |                             |
|----------------------|-----------------------------|
| Contributions        | Opening Balance             |
| (5) Return on assets | Service Cost                |
|                      | Interest Cost (2)           |
|                      | <i>Actuarial Gains or</i>   |
|                      | <i>Losses (3)</i>           |
|                      | <i>Prior service cost(4</i> |
|                      | Closing Balance             |
|                      | (Smoothed items in Italics) |

Work sheet which we will be use is shown below<sup>69</sup>:

| GENERAL JOURNAL ENTRIES |                |             |             | MEMO RECORD       |               |
|-------------------------|----------------|-------------|-------------|-------------------|---------------|
| Annual                  |                | Prepaid     |             | Projected         |               |
| Pension                 |                | Accrued     |             | Benefit           | Plan          |
| <u>Items</u>            | <u>Expense</u> | <u>Cash</u> | <u>Cost</u> | <u>Obligation</u> | <u>Assets</u> |

The left-side columns of work sheet record entries in the format general ledger accounts. The right-side columns maintain balances on the unrecognized (non-capitalized) pension items. The balance in the prepaid/accrued cost column should equal the net balance in the memo record.

We assume that on January 1, 1995 Intel Company adapts SFAS87 to account its defined benefit plan and data of pension plan like below:

Plan assets, January 1, 1995, are \$150,000

Projected benefit obligation (PBO) 1, 1995 is \$150,000

Annual service cost for 1995 is \$20,000

Settlement (interest) rate for 1995 is 10%

Actual return on plan assets for 1995 is \$15,000

<sup>69</sup> Paul, B. W. Miller, "The New Pension Accounting (Part 2) ", *Journal Of Accountancy*, February 1987, PP. 88-94; Kieso op.cit., p.1101

Contributions (funding) in 1995 are \$10,000

Benefits paid to retirees in 1995 are \$7,500

Now using the data we prepare journal entries and memo records:

### INTEL COMPANY

#### General Journal Entries

|                        | Annual Pension  |                 | Prepaid Accrued   |
|------------------------|-----------------|-----------------|-------------------|
| <u>Items</u>           | <u>Expense</u>  | <u>Cash</u>     | <u>Cost</u>       |
| Balance Jan. 1, 1995   |                 |                 |                   |
| (a) Service cost       | 20,000dr        |                 |                   |
| (b) Interest cost      | 15,000dr*       |                 |                   |
| (c) Actual return      | 15,000cr        |                 |                   |
| (d) Contributions      |                 | 10,000cr        |                   |
| (e) Benefits           |                 |                 |                   |
| Journal entry for 1995 | <u>20,000dr</u> | <u>10,000cr</u> | <u>10,000cr**</u> |
| Balance December 31    |                 |                 | 10,000cr***       |

\*\$150,000x 10%=\$15,000

\*\*\$20,000-\$10,000=\$10,000

\*\*\*\$177,500- \$167,500=\$10,000

The journal entry for December 31,

|                              |            |        |
|------------------------------|------------|--------|
|                              | 31,12,1995 |        |
| Pension expense              | 20,000     |        |
|                              |            | 10,000 |
| Cash                         |            |        |
| Prepaid/Accrued Pension Cost |            | 10,000 |

| Memo Record                |                    |                    |
|----------------------------|--------------------|--------------------|
|                            | Projected Benefit  | Plan               |
| <u>Items</u>               | <u>Obligation</u>  | <u>Assets</u>      |
| Balance, January 1, 1995   | \$150,000cr        | \$150,000dr        |
| (a) Service cost           | 20,000cr           |                    |
| (b) Interest cost          | 15,000cr           |                    |
| (c) Actual return          |                    | 15,000dr           |
| (d) Contributions          |                    | 10,000dr           |
| (e) Benefits               | <u>7,500dr</u>     | <u>7,500cr</u>     |
| Balance, December 31, 1995 | <u>\$177,500cr</u> | <u>\$167,500dr</u> |

The beginning balance for Projected Benefit Obligation (PBO) and Plan Assets are recorded in the memo record. They aren't recorded in formal general journal due to this, which are not reported as liability and assets in the financial statements of company. These two pension items are off-balance -sheet amounts that affect pension expense but aren't recorded as assets and liabilities in employer's book.

Entry (a) service cost which increase the pension cost and projected benefit obligation (liability) \$20,000. Entry (b) interest cost which is computed by the beginning PBO multiplied by the settlement rate as a result of this operation pension expense and PBO increased. Entry (c) that increased plan assets and decreased pension expense. Entry (d) cash is decreased and plan assets increased amount \$15,000. Entry (e) which result equal decrease both PBO and plan assets \$10,000.

The reconciliation is shown below:

|                                       |                    |
|---------------------------------------|--------------------|
| Projected benefit obligation (credit) | <u>\$(177,500)</u> |
| Plan assets at fair value (debit)     | <u>\$167,500</u>   |
| Prepaid accrued pension cost (credit) | <u>\$10,000</u>    |

Now lets show in subsidiary ledger accounts:

#### PENSION EXPENSE SUBSIDIARY LEDGER

| SERVICE COST | INTEREST COST | ACTUAL RETURN |
|--------------|---------------|---------------|
| a)20,000     | b)15,000      | c)15,000      |
| 20,000       | 15,000        | 15,000        |

#### MEMO RECORD

| PROJECTED BENEFIT OBLIGATION |                 | PLAN ASSETS     |         |
|------------------------------|-----------------|-----------------|---------|
| e)7,500                      | 150,000 Big.Bal | 150,000 Big.Bal | e)7,500 |
|                              | a)20,000        | c)15,000        |         |
|                              | b)15,000        | d)10,000        |         |
| 7,500                        | 185,000         | 175,000         | 7,5000  |
|                              |                 | 167,500         |         |
|                              | 177,500         |                 |         |

#### GENERAL LEDGER

| ANNUAL PENSION EXPENSE | CASH     | PREPAID/ACCRUED COST |
|------------------------|----------|----------------------|
| 35,000                 | d)10,000 | 10,000               |
| 20,000                 | 10,000   | 10,000               |

#### **2.6.4 AMORTIZATION OF UNRECOGNIZED PRIOR SERVICE COST (PSC):<sup>70</sup>**

Prior service cost result from plan amendments accounted for as a change in estimate. These cost are measured at the amendments date by the increase in the projected benefit obligation. The service period of every active employee expected to receive benefits is to be determined, and then an equal amount of prior service cost should be assigned to each period. If most of plan participants are inactive then remaining life expectancy should be used instead of remaining service life. If an amendment reduces the PBO, unrecognized prior service cost should be reduced. If the average remaining service period is less than 15-years, the employer may elect to use a 15-year period.

The FASB prefers a years-of- service amortization method. First, the total number of service years to be worked by all of the participating employees is computed. Second, unrecognized prior service cost divided by the total number of service years as to obtain a cost per service years. Third, the number of service years are multiplied by the per service years' cost.

Example: Let's assume that Intel company's defined benefit pension plan cover 150 employees. Intel Company amends its pension plan on January 1995, and grants \$75,250 of prior service cost its employees. The employees are grouped as follows according to expected years of retirement.

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<sup>70</sup> Kieso, op.cit., p.1103.

| <u>GROUP</u> | <u>NUMBER OF EMPLOYEES</u> | <u>EXPECTED RETIREMENT<br/>ON DECEMBER 31</u> |
|--------------|----------------------------|-----------------------------------------------|
| A            | 50                         | 1999                                          |
| B            | 40                         | 2000                                          |
| C            | 20                         | 2001                                          |
| D            | 40                         | 2002                                          |

The computation of the service years per year and total service years is shown below:

#### SERVICE YEARS

| <u>YEARS</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>TOTAL</u> |
|--------------|----------|----------|----------|----------|--------------|
| 1999         | 50       | 40       | 20       | 40       | 150          |
| 2000         |          | 40       | 20       | 40       | 100          |
| 2001         |          |          | 20       | 40       | 60           |
| 2002         |          |          |          | 40       | 40           |
|              | 50       | 80       | 60       | 160      | 350          |

The cost per service year is according to the straight-line method \$215 (75,250: \$350). The annual amortization for per year likes below:

| <u>Year</u> | <u>Total Service<br/>Year</u> | <u>Cost Per<br/>Service Year</u> | <u>Annual<br/>Amortization</u> |
|-------------|-------------------------------|----------------------------------|--------------------------------|
| 1999        | 150                           | \$215                            | \$32,250                       |
| 2000        | 100                           | \$215                            | \$21,500                       |
| 2001        | 60                            | \$215                            | \$12,900                       |
| 2002        | 40                            | \$215                            | <u>\$8,600</u>                 |
| TOTAL       |                               |                                  | \$75,250                       |

If the FASB had adopted full capitalization of pension plan, the prior service cost would have been capitalized as an intangible assets-pension good will.

The intangible asset comes from the assumption that the cost of additional pension benefits increases loyalty and productivity among the employee

Example with 1999 entries and work-sheet:

The following pension plan component is assumed for Intel Company

|                                                        |           |
|--------------------------------------------------------|-----------|
| On January 1, 1999, PSC present value is               | \$75,200  |
| Annual service cost for 1999 is                        | \$12,500  |
| Settlement rate for 1999 is                            | 0%        |
| Actual return on plan assets for 1999 is               | \$15,000  |
| Annual contributions (funding) are                     | \$20,000  |
| Benefits paid to retirees in 1999 are                  | \$9,000   |
| Amortization of prior service cost is                  | \$32,250  |
| Prepaid/Accrued cost at the end of the 1998 is         | \$10,000  |
| Projected benefit obligation at the end of the 1998 is | \$115,000 |
| Plan assets at the end of the 1998 is                  | \$105,000 |
| Prior service cost for 1998 is                         | \$75,250  |

**INTEL COMPANY**  
**General Journal Entries**

|                          | <b>Annual</b>   |                 | <b>Prepaid</b>  |
|--------------------------|-----------------|-----------------|-----------------|
|                          | <b>Pension</b>  |                 | <b>Accrued</b>  |
| <u>Items</u>             | <u>Expense</u>  | <u>Cash</u>     | <u>Cost</u>     |
| Balance Dec.31, 1998     |                 |                 | 10,000cr        |
| (f) Prior service cost   |                 |                 |                 |
| Balance, Jan. 1, 1999    |                 |                 | 10,000cr        |
| (g) Service cost         | 12,500dr        |                 |                 |
| (h) Interest cost        | 19,025dr*       |                 |                 |
| (l) Actual return        | 15,000cr        |                 |                 |
| (j) Amortization of PSC  | 32,250dr        |                 |                 |
| (k) Contributions        | 20,000cr        |                 |                 |
| (l) Benefits to retirees |                 |                 |                 |
| January entry for 1999   | <u>48,775dr</u> | <u>20,000cr</u> | <u>28,775cr</u> |
| Balance, Dec. 31, 1999   |                 |                 | <u>38,775cr</u> |

\*\$190,250x10%=\$19,025

| Items                    | Memo Record        |                  |                    |
|--------------------------|--------------------|------------------|--------------------|
|                          | Projected          | Plan             | Unrecognized       |
|                          | Benefit Obligation | Assets           | Prior Service Cost |
| Balance Dec.31,1998      | 115,000cr          | 105,000dr        |                    |
| (f) Prior service cost   | <u>75,250cr</u>    |                  | <u>75,250dr</u>    |
| _Balance, Jan. 1999      | 190,250cr          | 105,000dr        | 75,250dr           |
| (g) Service cost         | 12,500cr           |                  |                    |
| (h) Interest cost        | 19,025cr           |                  |                    |
| (I) Actual return        |                    | 15,000dr         |                    |
| (j) Amortization of      |                    |                  |                    |
| Prior service cost       |                    |                  | 32,250cr           |
| (k) Contributions        |                    | 20,000dr         |                    |
| (l) Benefits to retirees | 9,000dr            | 9,000cr          |                    |
| Journal entry for 1999   | -                  | -                | -                  |
| Balance Dec.31, 1999     | <u>212,775cr</u>   | <u>131,000dr</u> | <u>43,000dr</u>    |

The journal entry on December, 31,1999 for pension expense is as follows:

\_\_\_\_\_ 31,12,1999 \_\_\_\_\_.

|                      |        |        |
|----------------------|--------|--------|
| Pension Expense      | 48,775 |        |
| Cash                 |        | 20,000 |
| Prepaid/Accrued Cost |        | 28,775 |

Pension reconciliation schedule December, 31,1999:

|                                         |                |
|-----------------------------------------|----------------|
| Projected benefit obligation (credit)   | \$(212,775)    |
| Plan assets at fair value (debit)       | <u>131,000</u> |
| Funded status                           | (81,775)       |
| Unrecognized prior service cost (debit) | 43,000         |
| Prepaid /accrued pension cost (credit)  | \$(38,775)     |

### 2.6.4.1 EXAMPLE FOR PENSION EXPENSE, JOURNAL ENTRIES, STATEMENT PRESENTATION AND MINIMUM LIABILITY

Let's assume that Intel Company sponsors a defined benefit pension plan for its employees. The following data relate to the operation of the plan for the year 1997 in which no benefits were paid:

|                                                 |             |
|-------------------------------------------------|-------------|
| Actuarial present value of future benefits      | \$66,000    |
| Contributions for 1997                          | \$155,000   |
| Projected benefit obligation Jan. 1, 1997       | \$1,100,000 |
| Accumulated benefit obligation Jan. 1, 1997     | \$930,000   |
| Unrecognized prior service cost Jan. 1, 1997    | \$500,000   |
| Fair value of plan assets Jan. 1, 1997          | \$700,000   |
| Actual and expected return for 1997             | \$64,000    |
| Amortization of Unrecognized prior service cost | \$50,000    |
| Settlement rate, 9%                             |             |
| No benefits paid                                |             |

#### a) Computation of pension expense for 1997 :

|                                                           |                  |
|-----------------------------------------------------------|------------------|
| Service cost                                              | \$66,000         |
| Interest on projected benefit obligation (9% x 1,100,000) | 99,000           |
| Actual and expected return on plan assets                 | (64,000)         |
| Amortization of Unrecognized net gain or loss             | -0-              |
| Amortization of Unrecognized prior service cost           | <u>50,000</u>    |
| Pension expense.....                                      | <u>\$151,000</u> |

#### b) Journal Entry

|                                                         |         |
|---------------------------------------------------------|---------|
| Pension Expense.....                                    | 151,000 |
| Prepaid pension cost.....                               | 4,000*  |
| Cash .....                                              | 155,000 |
| (To record pension expense and employer's contribution) |         |

---

\*\$155,000-\$151,000 = \$4,000

## c) Income statement and balance sheet:

## INCOME STATEMENT

|                 |                  |
|-----------------|------------------|
| Pension Expense | <u>\$151,000</u> |
|-----------------|------------------|

## BALANCE SHEET:

ASSETSLIABILITIES

|                                        |          |                      |          |
|----------------------------------------|----------|----------------------|----------|
| Intangible Asset-Deferred pension cost | \$66,000 | Accrued Pension cost | \$11,000 |
|----------------------------------------|----------|----------------------|----------|

## d) Minimum liability computation:

|                                               |                  |
|-----------------------------------------------|------------------|
| Accumulated benefit obligation                | \$(930,000)      |
| Fair value of plan assets                     | <u>919,000*</u>  |
| Minimum Liability .....                       | \$(11,000)       |
| Prepaid /Accrued pension cost (on asset)..... | <u>(4,000)</u>   |
| Additional liability .....                    | (15,000)         |
| Unrecognized prior service cost.....          | <u>450,000**</u> |
| Contra equity charge.....                     | <u>\$ -0-</u>    |

\*\$919,000 = \$700,000+\$155,000+\$64,000

\*\*\$450,000 = \$500,000-\$50,000

## 2.6.5 AMORTIZATION OF UNRECOGNIZED NET ASSETS OR NET OBLIGATION

Any difference between the projected benefit obligation and the fair value of plan assets minus recognized prepaid or plus accrued pension cost at the beginning of the fiscal year of the initial SFAS 87 application to be amortized. The amortization is to be on a straight- line basis over the average remaining active employee service period. If all or almost all of plan's participants are inactive, the employer shall use the inactive participants' average remaining expectancy period.

### **2.6.6 GAIN OR LOSS<sup>71</sup>**

Gain (loss) result from (1) changes in plan assumptions, (2) changes in the amount of the plan assets, and (3) changes in the amount of the projected benefit obligation. If these gains and losses were to impact the financial statements, substantial fluctuations in pension expense would result. Because of these situation, the profession use some method for eliminate the fluctuations.

#### **2.6.6.1 SMOOTHING UNEXPECTED GAIN AND LOSSES ON PLAN ASSETS**

Plan asset gain (losses) result from both realized and unrealized amounts. They represent periodic differences between the actual return on assets and the expected return. Multiplying the expected long-term rate of return generates the expected return and the market related value of plan assets. The market related asset value is calculated value that recognizes changes in fair value in a systematic and rational manner over not more than 5 years. Different calculating ways may be used, but manner of determining market related value should be applied consistently from year to year for each assets class.

#### **2.6.6.2 SMOOTHING UNEXPECTED GAIN OR LOSES ON THE PENSION LIABILITY**

Actuaries make assumptions when they estimating projected benefit obligation, such as mortality rate, retirement rate, disability rate, salary amounts, turnover rate. Any changes in these assumption changes the amount of the projected benefit obligation. These changes are called liability gains or losses. Liability gains (unexpected decrease in the liability balance) a liability losses (unexpected increase in the liability balance) are deferred (unrecognized). They are accumulated from year to year, off-balance-sheet, in a memo record account.

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<sup>71</sup> Kieso, op.cit., pp.1105-1106

### 2.6.6.2.1 CORRIDOR AMORTIZATION

The FASB invented the corridor approach for amortizing the accumulated balance in the unrecognized gain or loss account when it gets too large. The unrecognized net gain or loss balance is considered to large and must be amortized when it exceeds the arbitrarily selected FASB criterion of 10% of the larger of the beginning balances of the projected benefit obligation (PBO) or the market-related value of the plan assets. For instance we assumed the data:

| <u>Year</u> | <u>PBO</u>         | <u>Market-related</u><br><u>Asset value</u> | <u>Corridor</u><br><u>+/- 10%</u> |
|-------------|--------------------|---------------------------------------------|-----------------------------------|
| 1999        | <u>\$1,700,000</u> | \$1,100,000                                 | \$170,000                         |
| 2000        | 1,500,000          | <u>2,150,000</u>                            | 215,000                           |
| 2001        | <u>1,250,000</u>   | 1,000,000                                   | 125,000                           |

If the balance of the unrecognized net gain or loss account stays within the upper and lower limits of the corridor, no amortization is required. If amortization is required, the minimum amortization excess shall be divided by the average remaining service period of active employees expected to receive benefits under the plan.

We assumed following information to illustrate the amortization of unrecognized net gain and losses:

|                              | <u>1998</u> | <u>1999</u> | <u>2000</u> |
|------------------------------|-------------|-------------|-------------|
| Projected benefit obligation | \$2,500,000 | \$2,800,000 | \$2,700,000 |
| Market related asset value   | 2,200,000   | 3,100,000   | 2,400,000   |
| Unrecognized net loss        | -0-         | 350,000     | 400,00      |

Now we assume average remaining service life of all active employees 7,5 years, the schedule as follows:

| Year | Projected<br>Benefit<br>Obligation* | Plan<br>Assets*  | Corridor** | Cumulative<br>Unrecognised<br>Net loss* | Minimum<br>Amortiz. Of<br>Loss |
|------|-------------------------------------|------------------|------------|-----------------------------------------|--------------------------------|
| 1998 | <u>\$2,500,000</u>                  | \$2,200,000      | \$250,000  | \$-0-                                   | \$-0-                          |
| 1999 | 2,800,000                           | <u>3,100,000</u> | 310,000    | 350,000                                 | \$5,333***                     |
| 2000 | <u>2,700,000</u>                    | 2,400,000        | 270,000    | 744,667                                 | \$63,299****                   |

\* Beginning of the period

\*\* 10% of the greater of projected benefit obligation or plan assets market related value

\*\*\*  $\$350,000 - \$310,00 = \$40,000 : 7.5 = \$5,333$

\*\*\*\*  $\$400,000 + \$350,000 - \$5,333 = \$744,667 - \$270,000 = \$474,667 : 7.5 = \$63,299$

As it seen in up table, the loss recognized in 1999 increased pension expense by \$5,333 which amount is small comparison with the total loss of \$350,00. This approach reduced volatility of gain and losses on pension expense.

Gains and losses that arise from a single occurrence not directly related to the operation of the pension plan and not in the ordinary course of the employer's business should be recognized immediately.<sup>72</sup> For instance, a gain or loss that is directly related to a plant closing that effects the size of employee work force.

Shall we recognise as a part of the gain or loss associate with that event? Finally we can say that, the unrecognised gain or loss at the beginning of the year is not amortised unless it's greater than the corridor. The excess spread over the remaining service life of existing employees.

<sup>72</sup> Kieso, op.cit., p.1108.

Example for gain and losses:

|                                                                       |           |
|-----------------------------------------------------------------------|-----------|
| Prepaid/accrued cost, Jan, 1,2000                                     | \$38,775  |
| Plan assets, Jan, 1,2000 are                                          | \$131,000 |
| Projected benefit obligation (PBO), Jan 1, 2000 is                    | \$212,275 |
| Unrecognized prior service cost, Jan, 1, 2000 is                      | \$43,000  |
| Annual service cost for 2000 is                                       | \$15,000  |
| Settlement rate is 10%, expected return rate is                       | 10%       |
| Actual return on plan assets for 2000 is                              | 12,000    |
| Amortization of prior service cost (PSC) in 2000                      | \$21,500  |
| Annual contributions (funding) are                                    | \$25,000  |
| Benefits paid to retirees in 2000 are                                 | \$12,500  |
| Changes in actuarial assumptions establish the end of the year PBO at | \$250,000 |

Now we prepare the work sheet and memo account:

|                          | General Journal Entries |                 |                   |
|--------------------------|-------------------------|-----------------|-------------------|
|                          | Annual                  |                 | Prepaid           |
|                          | Pension                 |                 | Accrued           |
| <u>Items</u>             | <u>Expense</u>          | <u>Cash</u>     | <u>Cost</u>       |
| Balance Dec, 31, 1999    |                         |                 | 38,775cr          |
| (m) Service cost         | 15,000dr                |                 |                   |
| (n) Interest cost        | 21,277.5dr              |                 |                   |
| (o) Actual return        | 12,000cr                |                 |                   |
| (p) Unexpected loss      | 1100cr                  |                 |                   |
| (q) Amortization of PSC  |                         |                 |                   |
| ( r )Contributions       | 21,500dr                |                 |                   |
| (s) Benefits             |                         | 25,000cr        |                   |
| (t) Liability increase   |                         |                 |                   |
| Journal entries for 2000 | <u>44,677.5dr</u>       | <u>25,000cr</u> | <u>19,677.5cr</u> |
|                          |                         |                 | 58,452.5c         |

## Memo Record

| ITEMS                    | PROJECTED           | UNRECOGNIZED       |                 | UNRECOGNIZED   |
|--------------------------|---------------------|--------------------|-----------------|----------------|
|                          | BENEFIT             | PLAN               | PRIORSERVIC     | NET GAIN       |
|                          | <u>OBLIGATION</u>   | <u>ASSETS</u>      | <u>COST</u>     | <u>OR LOSS</u> |
| Balance Dec, 31, 1999    | 212,775cr           | 131,000dr          | 43,000dr        |                |
| (m) Service Cost         | 15,000cr            |                    |                 |                |
| (n) Interest Cost        | 21,277.5cr          |                    |                 |                |
| (o) Actual Return        |                     | 12,000dr           |                 |                |
| (p) Unexpected Loss      |                     |                    |                 | 1100dr         |
| (q) Amortization of PSC  |                     |                    | 21,500cr        |                |
| (r) Contributions        |                     | 25,000dr           |                 |                |
| (s) Benefits             | 12,500dr            | 12,500cr           |                 |                |
| (t) Liability increase   | 13,447.5cr          |                    |                 | 13,447.5dr     |
| Balance account for 2000 | <u>\$ 250,000dr</u> | <u>\$155,500cr</u> | <u>21,500dr</u> | <u>14,500d</u> |

Entry (p), in 2000 the expected return of 13,100 (the expected rate of return of 10% times the beginning of the year plan assets balance of 131,000) is higher than the actual return of \$12,000. To smooth pension expense, the unexpected loss of 1,100 (\$13,100- \$12,000) is deferred by debiting the unrecognized net gain or loss account and crediting pension expense.

Entry (t) records the change in PBO resulting from a change in actuarial assumptions. Actuary has computed the ending balance to be \$250,000. Memo record balance at December 31 is \$236,452.5(212,775 + 15,000 + 21,277.5- \$12,500) a difference of 13,447.5 is indicated.

The journal entry on December 31, 2000 for pension expense is as follows:

|                              |            |          |
|------------------------------|------------|----------|
|                              | 31,12,2000 |          |
| Pension Expense              | 44,667.5   |          |
| Cash                         |            | 25,000   |
| Prepaid/Accrued Pension Cost |            | 19,677.5 |

Pension reconciliation schedule – December 31,2000:

|                                       |                   |
|---------------------------------------|-------------------|
| Projected benefit obligation (credit) | \$(250,000)       |
| Plan assets at fair value (debt)      | 155,500           |
| Funded status                         | (94,500)          |
| Unrecognized PSC (debit)              | 21,500            |
| Unrecognized net loss (debit)         | <u>14,547.5</u>   |
| Prepaid/Accrued pension cost (credit) | <u>(58,542.5)</u> |

## 2.7 MINIMUM LIABILITY<sup>73</sup>

Any difference between the amount of funded and the amount expected should appear on the balance sheet as a prepaid pension cost or liability. An additional minimum liability is also required to be recognized under SFAS 87 materially under-funded. This minimum liability results when the accumulated benefit obligation exceeds the fair value (not the possible calculated market related value used for determining plan assets net gain or loss) of plan assets and a liability in the amount of the difference is not already recorded as unfunded accrued pension cost. The FASB doesn't permit the recording of additional assets if the fair value of the plan assets exceeds the accumulated benefit obligation.

### 2.7.1 COMPUTATION OF MINIMUM LIABILITY

We assume that Intel Company amends its pension plan on Dec, 31,1998, giving retroactive benefits to its employees, as follows.

|                                 |              |
|---------------------------------|--------------|
| Projected benefit obligation    | \$10,000,000 |
| Accumulated benefit obligation  | \$7,500,000  |
| Plan assets at fair value       | \$5,000,000  |
| Market related assets value     | \$4,500,000  |
| Unrecognized prior service cost | \$2,000,000  |
| Accrued pension cost            | \$1,000,000  |

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<sup>73</sup> Kieso, op.cit., pp.1110-1112

The unfunded accumulated benefit is computed as follows:

|                                                             |                      |
|-------------------------------------------------------------|----------------------|
| Accumulated benefit obligation                              | \$(7,500,000)        |
| *Plan assets at fair value                                  | <u>5,000,000</u>     |
| Unfunded accumulated benefit obligation (minimum liability) | <b>\$(2,500,000)</b> |

\*The fair value of plan assets used, not that market related asset value.

Additional liability computation:

|                                                             |                  |
|-------------------------------------------------------------|------------------|
| Unfunded benefit obligation (minimum liability) (2,500,000) |                  |
| Accrued pension cost (balance at Dec, 31, 1998)             | <u>1,000,000</u> |
| Additional liability required                               | 1,500,000        |

If Intel Company had a prepaid pension cost of \$500,000 instead of an accrued pension cost, an additional liability will be as follows:

|                                                         |                    |
|---------------------------------------------------------|--------------------|
| Unfunded accrued benefit obligation (minimum liability) | 2,500,000)         |
| Prepaid pension cost                                    | <u>(500,000)</u>   |
| Additional liability                                    | <b>(3,000,000)</b> |

## 2.8 FINANCIAL STATEMENT PRESENTATION

There is a need to disclose sufficient information regarding a defined benefit plan so that investors and other users of financial statements will be able to evaluate the possible future cash consequences of the plan as well as its benefits in attracting competent employees. These disclosures should include information regarding the present value of the actuarially determined pension obligation and the current value of the pension assets. Separate disclosure of the obligation for vested benefits and for non-vested benefits would be appropriate, however, there shouldn't be an inference that only the vested benefits represent the liability of the firm.<sup>74</sup> FASB 87 started requiring companies to report pension liabilities on the balance sheet. Before that debt, pensions were another example Off-Balance Sheet financing. \* Companies receives the benefit of their employees' service but could avoid reporting pension

<sup>74</sup> Eldon S. Henderilgen, *Accounting Theory*, 1990, p.449.

\* Off-Balance Sheet Financing, is the acquisition of assets on services with debt that is not reported on the balance sheet.

liabilities on the balance sheet.<sup>75</sup> When its necessary to adjust the accounts to recognize a minimum liability, the debit should be to an intangible asset that is called intangible asset- deferred pension cost.<sup>76</sup>

The entry to record the liability and related intangible asset for Intel Company is:

|                                             |                                 |           |
|---------------------------------------------|---------------------------------|-----------|
| DR Intangible asset (deferred pension cost) | 1,500,000                       |           |
|                                             | CR Additional pension liability | 1,500,000 |

If result of the minimum liability calculation exceeds the un-amortized prior service cost, FASB requires the excess to be treated as other comprehensive income.<sup>77</sup>

### 2.8.1 CRITICISMS OF LIABILITY

Critics charge that the amount of the additional liability under statement 87 is speculative because of the many estimates that must be made. The FASB believes that the use of "best estimates" of relevant future events is supportable and consistent with current accounting practice.<sup>78</sup>

Other questions the recognition of an intangible asset. A FASB has little to say about it. A debit is required when the net liability is recorded and an intangible asset was selected to meet that need. The usual argument is that the existence of pension plan boosts employee morale and there for contributes to productivity, thus justifying the recording an intangible asset.<sup>79</sup>

<sup>75</sup> Harrison Horngren, *Accounting*, USA, 1993, p.737.

<sup>76</sup> Kieso, op.cit., pp.1112-1113.

<sup>77</sup> Ibid, pp.1112-1113.

<sup>78</sup> FASB Staement 87, Paragraph, 146; Cited in Vernon Kam, *Accounting Theory*, 1990,p.332.

## 2.8.2. ARGUMENTS AGAINST DEFERRED RECOGNITION OF PENSION LIABILITIES

The arguments for and against recognition generally apply equally to the obligation resulting from plan amendments and to that resulting from other factors such as experience gains and losses. There are some arguments against deferred recognition:<sup>80</sup>

1. The company's obligation is only to make contributions
2. It is not a legal liability
3. It will never have to be paid
4. The amount of the obligation cant be measured
5. The increased benefits are granted in exchange for future service
6. Liability recognition would have economic consequences.

The minimum liability approach to the Intel Company pension plan for all three years 1995,1996,1997 as follows:

Values are assumed:

| INTEL COMPANY                    |                |                |                  |
|----------------------------------|----------------|----------------|------------------|
| DECEMBER 31                      |                |                |                  |
|                                  | 1995           | 1996           | 1997             |
| Accumulated benefit obligation   | \$( 90,000)    | \$(174,000)    | \$(250,600)      |
| Plan assets at fair value        | <u>121,000</u> | <u>144,000</u> | <u>169,600</u>   |
| Unfunded accumulated Ben. Obl.   | \$-0-          | \$(30,000)     | ( 81,000)        |
| (Minimum liability)              |                |                |                  |
| Accrued pension cost             | <u>11,00</u>   | <u>25,500</u>  | <u>33,000</u>    |
| Additional liability             | \$-0-          | (\$4,500)      | (\$48,000)       |
| Unrecognized prior service cost* |                | <u>62,000</u>  | <u>42,000</u>    |
| Contra equity charge**           |                | <u>\$-0-</u>   | <u>\$(6,000)</u> |

\*Maximum intangible asset recognizable

<sup>79</sup> Kam, op.cit., p.332.

<sup>80</sup> Stephen A. Zeff, Dharan, Balag G, *Reading and Notes On Financial Issues and Controversies*, 1990, pp.531-534.

\*Difference charged to excess of additional pension liability over unrecognized prior service cost

In 1996, minimum liability amount exceeds the accrued pension cost, so an additional liability of \$4,500 (\$30,000- \$4,500) is recorded as follows:

| 31,12,1996                                   |       |
|----------------------------------------------|-------|
| DR Intangible assets (deferred pension cost) | 4,500 |
| CR Additional pension liability              | 4,500 |

In 1997, an additional liability of 44,500 already exist there fore it must be subtracted from \$48,000, (48,000- \$4,500) \$43,500 is credited, also additional exceed the prior service cost by \$ 6,000, the excess is debited contra equity account or other comprehensive income. The reminder \$37,500 is debited to the intangible asset- deferred pension cost

| 31,12,1997                             |        |
|----------------------------------------|--------|
| Intangible asset-deferred pension cost | 37,500 |
| Other comprehensive income             | 6,000  |
| Additional pension liability           | 43,500 |

As the additional liability changes, the combined debit balance of the intangible assets and contra equity (other comprehensive income accounts) changes by the same amount.

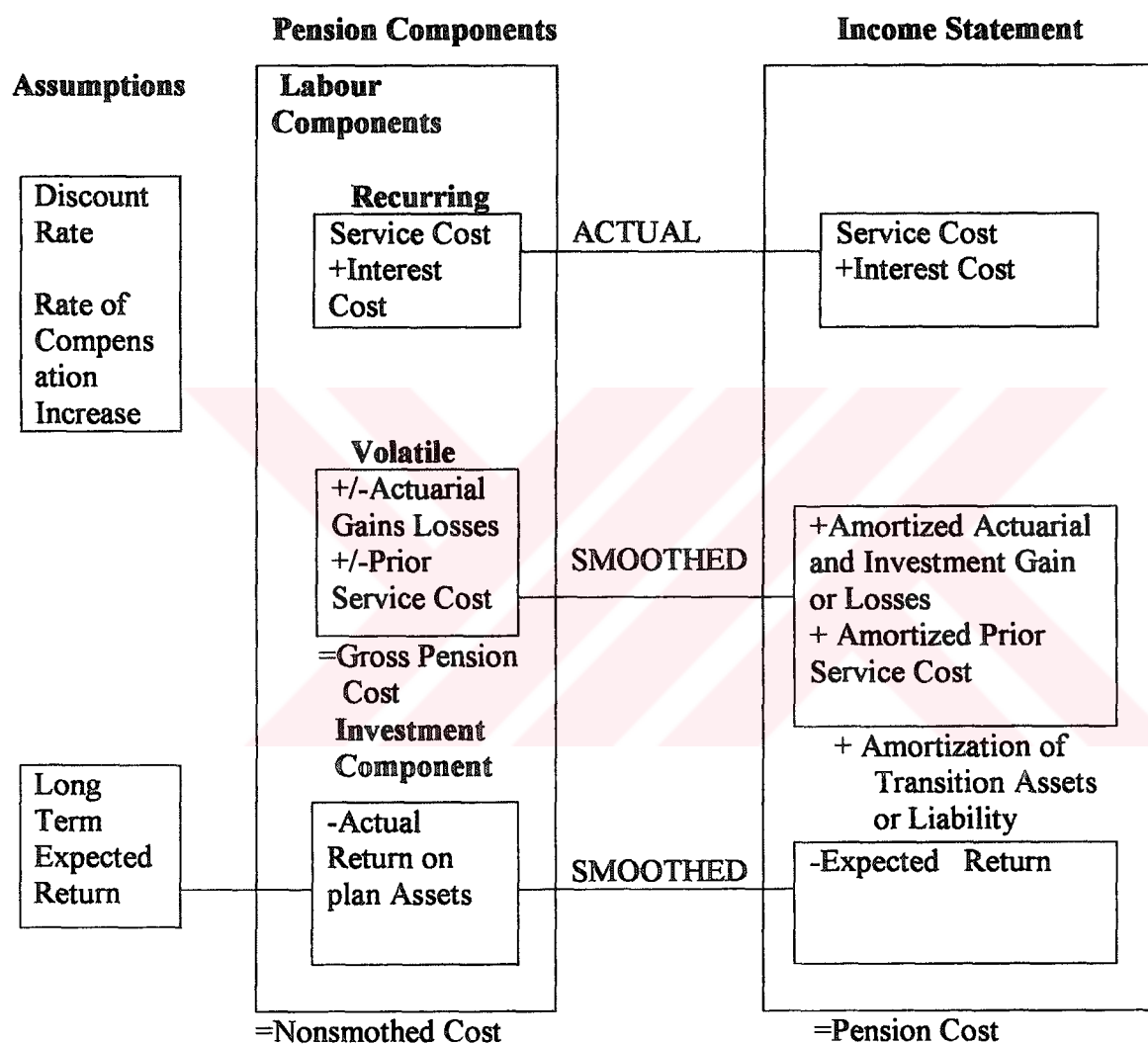
## 2.9 REPORTING PENSION PLANS IN FINANCIAL STATEMENTS

The financial accounting standards boards (FASB) recently issued statement of Financial Accounting Standards No. 132, “ employers’ Disclosure about pensions and other post-retirement benefits” (FASB statement No.132).<sup>81</sup> While this statement

<sup>81</sup> Randall W. Luecke and Chet Andrzejewski, FASB 132: What Companies Must Disclose, *Journal of Accountancy*, September 1998, p.43.

doesn't change the measurement or recognition criteria related to these plans, it modifies and eliminates some of the disclosure requirements for benefit plans.

**FIGURE 2:2 RELATIONSHIP BETWEEN ACTUAL PENSION COMPONENTS AND INCOME STATEMENT PRESENTATION<sup>82</sup>**



<sup>82</sup> White, op.cit., p.604.

### 2.9.1 ILLUSTRATION OF PENSION NOTE DISCLOSURE<sup>83</sup>

1. Reconciliation showing how the projected benefit obligation and their fair value of the plan assets changed from the beginning to the end of the period is required. The FAS Board believes that explaining the changes in the projected benefit obligation and fair value of plan assets in the form of reconciliation provides a more complete disclosure and makes the financial statements more understandable.

2. The funded status of the plan (difference between the projected benefit obligation and fair value of the plan assets) and the amounts recognized and not recognized in the financial statements must be disclosed. The disclosure requirements are the same as in FASB Statement No. 87, except that all of the components affecting the financial statements must be disclosed. In addition, the accumulated benefit obligation doesn't have to be reported if it is less than the fair value of the plan assets. If the accumulated benefit obligation is greater than the fair value of the plan assets, it must be disclosed to inform readers how the minimum liability was computed. The vested benefit obligation no longer needs to be disclosed.

3. A disclosure of the rates used in measuring the benefits amounts (discount rate, expected return on plan assets, rate of compensation) should be disclosed.

4. A schedule showing all the major components of pension expense should be reported. Information provided about the components of pension expense is useful in forecasting a company's net income.

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<sup>83</sup> Ibid, pp.43-49.

## Illustration of disclosure requirements:

Amounts Related to Pension Plan

| <b>Change in benefit obligation</b>                | <b><u>For the year 2000</u></b> |
|----------------------------------------------------|---------------------------------|
| Benefit obligation at beginning of the year        | \$1,266,000                     |
| Service cost                                       | 76,000                          |
| Interest cost                                      | 120,000                         |
| Amendments (prior service cost)                    | 114,000                         |
| Actuarial gain                                     | (25,000)                        |
| Benefits paid                                      | <u>(125,000)</u>                |
| Benefit obligation at the end of year              | <b>1,426,000</b>                |
| <b>Change in plan assets</b>                       |                                 |
| Fair value of plan assets at beginning of the year | 1,068,000                       |
| Actual return on plan assets                       | 29,000                          |
| Contributions                                      | 75,000                          |
| Benefits paid                                      | <u>(125,000)</u>                |
| Fair value of plan assets at and of year           | <b>1,047,000</b>                |
| Funded status                                      | (379,000)                       |
| Unrecognized net actuarial loss                    | 83,000                          |
| Unrecognized prior service cost                    | <u>260,000</u>                  |
| Prepaid (accrued) benefit cost                     | <b><u>(36,000)</u></b>          |

**Weighted-average assumptions as of December 31 (%)    For the year 2000**

|                                |       |
|--------------------------------|-------|
| Discount rate                  | 9.25  |
| Expected return on plan assets | 10.00 |
| Rate of compensation increase  | 5.00  |

| <b>Components of net periodic expense</b> | <b><u>For the year 2000</u></b> |
|-------------------------------------------|---------------------------------|
| Service cost                              | \$76,000                        |
| Interest cost                             | 120,000                         |
| Expected return on plan assets            | (107,000)                       |
| Amortization of prior service cost        | 20,000                          |
| Recognized net loss                       | <u>( 8,000)</u>                 |
| Net periodic pension expense              | \$ 101,000                      |

### 2.9.2 RECONCILIATION SCHEDULE

The format of reconciliation schedule is shown below:<sup>84</sup>

#### Pension Reconciliation Schedule:

Actuarial present value of benefit obligations:

|                                                              |                |
|--------------------------------------------------------------|----------------|
| Vested benefit obligation                                    | \$ <u>xxxx</u> |
| Accumulated benefit obligation                               | <u>\$xxxx</u>  |
| Projected benefit obligation (and of period)                 | \$(xxxx)       |
| Plan assets at fair value                                    | <u>xxx</u>     |
| Projected benefit obligation excess of plan assets           | ( xxx)         |
| Unrecognized prior service cost                              | xx             |
| Unrecognized net gain or loss                                | <u>xx</u>      |
| Prepaid/Accrued pension cost                                 | (xxx)          |
| Adjustments required recognizing minimum liability           | <u>(xx)</u>    |
| Prepaid accrued pension cost recognized in the balance sheet | <u>\$(xxx)</u> |

<sup>84</sup> Kieso, op.cit., p1117.

A comprehensive illustration for pension plan entry.

We assumed values.

Intel Company pension plan accounting is based on the following data:

|                                                                    |           |
|--------------------------------------------------------------------|-----------|
| Projected benefit obligation for January, 1,2000 is                | \$265,000 |
| Plan assets at fair value for January 1,2000 are                   | \$159,600 |
| Unrecognized prior service cost January, 1,2000 is                 | \$32,000  |
| Unrecognized net gain or loss for January, 1,2000 is               | \$29,940  |
| Prepaid/accrued cost for January, 1, 2000 is                       | \$43,460  |
| Additional liability for January, 1,2000 is                        | \$37,540  |
| Pension intangible for January, 1, 2000 is                         | \$32,000  |
| Contra equity charge for January, 1, 2000 is                       | \$5,540   |
| Service cost for 2000 is                                           | \$15,000  |
| Settlement rate is 10%, expected rate of return is                 | 10%       |
| Actual return on plan assets for 2000 is                           | \$25,000  |
| Amortization of unrecognized prior service cost in 2000 is         | \$19,000  |
| Annual contributions are                                           | \$25,000  |
| Benefits paid to retirees in 2000 are                              | \$20,000  |
| Vested benefit obligation is \$205,000 at the end of the 2000      |           |
| Accumulated benefit obligation is \$260,000 at the end of the 2000 |           |
| Average service life of all covered employees is 20 years          |           |

General Journal Entry

| Items                            | Annual<br>Pension<br>Expense | Cash            | Prepaid/<br>Accrued<br>Cost | Additional<br>Liability | Pension<br>Intangible | Contra<br>Equity<br>Change |
|----------------------------------|------------------------------|-----------------|-----------------------------|-------------------------|-----------------------|----------------------------|
| Bal.jan.1,2000                   |                              |                 | 43,460cr                    | 32,000dr                | 32,000dr              | 5,540dr                    |
| (a)Service Cost                  | 15,000dr                     |                 |                             |                         |                       |                            |
| (b)Int. Cost                     | 26,500dr                     |                 |                             |                         |                       |                            |
| ( c)Actual.Reterm                | 25,000cr                     |                 |                             |                         |                       |                            |
| (d)Unexpec. Gain                 | 9,040dr                      |                 |                             |                         |                       |                            |
| (e)Amortiz.PSC                   | 19,000dr                     |                 |                             |                         |                       |                            |
| (f)Contribution                  |                              | 25,000cr        |                             |                         |                       |                            |
| (g)Benefits                      |                              |                 |                             |                         |                       |                            |
| (h)Unrecog.loss.<br>Amortization | 172db                        |                 |                             |                         |                       |                            |
| (i) Min.Liab. Adj                |                              |                 |                             | 30,312dr                | 24,772cr              | 5.540cr                    |
| Jour.ent.2000                    | <u>44,712dr</u>              | <u>25,000cr</u> | <u>19,712cr</u>             |                         |                       |                            |
| Bal.dec.31,2000                  |                              |                 | <u>63,172cr</u>             | <u>7,228dr</u>          | <u>7,228dr</u>        | <u>-0-</u>                 |

| Memo Record                     |                       |                  |                     |                     |
|---------------------------------|-----------------------|------------------|---------------------|---------------------|
| Items                           | Benefit<br>Obligation | Plan<br>Assets   | Unrecognized<br>PSC | Net Gain or<br>Loss |
| Balance Jan 2000                | \$265,000cr           | \$159,600dr      | \$32,000dr          | \$29,940dr          |
| (a) Service cost                | 15,000cr              |                  |                     |                     |
| (b) Interest cost               | 26,500cr              |                  |                     |                     |
| (c) Actual return               |                       | 25,000dr         |                     |                     |
| (d) Unexpected<br>Gain          |                       |                  |                     | 9,040cr             |
| (e) Amortization<br>of PSC      |                       |                  | 19,000cr            |                     |
| (f) Contributions               |                       | 25,000dr         |                     |                     |
| (g) Benefits                    | 20,000dr              | 20,000cr         |                     |                     |
| (h) Unrecogniz.<br>Loss Amortiz |                       |                  |                     | 172cr               |
| (I) Minimum<br>Liab. Adjust.    |                       |                  |                     |                     |
| Journal Entry for<br>2000       |                       |                  |                     |                     |
| Balance Dec. 31<br>2000         | <u>286,500cr</u>      | <u>189,600dr</u> | <u>13,000dr</u>     | <u>20,728dr</u>     |

In 2000 the actual return of \$25,000 exceeds the expected return of \$15,960 ( $159,600 \times 90\%$ ), resulting in unexpected gain of \$9,040, entry d. Entry (h) Intel company unrecognized net loss account 29,940, the corridor approach must be applied. The corridor is \$26,500 ( $265,000 \times 10\%$ ). The excess of unrecognized net loss from corridor is \$3,440 ( $29,940 - \$26,500$ ). Using the average remaining service life method, the amortization in 2000 is \$172 ( $3,440:20$ ).

#### Intel company

#### 2000 corridor test

|                                                                    |                |
|--------------------------------------------------------------------|----------------|
| Unrecognized net (gain) or loss at beginning of the year           | \$29,940       |
| 10% of larger of PBO or market-related assets value of plan assets | <u>26,500</u>  |
| Amortizable amount                                                 | <u>\$3,440</u> |
| Average service life of all employee                               | 20 years       |
| 2000 amortization ( $3,440:20$ year)                               | <u>\$172</u>   |

The journal entry record pension expense for 2000 is as follows:

|                              | 31,12,2000 |
|------------------------------|------------|
| Pension Expense              | 44,712     |
| Cash                         | 25,000     |
| Prepaid/Accrued Pension Cost | 19,772     |

The minimum liability, additional liability, and the amount reported as contra equity at the end of 2000 are computed as follows:

|                                                              | <u>December 31,2000</u> |
|--------------------------------------------------------------|-------------------------|
| Accumulated benefit obligation (ABO)                         | \$( 260,000)            |
| Plan assets at fair value                                    | <u>189,600</u>          |
| Unfunded accumulated benefit obligation ( minimum liability) | (70,400)                |
| Accrued pension cost                                         | <u>63,172</u>           |
| Additional liability                                         | ( 7,228)                |
| Unrecognized prior service cost                              | <u>13,000</u>           |
| Contra equity change                                         | <u>-0-</u>              |

The entry to adjust the minimum liability at December 31,2000 is as follow:

|                                                    |        |
|----------------------------------------------------|--------|
| Additional Liability                               | 30,312 |
| Intangible Assets-Deferred Pension Cost            | 24,772 |
| Excess of Additional Pension Liability             | 5,540  |
| Over unrecognized PSC (other comprehensive income) |        |

### 2.7.3 INTEL COMPANY BALANCE SHEET

INTEL COMPANY  
BALANCE SHEET  
AS of DECEMBER 31,2000

| <u>Assets</u>                                                                                                                                                                                       | <u>Liabilities</u>           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Intangible Assets                                                                                                                                                                                   | Long Term Liabilities        |
| Deferred Pension Cost \$7,228                                                                                                                                                                       | Accrued Pension Cost\$70,400 |
| The prepaid/accrued pension cost balance of \$63,172 and additional liability balance \$7,228 on the work sheet are combined and reported as one pension liability of \$70,400 in the balance sheet |                              |

### 2.7.4 INTEL COMPANY INCOME STATEMENT

INTEL COMPANY  
INCOME STATEMENT  
For the year ended December 31,2000

|                           |          |
|---------------------------|----------|
| <u>Operating expenses</u> |          |
| Pension expense           | \$44,712 |

\* Pension expense is generally reported as "Employee Benefit"

## **PART 3**

### **TURKISH SOCIAL SECURITY SYSTEM AND A PROPOSALS TO RESTRUCTURE OF SOCIAL SECURITY SYSTEM**

In contemporary societies, social security aims to protect individuals against the various socio-economic forces that are arising as a result of production technology. The social security institutions attempt to ensure the human individual's security throughout his life span. As stated in Article 60 of the Constitution: " Every individual is entitled to social security. The state take the necessary measures to create this confidence and organize the organization."

#### **3.1 TURKISH SOCIAL SECURITY INSTITUTIONS**

The Turkish social security system basis on three different major organizations, namely, The Government Employee Retirement Fund (Emekli Sandığı), Social Security Administrations (SSK) and Self-Employees Security administration (Bağ-Kur).

Apart from the social security institutions, there are other pension funds established by law for banks, insurance companies, chambers of commerce and industry, and commodity exchanges. We will stress on only three main institutions.

##### **3.1.1 GOVERNMENT EMPLOYEES RETIREMENT FUND (EMEKLİ SANDIĞI)**

Employees Retirement Fund was established by Law No. 5434 extending coverage over civil servants in government institutions attached to the general and annexed budgets and public employees covered by certain other retirement funds which were previously under special laws. The Government Employees Retirement Fund started operations on January 1, 1950. Fund has two main finance sources:

1. Statutory revenues (Employee contribution, initial contribution, government contribution, provision for initial contribution, and other receipts on capital)
2. Investment receipts (Interest on bonds, dividends, interest on loans, interest on bank deposits, and income from participants)

There are some restrictions on funds' investment choices:<sup>85</sup>

- a. Fund, at most 40% of its assets can invest in real estate
- b. Private companies' shares can be taken with permission of ministry.
- c. At most 40% of assets can be invest in institutions which are either public or more than 50% of their capitals must be belong to public institutions.

Differences between revenues and expenditures are being investing in varies assets which are can be seen in Table3.1

**TABLE 3.1 GOVERNMENT EMPLOYEES RETIREMENT FUND INVESTMENTS (MILLION TURKISH LIRAS)**

| Years | Deposits  | PublicSec | Shares | Real estate | Other     | Total     |
|-------|-----------|-----------|--------|-------------|-----------|-----------|
| 1990  | 775,234   | 2,950     | 16,389 | 188,502     | 278,317   | 1,261.392 |
| 1991  | 1,052.307 | 2,200     | 21,871 | 292,049     | 406,272   | 1,744.699 |
| 1992  | 1,346.003 | 1,500     | 46,487 | 379,747     | 3,882.436 | 5,656.164 |

Source: DPT, Sosyal Güvenlik Özel İhtisas Komisyonu, Finansman Alt Komisyonu Raporu (Yayımlanmamış); Cited in Elif Buzlupinar, *Emeklilik Fonlari, Sermaye Piyasasına Kaynak Aktarımı, Türkiye Üzerine Değerlendirmeler*, SPK, Yayın No.47, 1996, p.80

When we look at the retirement funds' revenue an expenditures table 2.2, there are no government transfers to fund tile 1992 since that year, retirement fund have been taken financial aid from Under-secretaries of Treasury. In the first years transfers was very low, but year by year increased. As it is seen in Table 3.2 figures from 1995 to 1996 transfer values are extremely increased from 4.819.000.000.000 TL to 39.479.000.000.000 TL (at nearly 719%). Security revenues among the retirement funds revenues are increasing year by year but very low in terms of total revenue.

<sup>85</sup> Oral Erdoğan and Levent Özer, *Sermaye Piyasasında Kurumsal yatırımlar*, IMKB Yayınları, İstanbul, 1998, pp.19-20.

Monthly benefits paid to retired persons and widows, widowers are the largest portions of funds' expenditures, nearly 71% of total expenses.

**TABLE 3.2 GOVERNMENT EMPLOYEES RETIREMENT FUND  
REVENUES AND EXPENDITURES (MILLION TURKISH LIRAS)**

| <b>REVENUES</b>                           | <b>1993</b> | <b>1994</b> | <b>1995</b> | <b>1996</b> |
|-------------------------------------------|-------------|-------------|-------------|-------------|
| <b>Statutory revenues</b>                 | 27.052.091  | 46.808.859  | 100.594.101 | 215.412.861 |
| <b>Financial aids</b>                     | 3.953       | 6.055       | 4.819       | 39.479      |
| <b>Investment Receipts</b>                |             |             |             |             |
| Interest on bonds                         | -           | 2.679       | 99.496      | 48.360      |
| Dividends                                 | 53.161      | 37.732      | 711.437     | 2.082.190   |
| Interest on deposits                      | 73.044      | 51.881      | 16.918      | 3.667       |
| Interest on loans                         | 195.418     | 505.151     | 926.707     | 1.885.071   |
| Income from participants                  | 123.223     | 439.139     | 1.193.822   | 361.506     |
| Other                                     |             |             |             |             |
| <b>EXPENDITURES</b>                       |             |             |             |             |
| <b>Statutory Expenditures</b>             |             |             |             |             |
| Monthly benefits paid to retired person   | 17.808.467  | 29.023.107  | 60.590.388  | 155.793.446 |
| Monthly benefits paid to widows, widowers | 6.348.490   | 10.259.876  | 21.448.708  | 45.155.870  |
| Lump-sum payments                         | 12.736      | 30.663      | 46.054      | 157.089     |
| Medical care                              | 3.195.642   | 7.521.613   | 17.858.065  | 34.625.900  |
| Other expenditure s                       | 15.654      | 35.196      | 46.494      | 125.876     |
| <b>Investment expenditure</b>             | 2.555.119   | 4.717.695   | 3.176.433   | 3.597.092   |

Source: Government Employees Retirement Fund, August 1997.

The Government Employees Retirement Fund, funded with the aim of providing social benefits within a retirement system for government employees, entitles the contributors to the following benefits in accordance with law No. 5434:

Retirement pension, job disability pension, disability pension, survivors' pension, retirement bonus, death grant, marriage bonus, lump-sum payment, repayment of contribution,

**RETIREMENT PENSION:** pension payable to a person who has completed a specific period of service.

**JOB DISABILITY PENSION:** Pension payable to persons who have suffered a disability arising from when they are on duty according to the degree of disability.

**DISABILITY PENSION:** Pension payable to the persons who have to leave their job due to a mental or physical disability and who have completed at least 10 years of service.

**RETIREMENT BONUS:** Grant payable to person who retires because of old age, disability, or job disability and has completed a specified period of service. This grant is also paid to survivors of persons who die having completed a specified period of service.

**DEATHS GRANT:** Grant payable to survivors of a pensioner or to any person nominated by the pensioner before his death.

**MARRIAGE BONUS:** Grant payable to a widow or a female orphan whose pension is discontinued because of marriage.

**LUMP-SUM PAYMENT:** Payment made to a person or to the survivors of person who no longer works because of death, disability, old age, incorrect behaviour, etc. and whose length of service does not fulfil the requirements for pension.

**REPAYMENT OF CONTRIBUTION:** Repayment of contributions collected in the fund to the person who leaves a job because of resignation, penalty, lay off, or other causes and whose period of service is between 5-10 years.

### **3.1.2 SOCIAL SECURITY INSTITUTIONS (SSK)**

The social insurance Law No. 506, which is presently in effect, was put into force on March 1, 1965. The most important aspect of the Social Insurance Law No. 506, which distinguishes it from previous social insurance laws, is the extension of its coverage. The law entitles all persons who are whereas Social Insurance Laws No. 3008, 5953 and 6379 recognized this right only for the persons defined these laws.

The following persons exulted from the coverage of the law:

- Agricultural workers
- Self-employed
- Persons contributing to one of the pension funds established by law.

The social insurance law entitles contributors to the following benefits under special requirements: Work injury and occupational disease insurance, sickness insurance, maternity insurance, disability insurance, old age insurance, death insurance.

**WORK INJURY AND OCCUPATIONAL DISEASES INSURANCE:** The following benefits are provided to insured persons who suffer physical or mental disability as a result of work injury or occupational diseases:

- Medical cares,
- Permanent disability pension,
- Artificial limbs,
- Medical care and treatment in another place, within or outside the country when necessary,
- Payment of funeral expenses,

**SICKNESS INSURANCE:** Entitles the insured person who suffers illness, apart from work injury or occupational diseases, to the almost same benefits as in work injury insurance.

**MATERNITY INSURANCE:** Entitles the insured woman or the wife's of an insured person to the following benefits in cases of maternity:

- Medical and maternal care,
- Nursing grants,
- Disability insurance,
- Old age insurance,
- Death insurance,

Number of employees covered by the social insurance institution increasing year by year, but this number not enough in terms of total employees.

**TABLE 3.3 NUMBER OF EMPLOYEES COVERED BY THE SOCIAL INSURANCE INSTITUTION**

| Employees insured ( 1) | 1992      | 1993      | 1994      | 1995      | 1996      |
|------------------------|-----------|-----------|-----------|-----------|-----------|
| Male                   | 3.409.665 | 3.570.627 | 3.784.494 | 4.049.176 | 4.154.000 |
| Female                 | 387.037   | 405.575   | 418.122   | 361.568   | 470.320   |

Source: Statistical Yearbook of Turkey 1997

(1) Data is from September 1

The main sources of institution are premiums from workers and employees. Institution receipts, expenditures and investments are can be seen in Table 3.4. Between 1992-1996, the large portions of institution investments are bank deposits, bonds and real estate. Premiums are main receipts, but not enough when we compare to its expenses. Institution expenses increasing more rapidly than its revenues. (Table 3.4) Its deficits are the largest among the other institutions. The SSK has reached the bankruptcy point for number of reasons, we will stress on these reasons later, but now we can say that the most important cause of this situation is political interventions.

Although a premium rates very high when we compare the OECD countries average rates, system has been in deficit. Workers contribute 14 percent while employers pay 19.5-27 percent that totals 34-41 percent. One more reasons of this are revenues, which basis of premiums, are very low. "This situation increases labor costs, reduces employment or encourages employment of unregistered workers so, there is a dilemma either more unemployment or lower benefits for the existing or future Pensioners."<sup>86</sup>

<sup>86</sup> Mahir Fusunoğlu, "Prospects For Private Pension System and Their Relation to The Stock Market in Turkey", *The ISE Review*, Volume: 2 no: 7-8 July-December 1998, P.95

**TABLE 3.4 SOCIAL INSURANCE INSTITUTION RECEIPTS, EXPENDITURES AND INVESTMENTS (MILLION TURKISH LIRAS)**

| <b>Years</b>        | <b>1992</b> | <b>1993</b> | <b>1994</b> | <b>1995</b> | <b>1996</b> |
|---------------------|-------------|-------------|-------------|-------------|-------------|
| <b>Receipts</b>     |             |             |             |             |             |
| Premiums            | 31.658.048  | 52.868.294  | 75.372.239  | 102.930.462 | 297.869.820 |
| Interest            | 636.679     | 886.661     | 14.976.550  | 2.556.129   | 9.139.192   |
| Income from sec.    | 66.866      | 36.584      | 2.069.917   | 5.352.541   | 7.457.000   |
| Rent                | 243.882     | 336.282     | 503.289     | 1.175.110   | 2.183.420   |
| Miscellaneous       | 2.738.441   | 5.251.114   | 32.788.915  | 167.207.204 | 175.444.775 |
| <b>Expenditures</b> |             |             |             |             |             |
| Administration      | 931.841     | 1.547.701   | 2.950.476   | 5.029.571   | 9.645.254   |
| Direct benefit      | 9.023.298   | 16.357.824  | 32.575.560  | 69.740.150  | 92.960.780  |
| <b>Payments</b>     |             |             |             |             |             |
| Reserves            | 18.756.080  | 30.955.259  | 68.789.330  | 167.838.453 | 315.310.260 |
| Other               | 6.572.696   | 10.518.153  | 22.376.792  | 37.333.667  | 75.483.250  |
| <b>Investments</b>  |             |             |             |             |             |
| Bank deposits       | 4.053.207   | 5.666.321   | 9.854.748   | 18.552.331  | 48.180.834  |
| Bonds               | 50.365      | 40.160      | 5.227.663   | 5.211.512   | 8.438.730   |
| Real estate         | 741.764     | 1.230.688   | 17.246.812  | 35.446.534  | 62.226.347  |
| Credits and         | 24.968      | 15.102      | 7.846       | 6.079       | 5.539       |
| <b>Provisions</b>   |             |             |             |             |             |
| Other               | 1.289.164   | 1.975.986   | 3.742.181   | 12.082.525  | 23.799.012  |

Source: Statistical Yearbook of Turkey 1997

### **3.1.3 SELF-EMPLOYERS SECURITY ADMINISTRATION (BAĞ-KUR)**

The scheme covers the self- employed outside the coverage of the Social Insurance Law such as craftsmen, artisans and small businessmen, technical and professional people who are registered to a chamber or profession association and shareholders of companies other than co-operatives and joint stock companies.

The enforcement of the “ Social Insurance Law Concerning the Self-employed in Agriculture” of October 20, 1983 published in the Official Gazette No. 18179 has been given to Bağ-Kur. Bağ-Kur entitles the contributors to the following benefits:

**DISABILITY INSURANCE:** Entitles an insured person who has lost at least two-thirds of his working capacity to a disability pension.

**OLD AGE INSURANCE:** Entitles the contributors benefits in old age that has completed a specified period of service. An insured person of pensionable age who leaves his job but is not entitled to a pension will have the right to receive, on a claim a lump-sum payment corresponding to the total amount of contributions paid by him.

**DEATH INSURANCE:** Entitles the survivors of an insured to the following benefits: Pension payable to the survivors of an insured person whom having completed a specified period of service or retired a disabled pensioner.

**HEALTH INSURANCE:** those under actual insurance coverage and their wives or husbands, dependent children and parents; those receiving old age and disability pensions and their wives or husbands, dependent children and parents; and survivors receiving pensions are entitled to take advantage of health insurance benefits.

In 1995, its revenues can cover 45 percent of its expenses, but 1996 revenues surplus the its expenses nearly 5.5 trillion Turkish liras as seen in Table 3.5.

**TABLE 3.5 SELF-EMPLOYERS SECURITY ADMINISTRATION'S REVENUES AND EXPENSES BETWEEN 1990-1997 (TURKISH LIRAS)**

| Years | Revenues            | Expenses            | Differences         |
|-------|---------------------|---------------------|---------------------|
| 1990  | 1.034.671.879.996   | 1.194.496.773.102   | - 159.824.893.106   |
| 1991  | 1.639.178.394.099   | 2.081.239.169.288   | -442.060.775.189    |
| 1992  | 4.334.494.464.809   | 4.601.852.093.165   | -267.357.628.356    |
| 1993  | 7.924.531.533.796   | 8.616.508.711.160   | -691.977.177.364    |
| 1994  | 14.356.237.431.100  | 19.894.527.585.682  | -5.538.290.154.582  |
| 1995  | 28.054.763.463.097  | 40.788.164.728.946  | -12.733.401.265.849 |
| 1996  | 113.699.506.909.406 | 108.124.822.763.858 | 5.574.684.145.5     |
| 1997  | 252.766.562.464.386 | 307.274.140.253.165 | 5 4.507.577.788.779 |

Source: Bağ-Kur, 1997

### 3.2 HOW TURKISH SOCIAL SECURITY SYSTEM COMPARE WITH THOSE OF OECD COUNTRIES

Because of increasing life expectancy and declining fertility rate, all of the major industrialized countries will face population aging over next thirty years. The elderly, who are more than 60 years, will make up nearly 20 percent of the population in each of the Organization for Economic Co-operation and Development (OECD) by the 2030.<sup>87</sup> Turkey within that group will have the smallest proportion of elderly individuals, because when we look at the Table 3.6 Turkey has low dependency ratios.

**TABLE: 3.6 RETIREMENT AGES, LIFE EXPECTANCY AND DEPENDENCY RATIOS**

|                  | Retirement Age |     | Life Expectancy |     | Dependency Ratios |
|------------------|----------------|-----|-----------------|-----|-------------------|
|                  | Women          | Men | Women           | Men |                   |
| Turkey(1)        | 38             | 43  | 71              | 66  | 7.1               |
| OECD Average     | 63             | 65  | 80              | 74  | 19.7              |
| Germany          | 65             | 65  | 79              | 73  | 20.3              |
| Austria          | 60             | 65  | 79              | 73  | 20.2              |
| Belgium          | 60             | 65  | 80              | 73  | 20.7              |
| Denmark          | 67             | 67  | 78              | 73  | 20.2              |
| Finland          | 65             | 65  | 80              | 72  | 18.4              |
| France           | 60             | 60  | 81              | 73  | 18.9              |
| Netherlands      | 65             | 65  | 81              | 75  | 17.8              |
| UK               | 60             | 65  | 79              | 74  | 20.8              |
| Ireland          | 65             | 65  | 78              | 73  | 15.2              |
| Low Income Group | 57             | 59  | 58              | 55  | 6.7               |

Source: World Bank 1994

(1) Before reform in 1999, if new reform proposals encounter those retirement ages will change in 58 and 60.

The level of public spends various across the OECD countries, Table 3.7. The end of 1970's public pension spending was between 7 percent and 23 percent. Today, public pension spends are between 25 percent and 35 percent of their GDP such as Denmark, Germany, Netherlands and Finland spent more than 30 percent of their

<sup>87</sup> [WWW.ssa.gov/Statistics/ff97/ff97toc.html](http://WWW.ssa.gov/Statistics/ff97/ff97toc.html).

GDP on public pension. In the emerging countries, pension spending between 3 to 15 percent except some countries.

In Turkey, pension spending very low in terms of its GDP and OECD countries' average rate but when we compare with low and medium income groups' countries not so bat, except Chile and Brazil.

**TABLE: 3.7 PENSION SPENDING AS A PERCENT OF GDP**

| <u>OECD COUNTRIES</u> | <u>1994</u> | <u>LOW INCOME COUNTRIES</u> | <u>1994</u> |
|-----------------------|-------------|-----------------------------|-------------|
| Belgium               | 27.0        | <b>Turkey (1)</b>           | 5.1         |
| Denmark               | 33.7        | Argentina                   | 3.7         |
| Germany               | 30.7        | Brazil                      | 7.5         |
| France                | 30.5        | Bolivia                     | 2.1         |
| Ireland               | 21.1        | Cameroon                    | 1.3         |
| Italy                 | 25.3        | Chile                       | 6.5         |
| Netherlands           | 32.3        | Malaria                     | 1.5         |
| Austria               | 30.2        |                             |             |
| Finland               | 34.8        |                             |             |
| UK                    | 28.1        |                             |             |

Source: World Bank 1994, Türk-İş Yılığ 1997

(1) Data from 1995

According to Table 3.8, in OECD countries public contribution in social security funds are various between 15 percent to 75 percent. In Turkey, there is no government contribution in pension funds. We can say that social security system is being financed from employers and employees.<sup>88</sup>

<sup>88</sup> Ayşe Peker, *Sosyal Güvenlik Sisteminin Yeniden Yapılandırılması Tartışmaları ve Çözüm Önerileri*, TCMB, Tartışma Tebliği No: 9703, 1997, p.6

**TABLE 3.8 SOCIAL SECURITY SYSTEMS' REVENUES RELATED OF THEIR SOURCES (AS A PERCENTAGE)**

| <b>Tax Basis Countries</b>     | <b>Government Contribution</b> | <b>Employers Premiums</b> | <b>Workers Premiums</b> | <b>Other Premiums</b> |
|--------------------------------|--------------------------------|---------------------------|-------------------------|-----------------------|
|                                | <u>1994</u>                    | <u>1994</u>               | <u>1994</u>             | <u>1994</u>           |
| Denmark                        | 75.6                           | 9.2                       | 10.1                    | -                     |
| Ireland                        | 61.0                           | 23.0                      | 13.7                    | 1.5                   |
| UK (1)                         | 43.9                           | 26.1                      | 14.5                    | 0.7                   |
| Luxembourg                     | 42.5                           | 29.4                      | 18.5                    | 2.6                   |
| <b>Premium Basis Countries</b> |                                |                           |                         |                       |
| France                         | 21.5                           | 49.0                      | 22.1                    | 4.4                   |
| Greek                          | 19.1                           | 45.7                      | 26.6                    | -                     |
| <b>Mixed Bases Countries</b>   |                                |                           |                         |                       |
| Belgium                        | 20.1                           | 43.1                      | 24.1                    | 1.4                   |
| Netherlands                    | 15.8                           | 20.1                      | 37.1                    | 1.9                   |
| Germany                        | 26.6                           | 38.3                      | 22.5                    | 1.0                   |
| Spain                          | 29.6                           | 50.2                      | 9.2                     | 4.5                   |
| Italy                          | 34.9                           | 46.5                      | 10.3                    | 5.9                   |
| Portugal                       | 37.4                           | 34.4                      | 18.7                    | 2.1                   |
| Turkey (2)                     | -                              | 58.2                      | 41.8                    | -                     |

Source: Türk-İş Yıllığı 1997

(1) Data from 1993

(2) Data from 1993

### 3.3 MAIN PROBLEMS OF TURKISH SOCIAL SECURITY SYSTEM

Problems in Turkish social security system have same character with other emerging countries; financially unsustainable. The ILO has shown detail that the current system in Turkey is financially unsustainable. The system provides benefits to a few of elderly. Only 31% of the individuals over 65 years of age were receiving social insurance benefits in 1994. The system also provides low benefits, 35-35% of national average earning, especially in relation to high contribution rates, 21% in SSK and higher for Emekli Sandığı.

Retirement ages are low in Turkey relative to other countries in the world, developing countries as well as OECD countries. Also Turkey spends about half as much as the Japanese on pension, but in Japan 94 percent of labor force is covered under the pension system.

Government contributions to social security system in Turkey not periodically. Government contributions to those institutions started in 1992 and this contribution increased day by day since that time. As it's seen in Table 3.9, financial contribution from consolidated budget to social security funds increasing year by year. Between 1990-1993 average contribution rate up to 2% of Turkey's GDP. The main reason started after 1994, contribution rates increased nearly 8% of GDP.<sup>89</sup>

**TABLE: 3.9 PROPORTION OF SOCIAL SECURITY TRANSFERS  
RELATION TO CONSOLIDATED BUDGET AND GDP**

|                        | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|------------------------|------|------|------|------|------|------|------|------|
| In Consolidated Budget | 1.8  | 1.2  | 1.8  | 2.8  | 4.4  | 6.3  | 8.7  | 8.5  |
| In GDP                 | 0.3  | 0.3  | 0.4  | 0.7  | 1.0  | 1.4  | 2.3  | 2.1  |

Source: Türk-İş Yıllığı 1997

Note: Estimated in 1996, 1997

<sup>89</sup> Peker, Op.cit., P.22

### 3.3.1 REASONS FOR REFORMING A SYSTEM

The existing situation for public pension systems is not so good. There are many reasons why social security institutions are financially unsustainable.<sup>90</sup> Such as political interventions, active- passive ratio, mismanagement, high premiums, we will stress those problems for only SSK, because others are in almost same problems and it has the largest deficit among the other systems.

#### 3.3.1.1 POLITICAL INTERVENTIONS

“ Early retirement programs, super retirement, admittance of new members to the SSK without any provisions to actuarial calculations are the main political interventions to the SSK”.<sup>91</sup> Also social aid to retired persons without any premiums other reason, which make up 60% of retirees salaries. The average retirement ages are 63 for women and 65 for men in the OECD countries, but in Turkey 38 to 43. If recent reform proposals encounter these numbers will up 58 to 60.

Life expectancy is a good indicator for change in retirement ages. In Table 3.10 shows a life expectancy change between 1990-1995 for the different age groups over the 20 years. Life expectancy for the Turkish people is increasing year by year, while retirement ages is getting low.

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<sup>90</sup> Fisunoğlu, Mahir, “Prospects for Private Pension System and Their Relation to the Stock Market in Turkey”, *The ISE Review* vol.2, no.7-8, pp92-104

<sup>91</sup> Ibid, p.93.

**TABLE: 3.10 ESTIMATED LIFE EXPECTANCY FOR THE 1990-1995 PERIOD OF YEAR IN TURKEY**

| Ages | Women | Men   | Average |
|------|-------|-------|---------|
| 20+  | 54,12 | 50,35 | 52,19   |
| 30+  | 44,65 | 41,23 | 42,90   |
| 40+  | 35,32 | 32,09 | 33,69   |
| 45+  | 30,75 | 27,65 | 29,16   |
| 50+  | 26,32 | 23,43 | 24,84   |
| 55+  | 22,04 | 19,51 | 20,74   |
| 60+  | 17,94 | 15,90 | 16,89   |
| 65+  | 14,13 | 12,62 | 13,36   |

Source: Gelişmiş Ülkelerde ve Türkiye de Sosyal Güvenlik Sistemlerinin Yeniden Yapılandırılması, TİSK İnceleme Yatınları 18, Yayın No.160, 1995.

### 3.3.1.2 ACTIVE- PASSIVE RATIO

When we compare Turkey with developed countries, it has more young people. Problems within the industrialized countries because of the getting old are not exist in Turkey, but the active- passive ratio (ratio of working people who pays premium to retired people who get benefits) has decreasing over years. According to Table 3.11.

Last 16 years, while increasing in number of active members just 81 percent, passive members increased 272 percent.<sup>92</sup>

“ Another significant and alarming situation with the Turkish employment statistics is a misleading point: the labor participation ratio is declining in turkey. Students, retirees, housewives, disabled people are excluded from this ratio which was 50% in 1997, considered as one of the lower rates in the world, the same rate was 70 percent in the mid 1970s”.<sup>93</sup> This ratio may be gives misleading numbers, because of those reasons.

<sup>92</sup> Peker, op.cit.,p.27

<sup>93</sup> Fisunoğlu, op.cit., 95

**TABLE: 3.11 ACTIVE –PASSIVE INDICATORS OF SOCIAL SECURITY INSTITUTIONS**

| <u>Social Security Institutions</u>        | <u>1980</u> | <u>1990</u> | <u>1996</u> |
|--------------------------------------------|-------------|-------------|-------------|
| <b>Pension Fund ( Emekli Sandığı)</b>      |             |             |             |
| Number of members                          | 1.250.000   | 1.560.000   | 1.878.000   |
| Number of pensioners                       | 495.000     | 843.000     | 1.048.000   |
| Active members/passive members             | 2.5         | 1.8         | 1.8         |
| Dependency ratio                           | 3.7         | 4.5         | 4.6         |
| <b>Social Security Institution ( SSK)</b>  |             |             |             |
| Number of members                          | 2.204.000   | 3.446.000   | 4.624.000   |
| Number of pensioners                       | 567.000     | 1.596.000   | 2.539.000   |
| Active members/passive members             | 3.9         | 2.4         | 1.8         |
| Dependency ratio                           | 3.6         | 3.9         | 4.5         |
| <b>Self- Employers Security ( Bağ-Kur)</b> |             |             |             |
| Number of members                          | 1.100.000   | 1.967.000   | 1.854.000   |
| Number of pensioners                       | 138.000     | 596.000     | 874.000     |
| Active members/passive members             | 8.0         | 4.7         | 2.2         |
| Dependency ratio                           | 3.5         | 2.7         | 4.2         |
| <b>Total in General</b>                    |             |             |             |
| Dependency ratio                           | 3.8         | 2.7         | 1.8         |
| Active members/passive members             | 4.6         | 4.0         | 4.1         |

Source: Tüsiad, Türk Sosyal Güvenlik Sisteminin Yeniden Yapılandırılması, İstanbul, 1997 S. Canbaş and H. Doğukanlı, Finansal Pazarlar, Beta Basım 1997, for 1982 and 1983; Fisunoğlu, Mahir, Prospects for Private Pension System and Their Relation to the Stock Market in Turkey, The ISE Review vol.2, no.7-8, p.96

According to table 3.11 “ The numbers of pension fund members increased by 50 percent, while the number of pensioners increased 100 percent between 1980 and 1996. The numbers of SSK members and pensioners increased by 100 percent and 400 percent, respectively, while the number of pension fund members and pensioners rose by 50 percent and 500 percent, respectively. The total number of members have

increased from 4,434,000 in 1980 to 8,430,000 in 1996 and number of total pensioners rose from 1,214,000 in 1980 to 4,520,000 in 1996. The number of dependents, on the other hand, has reached 36,254,000 in 1996 from 15,483,000 in 1980”<sup>94</sup>.

### **3.3.1.3 MISMANAGEMENT**

Social security institutions have been in financial difficulties since 1992. Main cause of this situation is political interventions of government, because these institutions financially and administratively depend on government. Governments can use social security institutions' funds in low interest-paid government bonds and low -interest home credits. Also institutions have some difficulties with premiums, some state agencies and private firms don't pay their premiums regularly.

### **3.3.1.4 HIGH PREMIUMS**

Premium rates very high when we compare with OECD countries. Because, increase in premium rates is the easiest way of reducing deficits of social security institution as result of this implementation labor cost are increased. These situations encourage employment of unregistered workers. As if there is a dilemma; both more employment and lower premium or lest employment and higher premium rate.

According to audit report of SSK's supervisors, 25% to 30% of total labor force in inspected firms are uninsured<sup>95</sup>.

## **3.4 PROPOSALS FOR RESTRUCTURE OF SOCIAL SECURITY SYSTEM**

Today most of the formal systems that are being publicly managed pay Defined Benefits (formula based on the worker's earnings and years of service) and are being financed with payroll taxes on pay-as -you-go basis. These systems generate many problems:<sup>96</sup>

- High and rising payroll taxes that may increase unemployment
- Tax evasion and escape to the informal sector, where productivity is lower

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<sup>94</sup> Fisunoğlu, op.cit.,96

<sup>95</sup> Peker, op.cit., p.33

- Early retirement, which reduces the supply of experienced labor
- Misallocation of public resources as scarce tax revenues is used for pensions rather than for education, health, or infrastructure.
- Lost opportunity to increase long –term savings.
- Failure to redistribute to low-income groups.

During the past few years, many countries have been changed their old age Security systems such as Chile, which has succeed the most striking reform we will stress later. The experience of those countries shows that transition is possible, although structural change is always difficult.

As a result, existing systems have not protected the elderly. They are not sustainable in their present form. Both industrial and developing countries has problem with their social security system, but each problem not same.

### **3.4.1 HOW HAVE COUNTRIES REFORMED THEIR SOCIAL SECURITY SYSTEMS?**

“ The three major variations are the Latin American (individual account) model, the organization for economic Co-operation and Development (OECD) (Employer –Sponsored) model and the Swedish (notional defined contribution) model”.<sup>97</sup>

We will overview the most successful reformist country, Chile, but now shortly touch on those countries financing methods.

#### **3.4.1.1 FINANCING METHODS FOR TRANSITION**

Three basic methods were used:

- (1) Reducing the value of the pension debt and the financing the gap,
- (2) Finding alternative revenue sources to pay it off,
- (3) Using General borrowing and taxation.<sup>98</sup>

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<sup>96</sup> James, Estelle, “New Models for Old—Age Security: Experiments, Evidence and Unanswered Question”, *The World Bank Research Observer*, vol. 13, no.2(August 1998), p.274

<sup>97</sup> Ibid., p.277

<sup>98</sup> Estelle, op.cit., 283

#### **3.4.1.1.1 REDUCING THE VALUE OF DEBT AND FINANCING GAP**

There are several ways reduces the gap between taxes end expenditures such as downsizing benefits, rising retirement ages and penalties for early retirement with high taxes on lump-sum payments. Another way, government can keep some workers in the old system such as Argentina gave all workers a choice but made the new system attractive to young workers.

#### **3.4.1.1.2 FINDING ALTERNATIVE REVENUE SOURCES**

Privatization of state owned enterprises is the main source of the alternative revenues. Some of the privatization revenue can be used to pay of the pension dept. Bolivia and Peru is using privatization assets for pension reform.

#### **3.4.1.1.3 USING GENERAL BORROWING AND TAXATION**

In countries like Turkey, with large pension debt, the use of temporary debt finance is more suitable than tax. Because tax-financing method have some complication such as distortions in labor market, high payroll tax can lead to labor market distortions, (inefficiencies). Especially in turkey, labor market effects of high taxes is large, because escape to informal sector is easy both workers and employers.

### **3.5 A CASE STUDY IN PRIVATIZATION OF SOCIAL SECURITY SYSTEM: CHILE**

Chile began its social insurance system in 1924. In 1981 the Chilean government became the first in the world to replace its public system with a mandatory, privately funded, privately administered plan.

The new Chilean system, which went into effect on May 1, 1981, is a true “Defined Contribution” pension plan with mandatory contributions of 10 percent of earnings for program participants. When the new system began, participants in old system were given the option of switching to the new. After 1982 all employees were required to join the new system. As of 1992 approximately 90-95 percent of all persons under the old system had shifted.<sup>99</sup>

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<sup>99</sup> Karl Borden, “Dismantling the Pyramid: The Why and How of Privatizing Social Security” SSP no.1, 1995, p.7.

Contributions to the system are paid entirely by the employee, at the initiation of system all employers were required to increase all employees' wages by 18 percent.

Pension funds are invested in security portfolios administered by private organizations known as Administradoras de Fondos de Pensiones (administrators of pension funds, or AFPs). Twenty- one AFPs, which compete with each other on the basis of investment returns and service, are regulated; they must comply with government- mandated financial and investment requirements. Each worker chooses the AFP invest fund balances in a portfolio of securities and charges the portfolio an administrative fee for its services. Fees average 1 percent of total wages, down from more than 2 percent since the system was started.<sup>100</sup>

The government strictly regulates AFP assets allocation. Portfolios must consist of no less than percent investment in government obligations and " agency" issues of other government- guaranteed securities, leaving no more than 50 percent of the portfolio that may be invested in private sector securities. Only stocks on a government approved list may be purchased. No foreign securities have made this list.<sup>101</sup>

Administrative costs of the new system include both those of the AFPs that manage mandatory accumulation and those of the insurance companies that produce disability insurance, life insurance and annuities. Valdes-Prieto(1994) has examined administrative charge, estimated that the average administrative charge is \$89.10(US) which is 2.94 percent of average taxable earnings. This 2.94 percent is over 20 percent of the roughly 13.5 percent of earnings paid for the program.<sup>102</sup>

Minimum retirement ages are 65 for men and 60 for women. Participants may retire earlier if the pensions payable are at least 50 percent of their average earnings over the previous 10 years and 100 percent of the legal minimum monthly wages. Three alternative methods for determining the pension value are available at the participant's discretion.<sup>103</sup>

<sup>100</sup>Ibid., p.7; Cited in Rita Koselka, " A Better Way to Do It", *Forbes*, 1991, p.158 ( October )

<sup>101</sup> Ibid., p.8

<sup>102</sup> Peter A. Diamond, " Proposals to Restructure Social Security", *Journal of Economic Perspectives*, vol.10, no.3, p.76( summer 1996)

<sup>103</sup> Borden, op.cit., p.8

- The accumulated contributions may be used to purchase a life annuity from a private insurance company. Annuities must be government approved must include survivor benefits for dependents.
- The retiree may elect to receive a pension paid directly from the AFP. It is calculated using the life expectancy of the family group applied to the balance remaining in the account, which continues to earn income based on the AFP's performance.
- A partial withdrawal may be used to purchase a private annuity with remainder paid out directly from the AFP.

### 3.5.1 LESSONS FROM CHILE

Some conclusions can be drawn from the Chilean experiment. First, the Chilean plan is not fully privatized, the government responsible for the provision of minimum pension to all participants and government continue its control in the capital allocation process.

Requiring only one accounting method to move funds in to pension system reduces transaction costs. However, public understanding of that principle is often limited.

The Chilean plan must be viewed as a important step for pensions. It has moved pension plans outside the direct control of government.

Chile has sparked a privatization revolution in social security systems worldwide. Within the last seven years Peru, Argentina, Colombia, and Italy have privatized some portion of their security systems along the Chilean model.

There are main two finance sources, first is called "bridge debt" based on the market interest rate, second is a transition tax which replace part of the existing payroll tax. The government takes strength precautionary measurements if system go bankruptcy. In the mean time, system is being continuously inspected from government. "Upon retirement, workers may choose between several combinations such as

Withdrawals, if participant chooses a scheme of withdrawals, in guaranteeing a minimum pension or Purchase an annuity, the government pays the difference

between minimum pension and the annuity. Government offers partial insurance against the insolvency of life insurance companies, which provide annuities".<sup>104</sup>

Lastly, from Augusto Iglesias who chief economist for the pension fund Habitat states: "The Chilean social security system is based on very simple and reasonable principles which people care about their money that they will work harder if they see the benefit to themselves an that putting it in private hands is more efficient than with the government".<sup>105</sup>




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<sup>104</sup> Richard Hemming, "Should Public Pensions be Funded", *IMF Working Paper*, no.35, p.28 (March 1998)

<sup>105</sup> Borden, op.cit., p.8; Cited in Saul Hansell, "The New Wave in Old Age Pensions", *Institutional Investor*, P. 81( November 1992)

## PART IV

### CONCLUSION AND RECOMMENDATIONS

Reforming the current pension system, which pay-as-you-go, is the most important fiscal issue for government. The current system involves high tax rates that reduce real incomes of retirees. Appropriate reforms can increase real incomes of workers and retirees.

Firstly start with the pension program recommended by the World Bank's Report,<sup>106</sup> has a three- tiered structure, defined contribution, fully funded, mandatory private pension plan for each workers. The Bank generally concerns five key issues in working with clients on pension policy,<sup>107</sup>

- (1) Short-term financing
- (2) Long-term viability
- (3) Effects on economic growth
- (4) Adequacy and other distributional issues
- (5) Political risk

#### 4.1 REFORMING SOCIAL SECURITY SYSTEM

Turkish social security system, pay-as-you-go (PAYG) likes many other countries running into financial difficulties, actually already in financial difficulties. Workers' longevity is increasing, fertility rates are decreasing and real wage rates are

<sup>106</sup> Ajit Singh, " Pension Reform, the Stock Market, Capital Formation and Economic Growth: A Critical Commentary on the World Bank's Proposals", *The ISE Review*, p.54, vol:2, no.7-8(July-December 1998)

Cited in World Bank, " Averting the Old Age Crises: Policies to Protect the Old and Promote Growth", *World Bank Policies Research Report*, New York, Oxford University Press, 1994,

<sup>107</sup> Robert Holzmann, " A World Bank Perspective on Pension Reform", *World Bank*, P 4-6, 1998, [www.worldbank.gov](http://www.worldbank.gov).

very low level. There are some change alternatives for bring the system into actuarial balances.

The different reform options can be used those briefly like in below.<sup>108</sup>

- 1-Restructuring Pay-as you-go (PAYG) system
- 2-Establishing Personal (Individual) Social security system (PSS)
- 3- Multi-tired system with mandatory saving component
- 4- Multi-tired system with voluntary saving component

#### **4.1.1 RESTRUCTURING PAY-AS -YOU-GO SYSTEM**

One approach is to consider the instruments, which are being used, in existing system. This is main debate in many countries on restructuring retirement income systems. Such as United States, Japan, Australia are discussing use of the government sponsored or mandated private pension to supplement or replace public one. Obviously, private pension and other saving systems for retirement have been available. The governmental role is to establish a system of regulation to minimize the risk associated with private financial institutions.<sup>109</sup>

Generally in countries, which are reformed their system, used some restructuring options; raising the retirement age and cut in benefits.

##### **4.1.1.1 RAISING THE RETIREMENT AGE**

Today's mostly arguing subject is that raising of retirement age. It's now 38 for women and 43 for men but its being argued in last reform proposals that if those reform proposals accept retirement ages will increase 58 for women and 60 for men.

Also there are some strong arguments for raising retirement age, there are also some obstacles. Not all workers have easy jobs and rising the retirement age may have different effect on different groups who are have different life expectancy. Lastly, the fact that, " life expectancy at retirement has increased doesn't necessarily

<sup>108</sup> Gillion, Colin and Michael Cichon, " Pension Reform in Turkey", *Hazine Dergisi*, Sosyal Güvenlik Özel Sayısı, İstanbul, (August 1996), P.43.

<sup>109</sup> David G. Mathiasen, " The Capacity for Long Term Decision Making in Seven OECD Countries: The Case of Ageing", *OECD Ageing Working Paper* no.6.1, P.25, 1998

mean that retiree health has; the three added years on a retiree's life may be three years of relatively poor health for some individuals".<sup>110</sup>

#### 4.1.1.2 CUTS IN BENEFITS

The main problem for this method is that for many people social security benefits are already very low and even a little cutting lead many aged people into poverty status.

Another approach that is suggested in the deficit reduction plan is reducing benefits for high-income retirees.<sup>111</sup> There are some ways doing this that one is altering benefit formula gradually so those high-income replacement rates are decreased. Another is to make the benefits taxable within the general taxes.

There may be mixed strategies for deficit reduction in social security system. Those methods can be used step by step. First, increase in retirement age and than gradual reductions in high-income replacement rates.

#### 4.2 PERSONAL (INDIVIDUAL) SOCIAL SECURITY SYSTEM (PSS)

PSS system that would be managed either privately or publicly. Under this plan, employers would allocate a portion of payroll taxes collected from workers to charge investment fiduciaries- mutual fund, insurance companies, banks, or other approved organizations- selected by employees. Employees would have the right to change their fund management companies 2 or 3 times without charge. Fund would be invested in approved assets of employees' choice. When workers reach the retirement age, they would be able to withdraw funds or convert the balance in to annuity. Any funds remaining at the worker's death could be transferred to his or her heirs.<sup>112</sup>

There are some complications of this system;

- Cost of fund collections may would increase administrative costs

<sup>110</sup> Edward M. Gramlich, *Reforming Social Security*, p.221; Michael S. Gordon, Olivia S.Mitchell and March M. Twinney, Pension Research Council Publication, 1997.

<sup>111</sup> Ibid, pp.221-224.

<sup>112</sup> Henry J. Aaron, " Testimony Before the Senate Committee on the Budget", *The Brooking Institution Economic studies*, p. 3, 1998( July 23)

- Additional expenditures for public education will be necessary
- Cost of keeping records, correcting errors and providing information would increase
- Annuitization through private insurance companies would generate additional administrative charges.<sup>113</sup>

#### 4.2.1 TRANSITION TO AN INDIVIDUAL ACCOUNT SYSTEM

Individual account plans differ from traditional social security in two important ways.<sup>114</sup> First, the worker's ultimate retirement benefit depends on the size of the worker's contributions and success of the worker's investment plan. These investments might be restricted to inflation-indexed, exchange-rate hedged, high-grade domestic and international government and corporate zero-coupon bonds that come due when the worker reaches age 65.<sup>115</sup> Workers who make larger contributions receive bigger pensions, other things equal. Also workers whose investments earn better will get larger pension than workers who invest poorly.

Second, an individual account pension will be paid out of large privately managed saving accounts. Current social security system is financed mainly by the payroll taxes of active workers.

There are some risks in individual saving account system such as deficit risks, financial market risks (fluctuations). Also administrative cost would be high.

Although this system contains some disadvantages there are some advantages;<sup>116</sup>

- a. It increases pensions
- b. It increases employment. Because the payroll tax can lead to labour market distortions but new system can eliminate these distortions.
- c. It increases savings. The workers must have a minimum rate of savings and there are incentives for additional savings.

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<sup>113</sup> Ibid, P.2.

<sup>114</sup> Gary Burtless, "The Role of Individual Personal Saving Accounts in Social Security Reform", *The Brookings Institution Economic Studies*, p. 2, 1998( June 18)

<sup>115</sup> Laurence Kotlikoff and Jeffrey Sachs, "It's High Time to Privatize", *The Brookings Institution Artwork*, vol.15, no.3, p.18 (summer 1997)

<sup>116</sup> Fisunoğlu, op.cit., p. 99.

d. It reduces the government intervention in to the system and also de-politicizes the pension the pension system.

The private saving account system have some restrictions for Turkey. ILO study stress that the workers between 30-50 years will not join the new system. TÜSİAD study show that mandatory savings of workers should be transferred to the new system. These savings would make a substantial contribution to the system<sup>117</sup>

Income distribution is the most important problem in Turkey. It's one of the worst in the world and getting worst. This necessitates for the poor people don't allow entering new system.

Government may continue existing system with new Mandatory saving system. This transition time can take 5-10 years. Under new system some workers who are near the their retirement age can be excluded to enter new system. Why participation should be mandatory? There are two ideas to support this approach.<sup>118</sup>

First, some individuals are too shortsighted to provide for their own retirement. A society that made no provision for helping those who had no resources when they were too old to work would leave them to private charity so low. Second, old systems for the aged might encourage some lower income individuals to make no savings for their old age, because they know that they would receive retirement income in every condition. The key problem in any transition method is that employees during the transition period must pay the PAYGO taxes to support the existing retirees and at the same time accumulate assets for their retirement.<sup>119</sup> Several western European countries have universal employer-provided pensions through mandates or industry arrangements.<sup>120</sup>

If transition to new system were voluntary, there may be important complication for new system. Such as contributor who are in high-income level easily pass new system but poor people who are don't have enough income couldn't enter new system.

<sup>117</sup> Fisunoğlu, op.cit., pp. 100-101.

<sup>118</sup> Martin Feldstein, " Transition to A Fully Funded Pension System: Five Economic Issues", *National Bureau of Economic Research WP*, no.6149, p.6, August 1997

<sup>119</sup> Ibid, p.9.

<sup>120</sup> Diamond, op.cit., p.84

Government in either mandatory or voluntary system has to pay poor peoples' premium that cannot afford to pay premium.

Lastly we will stress on study on "An Application of the Defined Contribution Model for Turkey".<sup>121</sup> In this study, they investigated the relationships among pension rate, contribution rate, length of working life and length of retirement life by using a mathematical model.<sup>122</sup> Below are some of the results of the study:

- (1) Pension systems are extremely sensitive to the length of working life and length of life in retirement. In Turkey life expectations are increasing while shortening the working life. This situation deteriorates the ability of the system to provide adequate pension payment.
- (2) Pension rate is also very sensitive to real returns. There no difference in Fund is managed either publicly or privately. Even at the current average contribution level 18 percent, pension payments can be improved

We can recommend in the light of those information are:

First, politicians' interventions into the system must be obstructed. There is no doubt that decreasing of retirement age while increase life expectancy distorted structure of social security system.

Second, lengthening of the working years to reasonable levels and lifting early retirement would have positive effect on pension rates.

This Defined Contribution model can adopt as part of multipillar system, which recommended by the World Bank (1995) and TUSIAD (1997).

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<sup>121</sup> Metin R Ercan and Deniz R. Gökçe, "Defined Contribution Model: Definition, Theory and an Application for Turkey", *The ISE Review*, pp33-49., vol:2, no.7-8(July-December 1998)

<sup>122</sup> The Pension Model Presented is Due to Vitas (1993); Cited in Metin R Ercan and Deniz R. Gökçe, "Defined Contribution Model: Definition, Theory and an Application for Turkey", *The ISE Review*, pp33-49., vol:2, no.7-8(July-December 1998)

## REFERENCES

- AARON, Henry J, Testimony before The Senate Committee on the Budget, *The Brooking Institution Economic Studies*, Washington, D.C, 1998.
- BLOMMESTEIN, Hans J., " Financial Market Implications of Pension Reforms", *The ISE Review*, vol.2, no.7-8 (July-December 1998).
- ..... , " International Financial Market Implications of Aging Populations", *Financial Market Trends*, no.71, (November 1998).
- ....., " Pension Funds and Financial Markets", *The OECD Observer*, no.212 (June/ July 1998)
- BLOMMESTEIN, Hans J., and Norbert FUNKE, " The Rise of Institutional Investor" *The OECD Observer*, no.212 ( June/ July 1998)
- BODIE, Zvi, Olivia S. MITCHELL and John A. TURNER, *Securing Employer Based Pensions*, University of Pennsylvania Press, Pennsylvania, 1996.
- BORDEN, Karl, Dismantling The Pyramid: The Why and How of Privatizing Social Security, *SSP*, no.1, 1995.
- BRIGHAM, Eugene F and Louis C. GAPENSKI, *Intermediate Financial Management*, The Dryden Press, Forth Worth, 1996.
- BURTLESS, Gary, The Roll of Individual Personal Saving Accounts in Social Security Reform, *The Brooking Institutions*, Economic Studies, 1998.
- BUZLUPINAR, Eif, Emeklilik Fonları: *Sermaye piyasasına Kaynak Aktarımı; Türkiye Üzerine Değerlendirmeler*, SPK, Ankara, 1996.
- DELANEY P.R, J.R. ADLER, B.J. EPSTAIN and M.F. FORAN, *Interpretation and Application of GAAP*, John Wiley&Sons, USA, 1998.
- DAVIDSON Sidney, Clyde P. STICKNEY and Roman L. WEIL, *Financial Accounting: An Introduction to Concept, Methods and Uses*, USA, 1985.
- DAVIS, E. Philip, Pension Funds: *Retirement-Income Security and capital Markets, An International Perspective*, Oxford University Press, inc., New York, 1995.
- ....., Investment of Mandatory Funded Pension Schemes, Pension Institute at Birkbeck College, *Working Paper*, 1995.

- ....., Linkage Between Pension Reform and Financial Sector Development, Pension Institute at Birkbeck College, *Working paper*, London, 1998.
- DIAMOND, Peter A., " Proposals to Restructure Social Security", *Journal of Economic Perspectives*, vol.10, no.3 (Summer 1996)
- ERDOĞAN, Erol, and Levent ÖZER, *Sermaye Piyasasında Kurumsal Yatırımcılar*, İMKB, İstanbul, 1998.
- ERGENEKON, Çağatay, " The Impact of Tax Regimes on The Development of Private Pension Funds: Reflections of The Capital Markets", *The ISE Review*, vol.2, no.7-8 (July-December 1998).
- ....., *Özel Emeklilik Fonları: Şili Örneğinden Alınacak Dersler*, İMKB, İstanbul, 1998.
- FELDSTEIN, Martin, Transition to A Fully Funded Pension System: Five Economic Issues, *NBER, Working Papers* no.6149, 1997.
- FISHER, Bernhard and Helmut REISEN, Pension Fund Investment from Aging to Emerging Markets, *OECD, Policy Brief* no.9.1994.
- FİSİNOĞLU, Mahir, " Prospect for Private Pension Systems and Their Relation to The Stock Market in Turkey", *The ISE Review*, vol.2, no.7-8 (July-December 1998).
- GILLION, Colin and Michael CICHON, " Pension Reform in Turkey", *Hazine Dergisi*, Sosyal Güvenlik Özel Sayısı, İstanbul, (August 1996).
- GORDON, Michael S, Olivia S. MITCHELL and MARCH M. TWINNEY, *Positioning Pensions for The Twenty-first Century*, University of Pennsylvania Press, Pennsylvania, 1997.
- HELLER, Peter S., Rethinking Public Pension reform Initiatives, *IMF, Working Papers*, no.61, 1998.
- HEMMING, Richard, Should Public Pension Be Funded, *IMF Working Paper*, no.35, 1998.
- HENDERILGEN Eldon S, *Accounting Theory*, USA, 1990.
- HOLZMAN, Robert, A World Bank Perspective on pension reform, *World Bank*, 1998.
- HORNGREN Harrison, *Accounting*, USA, 1993.
- International Accounting Standard 19*

JAMES, Estelle, "New Models for Old Age Security: Experiments, Evidence, and Unanswered Questions ", *The World Bank Research Observer*, vol.13, no.2 (August1998)

*Journal of Accountancy*, September 1998

KAM Vernon, *Accounting Theory*, John Wiley & Sons Inc., 1990.

KIESO Donald E. and Jery J. WEYGANDT, *Intermediate Accounting*, John Wiley & Sons Inc., 1998.

KOTLIKOFF, Laurance J. and Jeffrey SACHS, " Its High Time to Privatize", *The Brooking Institution*, vol.15, no.3 (summer 1997).

LABOUL, Andre," Private Pension Systems: Regulatory Policies 1", *Financial Market Trends*, no.70, (June 1998).

.....," Private Pension Systems: Regulatory Policies 2", *Financial Market Trends*, no.71, (June 1998).

MADURA, Jeff, *Financial Markets and Institutions*, West Publishing Company, St. Paul, 1992.

MATHIASSEN, David G, The Capacity for Long Term Decision Making in Seven OECD Countries: The Case of Aging, *OECD Working Paper AWP6.1*

PEKER, Ayşe, *Sosal Güvenlik Sisteminin Yeniden Yapılandırılması Tartışmaları ve Çözüm Önerileri*, TCMB, Araştırma Genel Müdürlüğü, Ankara, 1997.

REVSINE Lawrence, Daniel W. COLLINS and W. Bruce JOHNSON, *Financial Reporting and Analysis*, USA, 1998.

SINGH, Ajit, " Pension Reform, The Stock Market, Capital Formation and Economic Growth: A critical Commentary on The World Bank's Proposals", *The ISE Review*, vol.2., no.-8 (July-December 1998)

*Statement of Financial Accounting Standard 87*

*Statement of Financial Accounting Standard 88*

*Statement of Financial Accounting Standard 130*

*Statement of Financial Accounting Standard 132*

The Statistical yearbooks of Turkey, 1997.

TURNER, John and Sophie KORCZYK, Social Security Reforms, Social Security Department, *ILO Geneva*, 1998.

WHITE Gerald I, Sondhi ASHWINPAUL C. and Fred DOV, *The Analysis and Use of Financial Statements*, John Wiley&Sons, USA,1998.

VITTAS, Dimitri, Regulatory Controversies of Private Pension Funds, *Development Research Group, The World Bank*, 1998.

[WWW.ilo.org](http://WWW.ilo.org).

[www.oecd.org](http://www.oecd.org).

[www.ssa.gov](http://www.ssa.gov).

[www.worldbank.org](http://www.worldbank.org).

