

我國人口老化與金融市場之發展研究報告  
**Aging and Capital Market Development in Taiwan**

研究報告

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# 中文部份

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## 壹、 序論

本研究分析台灣近來所面臨的人口老化問題，並進一步探討未來老年人口比例提高對於台灣退休制度以及金融市場之影響。本研究第一部分先提出人口老化問題以及介紹台灣的退休制度，第二部分則簡要討論台灣退休基金資產配置狀況以及年金市場之發展情形。最後，本研究提出目前台灣金融市場所面臨的問題與挑戰，並進一步提出一些解決方案來強化台灣退休環境。

## 貳、 台灣人口老化問題

在 2005 年底台灣人口已達到 2280 萬人，其中男性比例為 50.7%，女性比例為 49.3%。隨著醫療水準的進步，台灣國民的平均餘命也逐年提高，並且人口結構也跟著改變。表一說明了近 30 年來台灣平均餘命的情況，在 1980 年時，男性平均餘命為 69.56 歲，而女性為 74.54 歲；到了 1990 年時，男性的平均餘命為 71.33，女性為 76.75；而到 2004 年時，男性平均餘命為 73.47，而女性為 79.70，從表一可知台灣人口的平均餘命從過去幾十年間是逐年增加。

表一 台灣人口平均餘命

年度	1970	1980	1990	1995	2000	2004
男性	66.66	69.56	71.33	71.85	72.67	73.47
女性	71.56	74.54	76.75	77.74	78.44	79.7

資料來源：<http://www.moi.gov.tw/stat/>

根據內政部統計，在 1993 年台灣超過 65 歲以上的老年人口有 150 萬人，約佔總人口的 7%；到了 2005 年老年人口已經達到 220 萬人，已經佔台灣總人口的 9.74%，因此台灣已經達到聯合國所定義的老年化社會，並且預估到了

2011 年時老年人口比例將會達到 15%，2031 年時老年人口比例會達到 20%。

從另一方面來看，近年來台灣的生育率卻是逐年下降，從 1993 年到 2005 年，台灣人口從 2100 萬人增加到 2280 萬人，然而在這期間的人口出生率卻從千分之 10.27 下降到千分之 5.8，因此人口成長趨緩的主要原因來自於出生率的下降。

綜合以上種種因素，台灣老年人口的依賴比例在過去也逐漸增加，老年人口依賴比之定義為退休老年人口和工作人口之比例，從 1951 到 1971 年台灣的老年人口依賴比大約都在 5% 左右，也就是 20 個工作人口扶養一個老人，但是近年來依賴比例大幅上升，並且在表二顯示出從 2001 年到 2036 年的情況，在 2001 年的時候，依賴比為 13.52%，並且預估到了 2021 年時老年人口依賴比會達到 22.87%，到了 2036 年更高達 34.13%，表示到了 2036 年時每三個工作人口必須扶養一個老年人。因此，我們也可以預期在台灣未來工作人口扶養老年人口之負擔將會越來越大。特別注意的是，這樣的問題將會使得未來台灣社會保險基金可能面臨嚴重破產危機的嚴厲挑戰。

表二 台灣老年人口依賴比

年度	65 歲以上人口	65 歲以上人口比例	老年人口依賴比
2001	194 萬	8.65%	13.52%
2021	362 萬	14.42%	22.87%
2036	561 萬	21.66%	34.13%

資料來源: <http://www.moi.gov.tw/stat/>

## 參、 台灣退休制度介紹

與其他國家相同，台灣的退休制度可分為三大部分：社會保險老年給付制度、雇主退休金計畫以及個人退休儲蓄等。而其主要的制度介紹介紹如下：

### 1. 第一層：社會保險老年給付制度

對於台灣的老年人而言，社會保險老年給付制度是退休保障中最重要的一個部分，在台灣社會保險老年給付制度主要可分為兩大類：勞工保險與公務人員保險。這兩種計畫都是確定給付制，並且都採取一次給付的支付方式。茲將這兩個社會保險老年給付制度的主要內容整理如下：

#### 一 勞工保險：

1. 型態：為確定給付制。
2. 保險費率：被保險人薪資的 6.5%，其中保費的 60%到 80%是由政府和雇主負擔。
3. 基金情況：採取隨收隨付制度，在過去 8 年的基金平均報酬率為 5.3%。
4. 老年給付請領標準：必須工作滿 25 年，或是工作滿 15 年且年齡 55 歲以上者。
5. 給付計算：採取一次給付，給付的基數為工作前 15 年每年累積一個基數，之後每工作一年累積兩個基數，而基數的上限為 45 個。此外，近年來也開始研擬將老年給付改採年金給付方式，目前正在修法制訂中。
6. 所得替代率：若不考慮通貨膨脹成本，在利率為 4%的情況下，勞保老年

給付之所得替代率約在 18%到 25%之間。

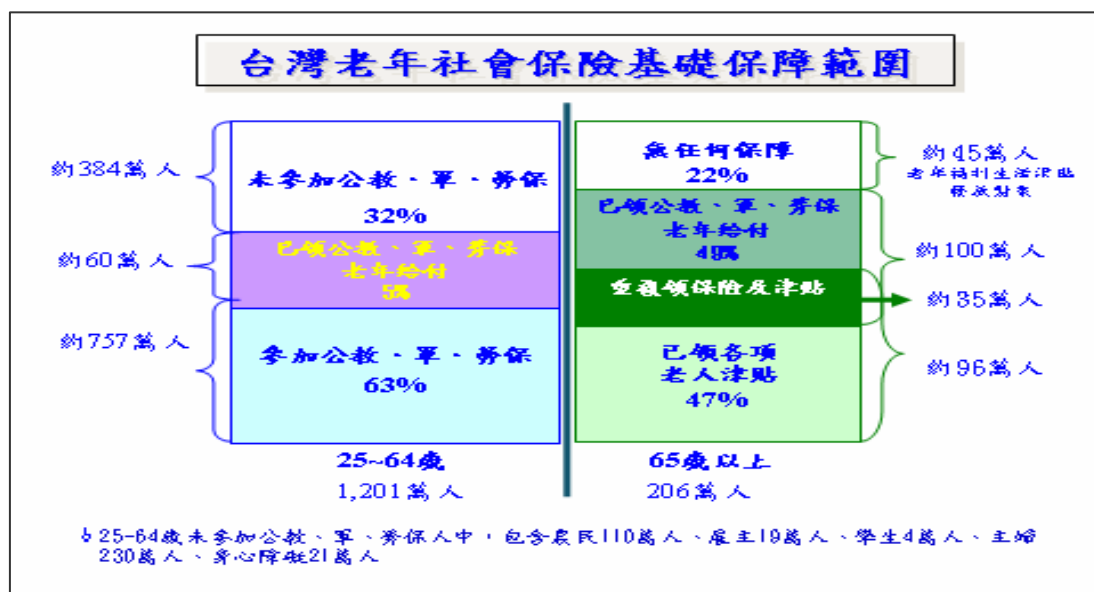
## 二 公務人員保險老年給付

1. 型態：為確定給付制。
2. 保險費率：被保險人薪資的 7.15%，其中 35%的保費由員工負擔，65%由政府負擔。
3. 基金情況：採取隨收隨付制，在過去 10 年的基金平均報酬率為 6.5%。
4. 老年給付請領標準：工作滿 15 年且年齡 55 歲以上者。
5. 給付計算：採取一次給付，給付的基數為每工作一年增加 1.2 個基數，基數的上限為 36。
6. 所得替代率：若不考慮通貨膨脹成本，在利率為 4%的情況下，老年給付之所得替代率約在 15%到 20%之間。

圖一顯示台灣社會保險保障之結構，從圖中可知台灣的工作人口（25 到 64 歲）約有 1200 萬人，退休人口（65 歲以上）有 206 萬人。在工作人口當中，63%的人有社會保險保障，不過也有 32%的人沒有任何保障，另外有 5%的人已經請領社會保險的給付。

在 65 歲以上的退休人口當中，有 49%的人已從社會保險中獲得老年給付，有 30%的人可從政府的社會救助制度得到每月 3000 元的給付，另外值得注意的是，有 22%的人，相當於 45 萬人沒有任何社會保險的保障，也就是將近 450 萬的自營勞工、家庭主婦、失能之人以及其家屬都沒有任何的退休計畫保障。與其他國家相比，此比例非常高，因此本研究建議政府應注意這個問題，並且未來退休給付制度需針對此現象加以改進，目前政府已研擬將在未來開辦國民年金制度。

圖一 社會保險保障



資料來源：內政部統計數據 <http://www.moi.gov.tw/stat/>，本研究整理

## 2. 第二層：雇主退休計畫

在台灣，第二層同樣也有兩種主要的雇主退休金制度，分別是勞工退休金制度以及公務人員退休撫恤制度。此兩種計畫都屬於確定給付計畫，並且都以一次給付的方式請領退休金。

### 一、勞工退休金舊制 -- 勞基法退休金制度（簡稱勞退舊制）

1. 型態：為確定給付制。
2. 提撥方式：雇主每月提撥員工薪資的2%到15%到退休準備基金當中，而員工則完全不用提撥。
3. 基金情況：退休準備基金在過去15年當中的平均報酬率為6%左右。



4. 請領標準：至少在同一公司工作 15 年以上並且年滿 55 歲，或是在同一公司工作滿 25 年以上才可領取。
5. 給付計算：為一次給付，給付的基數為工作前 15 年每年累積兩個基數，之後每工作一年累積一個基數，而基數的上限為 45 個。
6. 所得替代率：若不考慮通貨膨脹成本，在利率為 4% 的情況下，老年給付之所得替代率約在 15% 到 25% 之間。

此部份的退休給付，在過去只有約 10% 的公司有固定提撥資金到退休準備金上，並且最後只有不到 15% 的勞工領到這筆退休金，主要的原因在於請領條件相當嚴苛，並且沒有制度中沒有所謂的賦益權 (Vesting) 的機制設計。許多過去研究顯示，80% 的台灣勞工所服務之中小企業，其公司平均營運期間低於 13 年，因此很難使勞工在退休時符合達到工作 15 年以上的請領條件。政府為了改善勞退舊制的缺失，研擬新的退休法令 (勞工退休金條例) 來解決這樣的問題，並且於 2005 年 7 月 1 日正式開始實施，新制勞工退休條例將取代現有的制度，不但保障員工的退休金權益，並且嚴格規範雇主的提撥義務。

## 二、勞工退休計畫新制 -- 勞工退休金條例 (簡稱勞退新制)

### 1. 型態：為確定提撥制。

- ◇ 如果公司人數在 200 人以下，雇主必須為勞工開一個個人帳戶，統一一由勞保局管理；
- ◇ 如果公司員工人數大於 200 人，並且超過半數同意的話，雇主可以為其員工向保險公司投保年金保險，當作員工的退休計畫，取代原本的個人帳戶。

### 2. 提撥：雇主每月至少提撥員工薪資的 6%，而員工也可以自願提撥薪資的 1% 到 6%，並且在此範圍內可享有稅賦優惠。

3. 基金情況：為單一基金由政府管理，並且基金報酬率保證不低於兩年期定存存款利率。
4. 領請標準：年滿 60 才能請領退休金。
5. 退休給付：若員工參與的期間低於 15 年，則一次領回退休金；若超過 15 年，則可以選擇採取年金給付方式。
6. 退休所得替代率：視個人帳戶的投資報酬率或年金保險保單之給付水準而定。

### 三、公務人員退撫制度

1. 型態：為確定給付制。
2. 提撥：員工每月提撥本俸的 8% 到 12%，並且員工負擔 35%，政府負擔其餘的 65%。
3. 基金情況：在過去 10 年的基金平均報酬率為 8%。
4. 請領標準：至少工作 5 年並且年滿 60 或工作 25 年以上。
5. 退休給付：可採一次給付，給付標準為每工作一年累積 1.5 個基數，最多 53 個基數。若工作滿 15 年可採用月領方式，每年給予薪資的 2%，最多可累積到 70%。或是可採用一次領以及月領的混合方式。
6. 所得替代率：若假設沒有通貨膨脹率，並且利率在 4% 的情況下，老年給付之所得替代率約在 60% 到 70% 之間。

### 3. 整體所得替代率

所得替代率的定義為個人的平均退休所得除上退休前的平均薪資比例。所得替代率衡量一個人在退休後的預期所得與退休前薪資所得的比較。一般在 OECD 國家，其退休所得替代率大約都在 70% 以上，不過目前台灣的所得替代率要比 OECD 國家低的多，特別是勞工階級的人。表三為台灣主要退休制度的所得替代率整理：

表三 台灣退休制度所得替代率

任職 30 年				所得替代率 (%)
項 目				利率 4%
公 務 人 員	退 撫 基 金	一 次 給 付	男 性	24.6
			女 性	23.0
	月 退 給 付	男 性	71.4	
		女 性	72.0	
	公 保	男 性		19.7
		女 性		18.4
勞 工	舊制勞基法 勞工退休金	男 性		24.6
		女 性		23.0
	勞 保	男 性		24.6
		女 性		23.0

資料來源：王儷玲 (2005)，勞退新制對勞工退休所得與未來退休市場之影響

就勞工來說，如果折現利率為 4%，則台灣男性勞工的所得替代率為約 24.6%，而女性的勞工所得替代率約為 23%。由於勞工保險老年給付以及舊制勞基法退休金約提供相同的所得替代率，因此台灣勞工總所得替代率大約在 40% 到 50% 之間。然而，如之前所提到，由於退休給付之領取標準過於嚴苛，大多數的勞工無法領取第二層勞基法下之雇主退休金，因此實施勞退新制的目的就是希望增加勞工的退休給付，以提高其所得替代率。

就公務人員來說，假如折現利率為4%，在社會保險給付下，男性公務人員的所得替代率為19.7%，而女性的公務人員所得替代率為18.4%。在雇主退休金下，如果採一次給付，則男性公務人員的所得替代率為24.6%，女性公務人員的所得替代率為23%；如果採年金給付，男性公務人員的所得替代率為71.4%，女性公務人員的所得替代率為72%。因此，在這兩種制度下，如果採取一次給付，則公務人員總所得替代率大約在40%到50%中間，如果採年金給付，則公務人員總所得替代率將超過90%。

整體來說，隨著台灣人口老化所伴隨而來的種種問題，台灣現有的退休制度在未來勢必要做更多改革。況且，目前台灣確定給付退休基金所面臨的無力清償的問題至今仍無法有效地解決，而勞退新制的實施也使台灣的雇主退休制度從確定給付制轉變成為確定提撥制，這也意味著台灣的勞工未來將需要承擔更大的退休金投資風險。尤其，目前大多數勞工仍無法領取雇主退休計畫之退休金給付，其退休所得嚴重不足。因此，為了讓我國未來退休金制度更加健全，政府應對於確定給付以及確定提撥退休制度目前所存在的問題，積極尋找解決之道，以創造更好的退休環境。

## **肆、 退休基金投資對於金融市場之影響**

一個國家在人口老化後，其可能的重要影響就是退休基金管理更專業化的服務與退休儲蓄商品的需求增加。隨著退休基金資產的不斷累積，退休基金的資產配置與投資管理策略將對金融市場結構有重大的影響。並且可預期的是，退休儲蓄商品（例如年金保險或人生週期基金）也將會在金融市場中扮演重要的角色，個人退休儲蓄市場將會越來越蓬勃發展。

## 1. 退休基金資產配置與金融市場

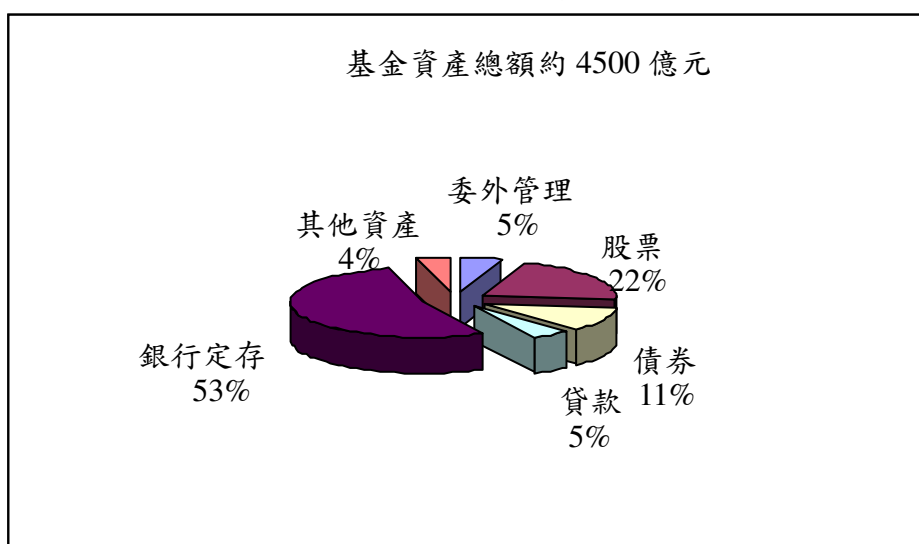
資產配置對退休基金來說是很重要的一環，因為配置會影響到基金的報酬率，表四是世界主要國家退休基金的資產配置情形，從表四中可以得知，股票與債券是世界主要國家退休基金主要的投資項目。而圖二、圖三以及圖四為我國勞工保險基金、勞工退休基金以及公務人員退撫基金在 2004 年的資產配置情形。從以上各圖表之交叉比較，可以看出台灣退休基金的投資策略較偏向保守，例如台灣退休基金將大部分的資金放在銀行存款或是短期票券上，與其他國家相比其比例都偏高。此外，台灣退休基金的股票持有比例卻大約只占 20% 左右，遠比其他國家的 40% 到 60% 低了許多，而台灣退休基金債券的持有比例也僅在 10% 以下，與其他國家的 40% 到 50% 相比也低了很多。

表四 退休基金資產配置 (1985-1997) 單位：%

	國內股票	國外股票	不動產	銀行存款	國內債券	國外債券
德國	10	1	12	8	67	2
日本	24	5	3	5	54	9
香港	27	47	0	6	3	16
澳大利亞	39	18	7	9	21	6
美國	49	3	2	12	33	1
英國	56	21	7	4	9	3

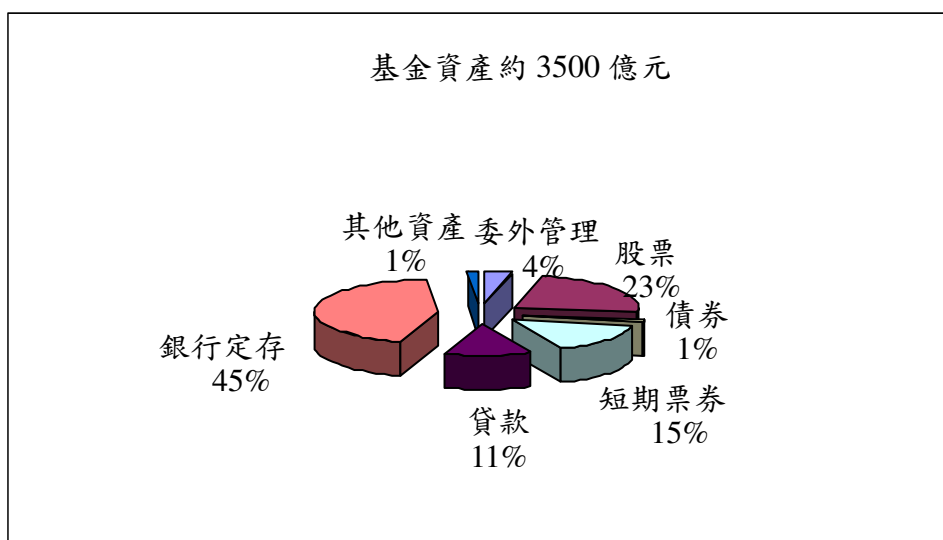
資料來源：Davis Philip (2003)

圖二 勞工保險基金 2004 年資產配置



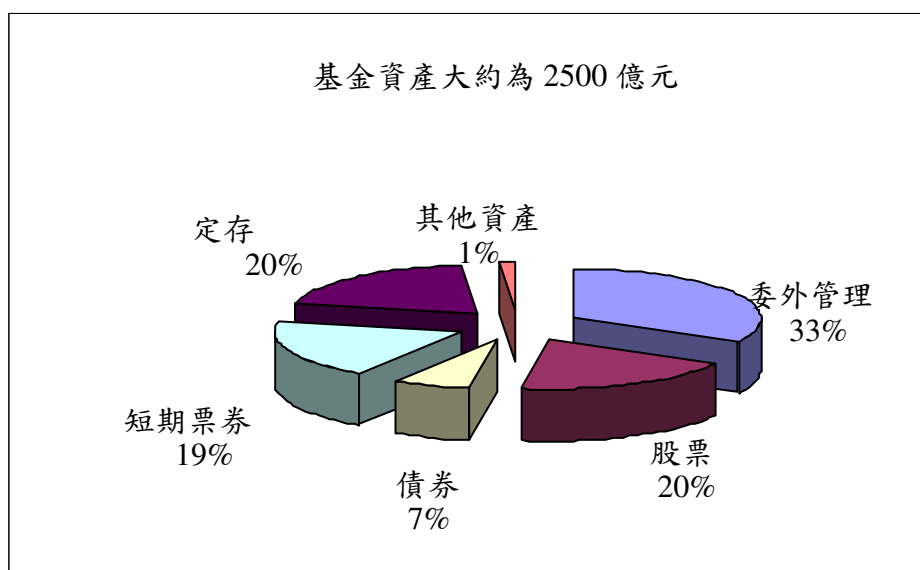
資料來源：勞工保險局統計資料，<http://www.bli.gov.tw/>

圖三 勞工退休基金 2004 年資產配置



資料來源：台灣勞工退休基金年度統計資料，<http://www.bli.gov.tw/>

圖四 公務人員退撫基金 2004 年資產配置



資料來源：台灣公務人員退撫基金年度統計資料，<http://www.fund.gov.tw/>

值得注意的是，台灣退休基金對於委託外部專業經理人管理退休基金（委外投資）的需求有逐年增加的趨勢，在 2001 年退撫基金開始將一部份資金委外投資管理，後來各退休基金也開始跟進。表五為三大退休基金從 2001 年到 2004 年委外投資管理的比例，從表中可以明顯看出委外投資管理比例有逐年

成長的現象。

表五 台灣三大退休基金委外比例（2001 到 2004 年）

年度	勞保基金	勞工退休基金	退撫基金
2001	0.00	2.88	10.47
2002	3.95	5.58	14.21
2003	3.73	3.04	33.04
2004	6.03	5.05	20.26

資料來源：賴勁麟(2004)，台灣退休基金監理之研究

目前三大退休基金的委外經理人其所管理的金額已高達 63.5 億美元，其比例佔台灣所有委外代操業務的 60% 到 70%。此外，2005 年之後，勞退新制下每年的提撥金額將高達 1500 億元，佔整個台灣 GDP 的 1.5%，而這些金額在未來都有可能交由外部經理人來管理，有研究估計勞退新制下的退休基金總額，在 20 年後預估可達到約 3 兆元，將成為台灣規模最大的退休基金。

## 2. 年金保險市場

年金保險是個人和保險公司之間所簽定的重要財務契約，其設計是用來提供老年人口退休後的退休收入，因此，年金保險可視為對對抗長壽風險的最佳工具。在過去 20 年來，世界各國對於年金保險的需求與重視逐年不斷增加，但在台灣過去對年金保險的需求卻很小，直到近幾年來才有顯著的增加。

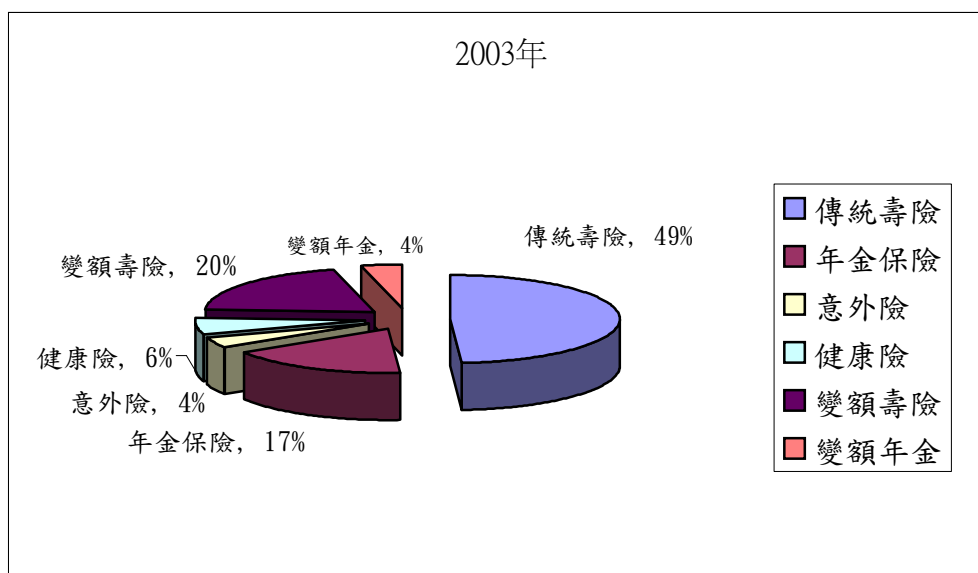
表六為台灣壽險業初年度保單保費收入的情況，從表中可以看出在 2001 年之後年金保險保費收入明顯成長上升。而圖五和圖六為 2003 和 2004 年各險種的初年度保費市場佔有率，從圖中發現，在 2003 年年金保險保費收入佔所有險種的 21%，到了 2004 年年金保險的市占率率上升到 35%。另外，圖 7 為年金保險從 2001 年到 2004 年的初年度保費收入成長率，從圖 7 中也可以看出，過去 5 年年金保險的成長比例非常高。

此外，在勞退新制實施後，勞工在超過 200 人以上之公司可以決定以購買保險公司之年金保險契約來取代個人帳戶，因此可以預見的是，在未來我國團體年金保險的市場也將會有明顯的成長。

表六 台灣壽險業各險種初年度保費

台灣壽險業初年度保費收入(新台幣 1,000)								
年度	壽險		意外險		健康險		年金險	
	初年度	成長率	初年度	成長率	初年度	成長率	初年度	成長率
1998	93,434,181		17,293,616		16,741,635		340,259	
1999	91,176,915	-2%	15,655,088	-9%	20,716,436	24%	736,376	116%
2000	100,183,212	10%	16,555,489	6%	26,600,903	28%	472,008	-36%
2001	130,669,158	30%	16,412,357	-1%	25,384,178	-5%	3,761,566	697%
2002	214,025,045	64%	14,447,256	-12%	22,376,932	-12%	12,607,717	235%
2003	235,558,750	10%	15,090,276	4%	20,703,842	-7%	73,011,855	479%
2004	259,985,931	10%	12,224,040	-19%	20,314,735	-2%	153,681,589	110%

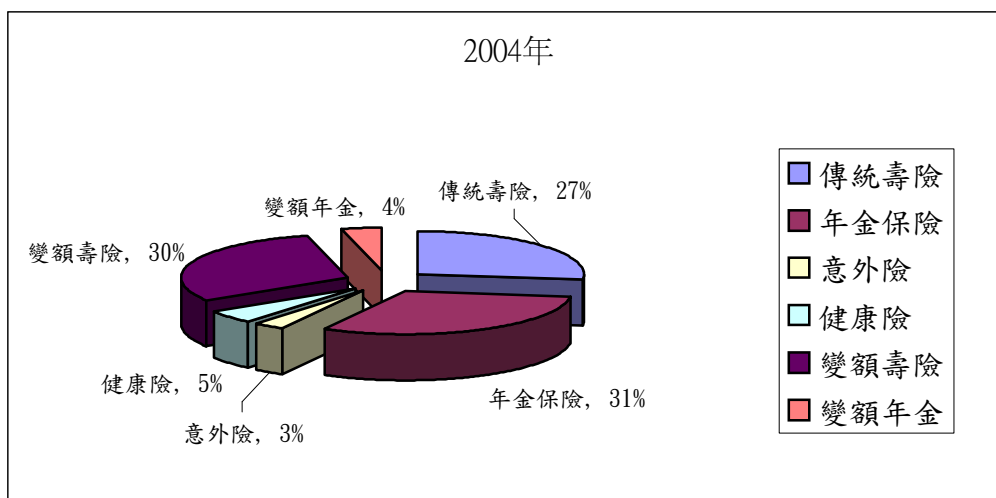
資料來源：台灣壽險業統計年報，頁.42-43



資料來源：保險事業發展中心出版：2004 年壽險市場概況，頁.13

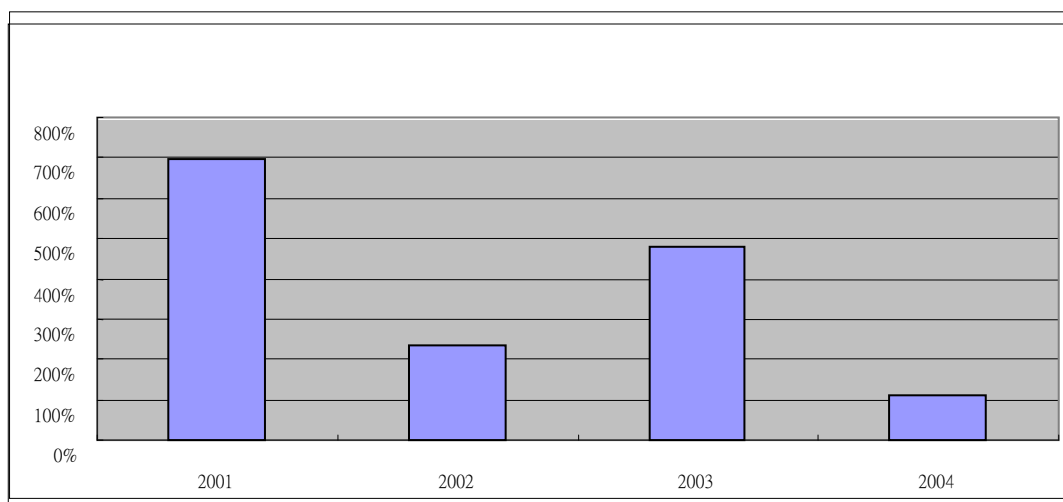


圖六 2004年各險種初年度保費比例



資料來源：保險事業發展中心出版：2004年壽險市場概況，頁.10

圖七 年金保險初年度保費成長率



資料來源：台灣壽險業統計年報頁.42-43

## 伍、 結論與台灣退休系統未來挑戰

雖然我國勞工退休制度已有初步的改革，而退休資產的急速累積成長也可以

進一步幫助台灣政府解決人口老化的問題，但是面對未來仍能有許多問題與挑戰必須克服，本研究將主要的問題與挑戰整理如下：

1. 目前台灣仍缺乏一個能夠提供穩定收入的社會保險給付來克服人口老化的長壽風險。
2. 確定給付退休基金有未來將面臨很大的無力清償風險，並且這樣的風險將會一直持續存在。
3. 目前台灣國內的投資市場仍缺乏適當的退休基金投資商品。
4. 由於必須給予保證報酬率，勞退新制確定提撥制退休基金未來的投資報酬率可能偏低，必須法令上的修改上試圖解決這個問題。
5. 台灣存在著極不均衡的退休所得結構，勞工的所得替代率非常低，但是公務人員所得替代率則非常高。
6. 目前國內沒有足夠的稅賦誘因鼓勵一般大眾做退休投資與儲蓄。

為了確保每個國民能夠擁有足夠的退休收入，為台灣創造一個穩定的退休投資環境，政府必須設法解決對於目前確定給付制與確定提撥制退休基金所面臨之種種問題。

針對前述所提到之問題與挑戰，本研究建議可以利用以下方法解決：

1. 政府應實施國民年金制度，並將勞保、公保老年給付制度由一次給付改成年金給付使得所有國民都能夠擁有對抗長壽風險的基本年金給付。
2. 改善退休基金的投資報酬率，在資產配置上可提高債券與股票之投資比重以降低確定給付制退休基金的破產風險。

3. 政府應鼓勵金融機構發行更多創新的財務商品。尤其，從資產負債管理的觀點來看，為了能夠執行資產負債存續期間配置，政府和金融機構應發行更多長期債券或固定收益資產以提供退休基金作風險管理與避險。
4. 勞退新制基金應增加投資組合工具以強化確定提撥退休基金之投資報酬率。
5. 未來制度應提供勞工較多的退休給付以平衡台灣退休所得不平衡的結構問題。
6. 政府應提供更好的稅賦優惠以鼓勵更多的退休儲蓄行為，例如在購買年金商品或其他退休儲蓄商品時能夠給予更多的稅賦優惠與免稅額度等。

## 英文部份

# **Aging and Financial Market Development in Taiwan**

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June 2006

## **I. Introduction**

This report analyzes the current aging problems in Taiwan and further examines the probable effects that the rapid growth in the old-age population will have on future pension system and capital market in Taiwan. The first part (section II and III) of this report discusses recent aging problems and introduces the pension system and retirement replacement ratio in Taiwan. The second part (section IV) briefly outlines the asset allocation of pension fund and the development of the annuity market in the capital market in Taiwan. Finally, section V points out key issues and challenges and provides some general guidelines for capital market policy to ensure the better retirement environment in Taiwan.

## **II. Aging Issue in Taiwan**

The population of Taiwan is 22.8 million at the end of 2005. Among them, male and female account for 50.7% and 49.3% of total population respectively. Due to the improvement of public health environment, people in Taiwan live longer and the age structure is gradually changing. Table 1 reports the life expectancy over past thirty years in Taiwan. From Table 1, it shows that in 1980, the life expectancy was 69.56 years for male and 74.54 years for female; in 1990, the life expectancy was 71.33 years for male and 76.75 years for female; in 2004, the life expectancy was 73.47 years for male and 79.70 years for female. Thus, Table 1 clearly reveals that the life

expectancy in Taiwan has increased gradually over past decades.

Table 1 Life Expectancy in Taiwan

Year	1970	1980	1990	1995	2000	2004
Male	66.66	69.56	71.33	71.85	72.67	73.47
Female	71.56	74.54	76.75	77.74	78.44	79.70

Source:<http://www.moi.gov.tw/stat/>

According to statistics from the Ministry of Interior, there were 1.5 million elderly people with age over 65 in 1993, representing more than 7 percent of total population in Taiwan. In 2005, the number of elderly people has increased to 2.2 million, accounting for 9.74% of total population. Thus, Taiwan has met the criteria of aging society defined by the United Nations. In the near future, the number of old-age people is expected to reach 15 percent of the total population by 2011 and more than 20 percent by 2031.

On the other hand, the birth rate in Taiwan has declined in recent years. From 1993 to 2005, the total population of Taiwan increased from 21 million to 22.8 million. However, during this period, the natural growth rate of population dropped from 10.27 to 5.8 per thousand people. The decreasing tendency of population is mainly due to the decline of the birth rate.

Thus, the old-age dependency ratio in Taiwan has also increased over past years. By definition, the old-age dependency ratio represents the ratio of retirement people to the current working people. Between 1951 and 1971, the old age dependency ratio was around 5 percent in Taiwan. It implies that during those years every 20 working people supported one elderly citizen in Taiwan. However, the old-age dependency ratio has significantly increased recently. Table 2 shows the old-age dependency ratio

from 2001 to 2036. In 2001, the old-age dependency ratio is 13.52 percent. According to estimate, this ratio will increase to 22.87 percent in 2021 and to 34.13 percent in 2036. This implies that in 2036 every three persons in the working age shall support one aged citizen. From above figures, we can expect that the increase in old age dependency ratio will make it harder for the wage-earning population to support the aged in Taiwan. Especially, it will raise the serious insolvency problems for the social insurance pension funds in the near future.

Table 2 Old-age Dependency Ratio in Taiwan

<b>Year</b>	<b>Population of age over 65 years</b>	<b>% of age over 65 years</b>	<b>Old-age Dependency Ratio</b>
2001	1.94 million	8.65%	13.52%
2021	3.62 million	14.42%	22.87%
2036	5.61 million	21.66%	34.13%

Source: <http://www.moi.gov.tw/stat/>

### **III. Pension System in Taiwan**

As most countries, the retirement protection in Taiwan consists of three pillars: social insurance pension system, employer pension plans and personal retirement savings. The main characteristics and benefits of the pension plans are briefly summarized as follows:

#### **1. First Pillar – Social Insurance Pension System:**

The old-age benefits of social insurance programs are the most important part of



retirement protection in Taiwan. There are two major social insurance programs -- Labor Insurance and Government Employees' and School Staffs' Insurance. Both programs are formula-based defined benefit plans and pay a lump-sum payment at retirement. In addition, military personnel are covered by military servicemen's insurance for some retirement payment.

A 、 Old-age benefits of Labor Insurance for labor workers:

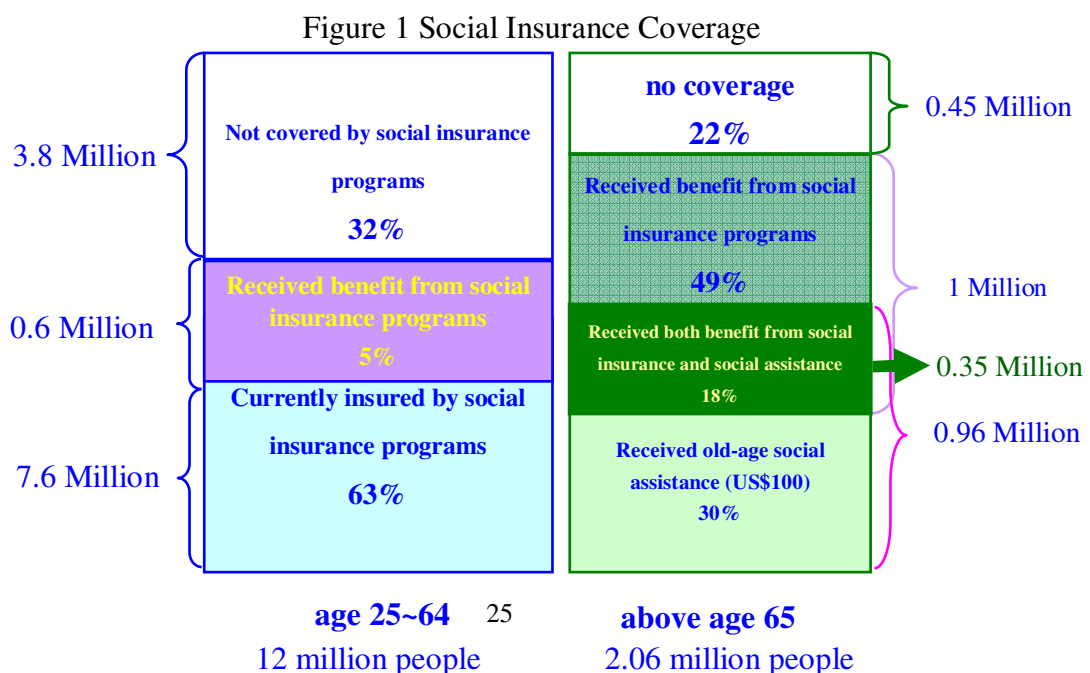
1. plan type: defined benefit plan
2. insurance premium: 5.5% of insured salary (60-80% of premium paid by employer and government)
3. funding situation: a pay-as-you-go pension fund with average return 5.3% for the past 8 years
4. eligibility to receive pension benefit: at least insured 15 years with age of 55, or insured more than 25 years
5. retirement benefits:
  - ◇ a lump-sum payment calculated by final insured salary and the number of insured year (pay 1 month salary per insured year for the first 15 years, pay 2 months salary per insured year of over 15 years with cap of 45 months)
  - ◇ annuity option might be implemented soon
6. retirement income replacement ratio: about 18-25% (assume 4% interest rate and no inflation)

B 、 Old-age benefits of Government Employees' and School Staffs' Insurance

1. plan type: defined benefit plan

2. insurance premium: 7.15% of insured salary (35% from employee and 65% from the government)
3. funding situation: a pay-as-you-go pension fund with average return 6.5% for the past 10 years
4. eligibility to receive pension benefit at least: work 15 years with age of 55
5. retirement benefit : a lump-sum payment calculated by final insured salary and year of service (pay 1.2 month salary per insured year with cap of 36 months)
6. retirement income replacement ratio: about 15-20% (assume 4% interest rate and no inflation )

Figure 1 shows the coverage structure of social insurance pension benefits in Taiwan. According to Figure 1, there are 12 million working people (age 25 to 64) and 2.06 million retired people (age over 65) in Taiwan. For the group of working people, 63% is currently insured by social insurance programs, 32 percent is not covered by any social insurance pension program, and 5 percent have received the retirement benefit from social insurance programs.



Source: <http://www.moi.gov.tw/stat/> by author's calculation.

Among group of retired people, 49 percent received pension benefit from social insurance programs; 30 percent received the social assistance only (roughly US\$100 per month). It is worth noticing that 22 percent of retired people (about 0.45 million) are not covered by any social insurance program. That is, there are up to 4.5 million self-employed workers, farmers, housewives and disabled persons and their families are not protected by any pension plan. Compared to other countries, this percentage is relatively high. Therefore, it is definitely deserved further pension reform this. The government has been working on a solution to fix the above issue. Thus, the National Annuity Pension Plan is planned to implement in the near future.

## **2. Second Pillar –Employer Pension Plan**

There are also two major employer pension programs in Taiwan-- Labor Pension Plan and Government Employees' and School Staffs' Pension Plan. Both plans are formula-based defined benefit plans and pay a lump-sum payment at retirement.

C、 Labor Pension Plan – Old Scheme (the pension provisions of Labor Standards Law)

1. plan type: defined benefit plan
2. contribution:
  - ✧ 2-15% of monthly salary for pension reserve fund from employer
  - ✧ no employee contribution
3. funding situation: a pension reserve fund with average return 6% in for

the past 15 years

4. eligibility to receive pension benefit: at least work 15 years in the same company with age of 55, or work more than 25 years in the same company
5. pension benefits: a lump-sum payment calculated by final retirement salary and year of service (pay 2 months salary per insured year for the first 15 years, pay 1 month salary per insured year of over 15 years with cap of at 45 months)
6. retirement income replacement ratio: about 15-25% (assume 4% interest rate and no inflation)

In the past, only 10% of the companies maintained sufficient pension reserve fund and only about 15% of the workers actually received the pension benefits. The main reason for such low receiving rate is the strict vesting or eligibility requirement. Studies show that about 80% of the workers work in small and medium-size companies whose average lifespan is less than 13 years. Thus, the new pension law is designed to overcome the problems of old pension system and has been effective on July 1, 2005. This new Labor Pension Act will dramatically change the existing system by the protection of employee and the obligation of employer.

#### D、 Labor Pension Plan –New scheme (the Labor Retirement Pension Act)

1. plan type: portable defined contribution plan
  - ✧ for companies less than 200 workers, employee need to open an individual pension fund account managed by the Bureau of Labor Insurance

- ◇ for companies more than 200 workers with their 50% consensus, employer can choose to provide pension plan by buying annuity insurance policy instead of offering individual pension fund accounts
- 2. contribution:
  - ◇ employer contribution: at least 6% of monthly salary
  - ◇ voluntary employee contribution: 1-6% of monthly salary (contribution is tax-deductible)
- 3. funding situation: a single fund managed by government with guaranteed minimum return of 2-year time deposit interest rate
- 4. eligibility to withdraw pension benefit: attain age of 60
- 5. pension benefits:
  - ◇ a lump-sum payment if the worker has participated the system for less than 15 years;
  - ◇ annuity option is also available for workers having participated the system for more than 15 years
- 6. retirement income replacement ratio: depends on investment return of individual account

E、Public Service Pension Plan for public service employees:

1. plan type: defined benefit plan
2. contribution: 8-12% of monthly basic salary (35% of contribution from employee and 65% from the government)

3. funding situation: a pension reserve fund with average return 8% in for the past 10 years
4. eligibility to receive pension: at least work 5 years with age of 60; or work more than 25 years
5. pension benefit:
  - ✧ a lump-sum payment calculated by basic retirement salary and year of service (pay 1.5 months salary per year of service with cap of 53 months) if work less than 15 years
  - ✧ annuity option calculated at 2% per year of service with cap of 70% of basic monthly salary is available if work more than 15 years
  - ✧ other mixed options (combinations of lump-sum and annuity payment) are also available.
6. retirement income replacement ratio: about 60-70% for annuity option (assume 4% interest rate and no inflation)

### **3. Overall Replacement Rate**

The definition of replacement rate is the ratio of an individual's (or a given population's) average pension in a given time period to his/her average retirement salary. The replacement rate provides a means of measuring what a person earned prior to retirement and what they should expect to have as pension income post retirement. Workers on average earnings in OECD countries can generally expect their post tax pension income to be about 70% of earnings.

In Taiwan, the replacement rates of pension systems are much lower than OECD countries, especially for labor workers. Table 3 shows the overall replacement rate under two major pension systems in Taiwan.

Table3 Replacement Ratios of pension systems in Taiwan

Civil Service Employee	Employer pension	Lump-sum payment	Male	24.6
			Female	23.0
		Annuity	Male	71.4
			Female	72.0
	Social insurance	Male		19.7
		Female		18.4
Labor Worker	Employer pension	Male		24.6
		Female		23.0
	Social insurance	Male		24.6
		Female		23.0

Note: Replacement Rate= average pension income / average salary at retirement  
Interest rate =4%

Source: Jennifer Wang (2005), Analysis of Pension Replacement Ratio in Taiwan

For labor workers, if interest rate is 4 percent, the replacement rate is 24.6 percent for male and 23 percent for female under either social insurance or old employer pension plan. Thus, the total replacement rate for labor is about 40-50 percent. However, as mentioned above, most labors can not receive the employer pension benefit due to strict eligibility requirement. A major purpose of the introduction of the new labor pension scheme is to increase the receiving rate for labor workers.

For Civil Service Employees, if interest rate is 4 percent, under social insurance, the replacement rate is 19.7 percent for male and 18.4 percent for female. In addition,

under employer pension plan, the replacement rate is 24.6 percent for male and 23 percent for female if he/she receives a lump-sum payment. On the other hand, if the employees choose annuity payment instead the replacement rate is 71.4 percent for male and 72 percent for female. Thus, under two pillars, the total replacement rate for civil service employees receiving lump-sum payments is about 45-50 percent. For those who choose annuity payment, the total replacement rate can go up to more than 90 percent.

In sum, the continued aging of the population shows a head of further reform in the pension systems in Taiwan. The future bankruptcy problems of most defined benefit pension funds in Taiwan are still far from proof. In the meantime, the trend that private pension plans move from defined benefit to defined contribution implies greater risk for employees. The responsibility for retirement income security is transferred from employers to the plan participants. In particular, the total retirement benefits are insufficient for most labor workers in Taiwan. To ensure better future retirement income security, it is critically to resolve the current undermined problems of both defined benefit and defined contribution plans and to create a more positive environment for the pension system.

## **IV. Impacts of Pension Fund Investment on Financial**

### **Market**

One implication of the aging of population is the increased demand for professional fund management service from pension funds and retirement saving



products. The growing pension sector is expected to play a more important role of capital market intermediation. Professional portfolio managers, in turns, have an important influence on capital markets structure through investment and trading strategies. In addition, retirement saving products, such as annuity and life-cycle fund, become more popular in the individual retirement saving market.

### 1. Pension Fund Asset Allocation and Capital Market

Investment asset allocation is very essential to a pension fund since it has significant impact on investment return. Table 4 shows the asset allocation of pension funds in some developed countries. From Table 4, we can see that pension funds typically allocate most assets to equity and bonds. Figure 2-4 show the asset allocation of Labor Insurance Fund, Labor Pension Fund and Public Service Pension Fund in 2004 in Taiwan. We can find that, the pension asset allocation in Taiwan tend to favor conservative assets, such as bank deposits and short-term bills, more than in other countries. For example, stock holdings only account for around 20 percent of pension fund, which is far less than the average stock holdings 40-60 percent of pension fund in developed countries. In addition, bond holdings account for less than 10 percent, which is also far less than 40-50 percent in developed countries.

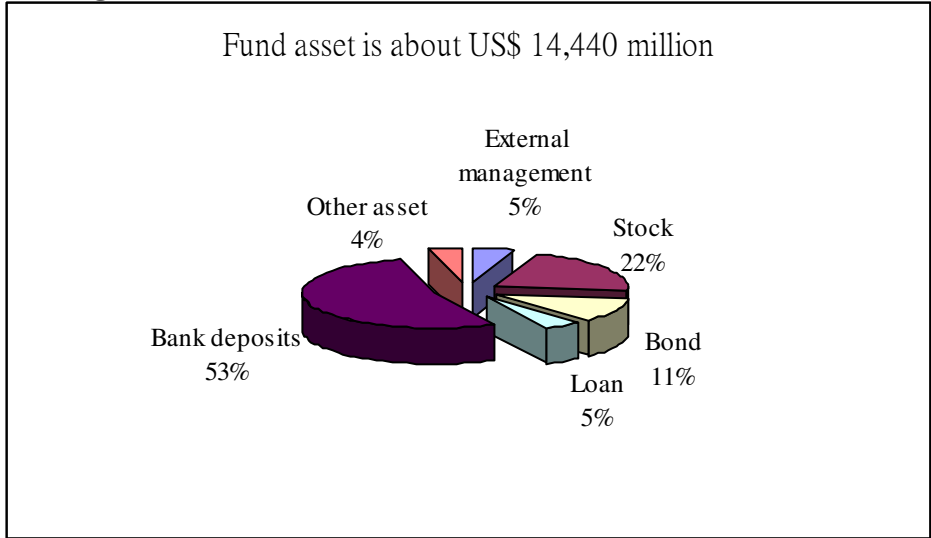
Table 4 Pension Fund Asset Allocation (1985-1997)

Unit: %

	Domestic Stock	International Stock	Real Estate	Bank Deposits	Domestic Bond	International Bond
Germany	10	1	12	8	67	2
Japan	24	5	3	5	54	9
Hong-Kong	27	47	0	6	3	16
Australia	39	18	7	9	21	6
U.S.A	49	3	2	12	33	1
U.K.	56	21	7	4	9	3

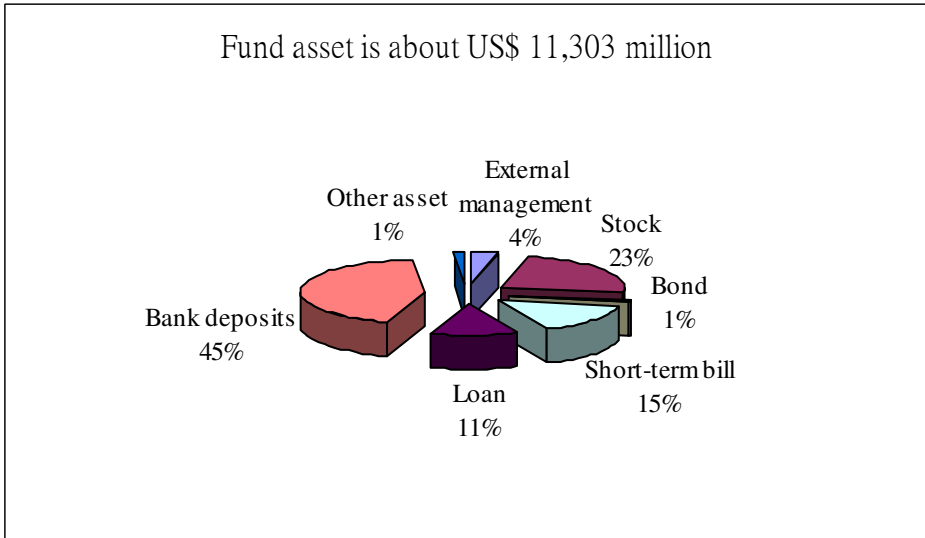
Source: Davis Philip (2003)

**Figure 2 Asset Allocation of Labor Insurance Fund in 2004**



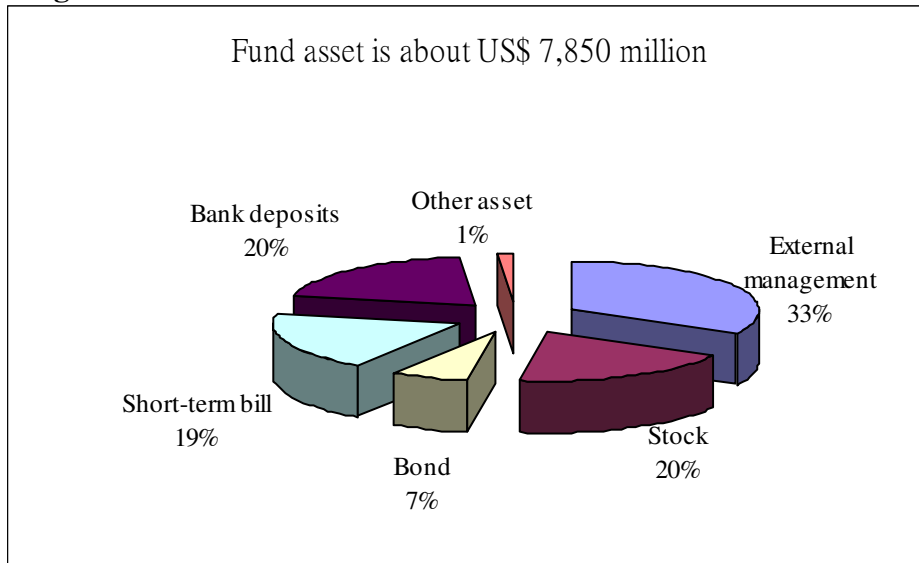
Source: Annual statistic report of Labor Insurance Fund in Taiwan,  
<http://www.bli.gov.tw/>

**Figure 3 Asset Allocation of Labor Pension Fund in 2004**



Source: Annual statistic report of Labor Pension Fund in Taiwan,  
<http://www.bli.gov.tw/>

**Figure 4 Asset Allocation of Public Service Pension Fund in 2004**



Source: Annual statistic report of Public Service Pension Fund in Taiwan,  
<http://www.fund.gov.tw/>

It is worth noting that there is an increasing demand for external pension fund management market from pension fund in Taiwan. In 2001, the Public Service Pension Fund started to implement its external pension fund management strategy. Table 5 shows percentage of external fund management of each pension fund in Taiwan from 2001 to 2004. The external fund management of three major pension funds currently generates US\$6.35 billion for the capital market, which represent 60-70% of total external pension fund management market in Taiwan. More further, after 2005, the new labor pension scheme will generate US\$4.76 billion per year (1.5% of GDP), which a substantial part might be operated by external fund management. In this scale, the pension fund is estimated to generate US\$92.06 billion in the first 20 years and will become the biggest pension fund in Taiwan.

**Table 5 Percentage of External Fund Management of Pension Fund in Taiwan**

Year	Labor Pension Fund	Labor Pension Insurance Fund	Public Service Pension Fund
2001	0.00	2.88	10.47
2002	3.95	5.58	14.21
2003	3.73	3.04	33.04
2004	6.03	5.05	20.26

## **2. Annuity Market**

Annuity is an important financial contract between individual and insurance company. It is designed to provide the age as source of retirement income. , Annuity can be widely considered as a perfect tool to protect the longevity risk. Thus, for the past 20 years, there has been a very significant growth of demand for as saving around the world. However, in Taiwan, the demand for annuity was relatively small in the past years. But it began to pick up in recent years.

Table 6 indicates the first-year premium of life insurance in Taiwan. There is significant increase of annuity market share after 2001. Figure 5-6 shows the market share of first-year insurance premium in 2003 and 2004 in Taiwan. In 2003, the market share of annuity premium represents about 21 percent of total insurance premium. In 2004, the market share of annuity premium increases to 34 percent of total insurance premium. Figure 7 shows the growth rate of first-year insurance annuity premium from 2001 to 2004 in Taiwan. There is a huge growth of annuity market in past five years.

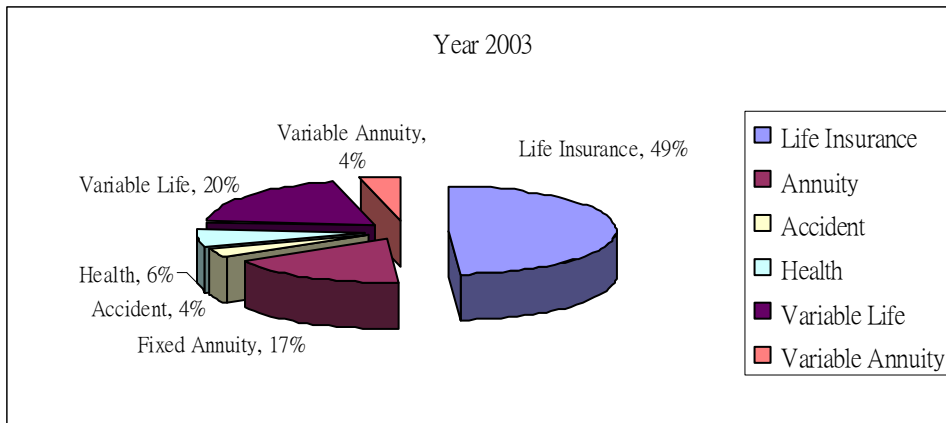
In addition, under the new Labor Pension Scheme, the employee working in the company with more than 200 workers can choose to buy an annuity contract instead of joining the individual retirement scheme. Thus, it is expected that there will be a significant growth of group annuity market in the future.

Table 6 First-Year Premium of Life Insurance in Taiwan

First-Year Premium of Life Insurance in Taiwan (US\$ Million)								
Year	Life		Accident		Health		Annuity	
	First Year	Growth %	First Year	Growth %	First Year	Growth %	First Year	Growth %
1998	2,952		546		529		11	
1999	2,881	-2%	495	-9%	655	24%	23	116%
2000	3,165	10%	523	6%	840	28%	15	-36%
2001	4,129	30%	519	-1%	802	-5%	119	697%
2002	6,762	64%	456	-12%	707	-12%	398	235%
2003	7,443	10%	477	4%	654	-7%	2,307	479%
2004	8,214	10%	386	-19%	642	-2%	4,856	110%

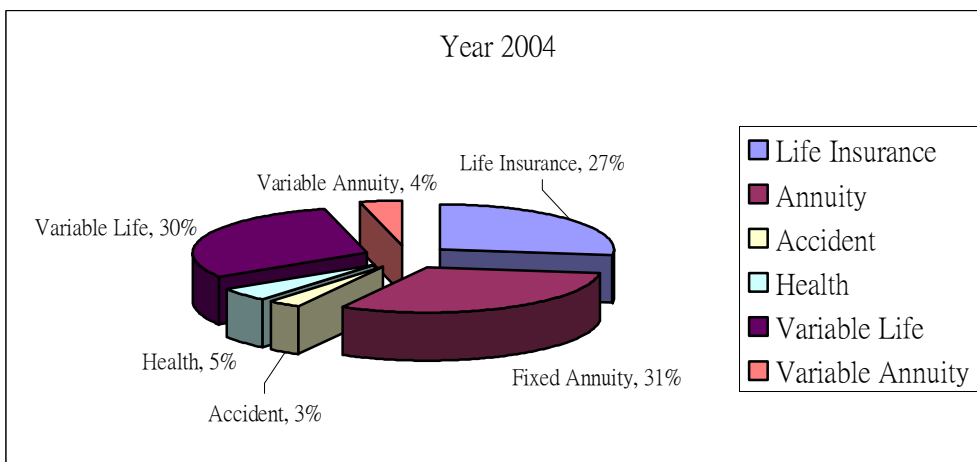
Source: Annual Statistic Report of Life Insurance, P.42-43

**Figure 5 Market Share of first-year Insurance Premium in 2003**



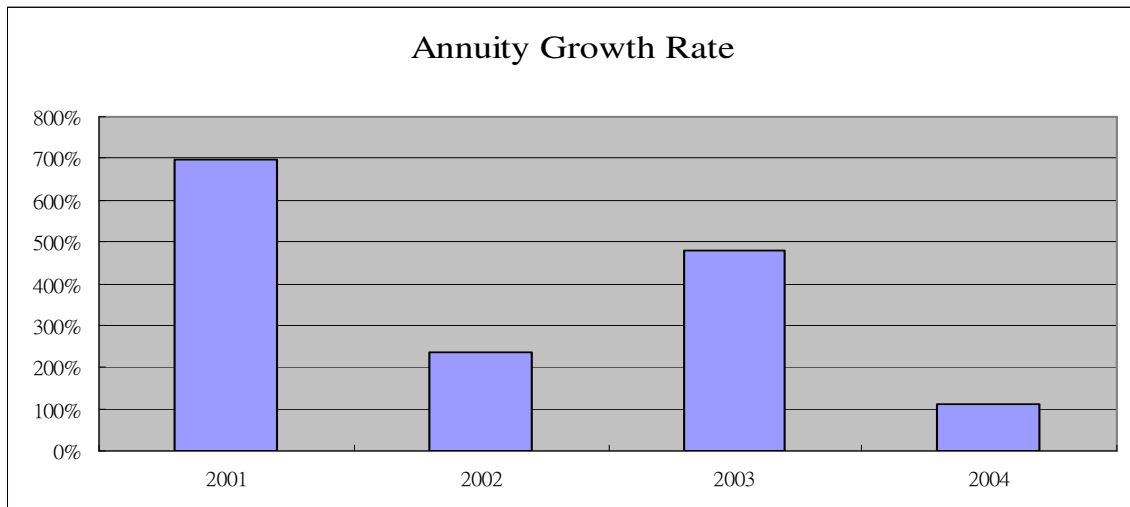
Source: Market profile of life insurance in 2004, P.13

**Figure 6 Market Share of first-year Insurance Premium in 2004**



Source: Market profile of life insurance in 2004, P.13

**Figure 7 Growth Rate of Annuity first-year premium**



Source: Annual Statistic Report of Life Insurance, P.42-43

## **V. Conclusion and Challenge of Taiwan Pension System**

Although the recent of labor pension reform and the rapid growth of retirement assets will help Taiwan government to handle the problems related to population aging, there are a number of challenges that need to be overcome in the future. The key issues and challenges can be summarized as following:

1. There is still lack of stable income from social insurance to protect longevity risk.
2. The serious insolvency problems of defined benefit pension funds could last for a while to be solved.
3. There is lack of appropriate investment products for pension funds in local financial market.

4. Low investment return of defined contribution pension fund caused by guaranteed rate from fund operation still needs to improve after the necessary amendment of regulations.
5. There is an imbalance retirement income structure with very low replacement ratio for labor workers and very high replacement ratio for public service employees.
6. There are not enough tax-incentives to encourage more personal retirement savings for general public.

To ensure individuals with sufficient retirement income security, it is critically important to resolve the current undermined problems of both defined benefit and contribution plans and create a more secured environment for the pension system. In addition, continuous attention needs to be paid to the evolution of market practices so as to ensure the supervisory measures are adapted well to the realities of the marketplace. The feasible solutions to overcome the above key challenges can be summarized as following:

1. To implement National Annuity Pension Plan for social insurance benefit to protect longevity risk
2. To improve the investment return of pension fund by allocating more weight of allocation to stock and bond in order to overcome insolvency problems of defined benefit pension funds
3. To encourage more innovative financial products to be issued in the capital market. Especially, from asset liability management point of view, the government and

financial institutions should try to issue more long-term bonds or fix-income assets in order to provide appropriate pension funding vehicles.

4. To enhance the investment return of defined contribution pension fund by expanding the scope of portfolio tools.
5. To provide more retirement benefit to labor works in order to balance retirement income structure.
6. To provide better tax-incentives to encourage more personal savings. For example, increase the amount of tax-exemption for buying annuity or other retirement saving products.



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