

出國報告（出國類別：考察）

全球專業退休基金管理顧問機構 實務研究考察報告

服務機關：公務人員退休撫卹基金監理委員會

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派赴國家：香港

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內容摘要

近來退撫基金逐步提高委託經營比重，且國外投資範圍亦發廣泛多元，投資工具更是日新月異，本會同仁實有必要提升國外投資業務監管能力。鑑於韜睿惠悅企管顧問公司於退休基金管理領域之專精，爰前往香港拜會，並參與該公司舉辦之年度論壇，探討過去幾年全球退休金市場資產規模及其配置之變動與退休金制度之變化，並針對近期及未來全球退休金市場關注之議題，諸如經理人績效及其研究、全球經濟前景與金融市場趨勢、退休金投資治理等課題進行意見交流，冀能吸取該公司寶貴經驗，俾供本會監理業務之參考。

韜睿惠悅在 2010 年所做的退休金市場調查結果顯示，儘管金融海嘯造成金融資產巨幅減損，資金一度流向安全的避風港，然而當市場反彈，投資人信心回升，資金隨即回流股票市場，股票仍為多數退休金市場核心資產。2009 年年底全球退休金資產規模較 2008 年上升 15 個百分點，惟金融海嘯受創甚深，整體規模仍低於 2007 年水準。此外，過去 10 年確定提撥制退休金市場成長迅速，資產規模佔整體市場比例逐年提高，儼然成為退休金市場主流。

受 2008 年全球金融海嘯影響，退休金市場開始意識到風險管理及投資治理的重要性，並思考在不穩定的投資環境下如何有效進行資產配置，運用動態策略性資產配置增加報酬、降低風險。對於經理人選任，韜睿惠悅強調不能只看過往績效，必須參考各項質化及量化數據，找尋具備數項特質之優秀經理人，方能為退休基金賺取良好且穩定之報酬。

目前全球退休基金面對不斷提高的給付壓力及未來大量的現金流出，實有必要進行退休制度相關改革，亦應重新檢視及檢討資產配置策略。另為避免系統性風險對整體基金造成過大之傷害，退休基金應考量在不增加成本及風險下，將另類投資納入資產組合之可行性，以增加基金投資運用之靈活性。在經歷金融海嘯之黑天鵝事件後，退休基金應強化風險控管能力，或可考量透過風險預算方式來進行經理人最適配置，進而達成有效控制風險之目標。

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壹、考察目的

韜睿惠悅公司為一家全球領先之專業顧問服務公司，協助企業透過有效之人才、財務和風險管理方案，提升營運績效，並在員工福利規劃、人才與獎酬方案、風險和資本管理等方面提供解決之道，再者，該公司於退休基金管理領域十分專精，曾為勞退、勞保等政府基金提供專業顧問服務。

近來，退撫基金於資產配置上逐步提高委外代操之比重，且國外委託之投資範圍愈來愈廣泛，現存有效委託契約之類型有國際指數股票型、國際股票型、國際債券型、亞太股票型，又國外投資工具之變化更是日新月異；本會同仁實有提升國外投資業務監管能力之必要性。

鑒於韜睿惠悅公司於退休基金管理領域之專精，且為提升本會國外投資業務監管方面之專業能力，爰規劃參訪韜睿惠悅投資顧問香港有限公司，並參與該公司所舉辦之年度「觀點交流論壇 Ideas Exchange」—「以『展望 2020』為題，透過個案研究，為機構投資者及監管機關分析未來各種新的投資難題」，冀能吸取該公司於退休基金管理方面之寶貴經驗，俾供本會未來監理工作之參考。

貳、行程安排

本次係於 99 年 9 月 13 日至 9 月 15 日前往香港拜會韜睿惠悅企管顧問公司 (Towers Watson) 及參與該公司舉辦之年度論壇，相關行程、討論議題及會面人員詳如表 1：

表 1 參訪行程、討論議題及會面人員

日期	行程	會面人員
9/13(一)	參訪韜睿惠悅(Towers Watson)，討論： 1) 韜睿惠悅 2010 年全球退休金市場調查研究 2) 全球投資最新趨勢及動態策略性資產配置	<ul style="list-style-type: none"> ◆ Naomi Denning, Managing Director, Investment Services, Asia Pacific ◆ Rene Pang, Consultant ◆ Peter Ryan-Kane, Head of Portfolio Advisory, Asia Pacific ◆ Stephen Tong
9/14(二)	參訪韜睿惠悅(Towers Watson)，討論： 1) 經理人研究 2) 投資治理	<ul style="list-style-type: none"> ◆ Janet Li, Director, Investment Services, Taiwan ◆ Mark Brugner, Head of Managers Research, Asia Pacific ◆ Yvonne Sin, Director, Investment Services, China ◆ Naomi Denning, Managing Director, Investment Services, Asia Pacific ◆ Stephen Tong

日期	行程	會面人員
9/15(三)	參加論壇「展望 2020」，討論議題： 1) 未來十年退休金市場的六大挑戰 2) 退休基金長短期投資及動態資產配置策略 3) 現今全球退休基金面臨的重大挑戰 4) 如何因應長壽風險 5) 退休基金之治理	<ul style="list-style-type: none"> ◆ Naomi Denning, Managing Director, Investment Services, Asia Pacific ◆ Yvonne Sin, Director, Investment Services, China ◆ Janet Li, Director, Investment Services, Taiwan ◆ Rene Pang, Consultant ◆ Stephen Tong

參、參訪機構及個人簡介

一、韜睿惠悅企管顧問公司 (Towers Watson)

韜睿惠悅為一家全球專業顧問服務公司，前身為韜睿(Towers Perrin)與華信惠悅(Watson Wyatt)兩家顧問公司，上述兩家公司業於 2010 年 1 月正式完成合併，目前全球約 14,000 名員工。

韜睿惠悅協助企業透過有效的人才、財務和風險管理方案，提升營運績效，並提供薪酬制度規劃 (Compensation)、人才資產策略 (Human Capital Strategies)、組織效能 (Organization Effectiveness)、科技化人才資產管理 (Technology Solutions)、溝通諮詢 (Communication)、成本控制 (Cost Control)、團體及醫療保健福利 (Group Benefits & Health Care)、保險與金融服務 (Insurance & Financial Services)、投資諮詢 (Investment Consulting)、退休金管理 (Pension Administration)、退休 (Retirement)精算與諮詢等專業服務。

韜睿惠悅在香港計有 19 位投資研究人員，主要服務香港、中國大陸、台灣及部分亞太市場，其研究團隊可分為以下幾個專業領域：顧客諮詢、投資經理人研究、資產建構及投資策略研究、投資績效檢視、投資行銷及技術支援。

二、Naomi Denning：亞太地區投資顧問部門總監

Naomi Denning 女士目前擔任韜睿惠悅亞太地區投資顧問部門總監，領導韜睿惠悅亞太地區投資顧問團隊。Naomi Denning 女士於 1994 年加入華信惠悅(Watson Wyatt)，1996 年 11 月擔任香港地區投資顧問部門總監，同時也是亞太地區（包含中國）投資顧問部門總監。在移居香港前，Naomi Denning 女士在美世公司服務 5 年，從事資產管理諮詢服務。

Naomi 女士專長於資產負債模型投資策略、基金經理人研究及基金投資管理分析（如績效指標、投資管理架構、投資組合分析等）等領域。2009 年 5 月，Naomi 女士被亞洲

投資人雜誌評選為亞洲資產管理前 25 大最具影響力人物。

三、Yvonne Sin，冼懿敏：中國地區投資顧問部門總經理

冼懿敏女士為韜睿惠悅中國雇員福利及精算部業務拓展總經理及中國投資顧問部門總經理。在華信惠悅及韜睿合併前，冼總經理在華信惠悅擔任同樣的職位，1993 年加入世界銀行，擔任世界銀行社會保障部旗下的全球退休金部總監，在 2007 年 2 月再次加入華信惠悅。

冼總經理專長於社會保險及雇員福利問題，並對退休金管理及投資進行研究。作為擁有逾 30 年經驗，為各國退休金不同的注資體系開發應用金融模型的專家，冼總經理為 20 多個國家提供過社會保障政策方面的技術諮詢，為不同地區的社會保障改革和公務機構改革做出很大的貢獻。目前應南京財經大學的公共管理學院邀請，擔任該學院的客座教授，同時還是北京大學中國保險和社會保障研究所聘請的研究員，教授退休金、保險及人力資源等課題。

冼總經理畢業於多倫多大學，獲數學科學學士學位，之後又完成了世界銀行退休金進修課程，並為北美精算協會、加拿大精算協會、美國精算學會、國際精算師協會及香港精算師協會的會員。

四、Janet Li，李子恩：台灣投資顧問部總經理暨首席顧問

Janet Li 是韜睿惠悅台灣投資顧問部總經理暨首席顧問，於 2001 年 9 月加入韜睿惠悅投資顧問香港有限公司。她參與各方面之投資諮詢，包括投資策略、經理人之架構、經理人選擇及投資組合之監控，尤其專精於基金治理，並為亞太地區之領導者。

Janet Li 亦參與韜睿惠悅於大中華地區投資事業之開發，特別是台灣地區投資業務。身為投資顧問，她為客戶提供全方位投資諮詢服務，及創新的解決方案。客戶範圍甚廣，包含主權基金、養老基金、退休基金、校產基金及企業準備金等，並積極提供基金受託人及成員之教育服務。

Janet Li 取得香港大學經濟及財務金融學士學位，並為特許財務分析師（Chartered Financial Analyst，以下簡稱 CFA）資格持有人。

五、Mark H. Brugner：亞洲區經理人研究團隊主管

Mark H. Brugner 為韜睿惠悅全球經理人研究團隊成員之一，且為亞洲區經理人研究團隊之領導；在華信惠悅與韜睿諮詢公司合併前，他在華信惠悅亦擔任同樣的職位。

Mark H. Brugner 在 2008 年 10 月加入華信惠悅，業務範圍主要於香港；其研究著重於大中華股票，亦為新興市場以及亞太地區（日本除外）股票研究團隊成員之一。他曾針對奧地利機構經理人進行研究，亦曾由一家奧地利銀行之風險控管中獲得經驗。

Mark H. Brugner 已註冊於香港證券及期貨監察委員會，身為第 4 類管制活動之持牌負責人員，就證券提供意見。

六、Rena Pang：香港及台灣地區投資顧問

Rena Pang 是韜睿惠悅的投資顧問，於 2007 年 8 月加入華信惠悅香港公司。

Rena Pang 主要為香港及台灣地區客戶提供投資組合之諮詢建議服務，包括提供投資目標、策略、經理人選擇以及績效監控服務。此外，她也設計確定提撥制度（Defined Contribution Plan，以下簡稱 DC）之投資架構、檢視和選擇投資經理人，並積極為投資委員會和確定提撥制（DC）成員提供訓練。Rena 亦參與東南亞地區新客戶開發，並研究各種投資議題。

Rena Pang 取得賓州州立大學之金融理學士學位。擁有優秀的語言能力，英文、普通話和粵語等均十分流利，目前正在攻讀 CFA 資格；加入華信惠悅之前，她曾擔任過美國西門子財務分析師。

肆、參訪主題

一、韜睿惠悅 2010 年全球退休金市場調查研究

本次研究分為兩大研究對象：13 個國家（或地區）的退休金市場（以下簡稱【P13】）及 7 個資產規模較大的退休金市場（以下簡稱【P7】）。

【P13】

韜睿惠悅以 13 個國家（或地區）的退休金市場（澳洲、巴西、加拿大、法國、德國、香港、愛爾蘭、日本、荷蘭、南非、瑞士、英國、美國）為研究對象。上述國家（或地區）的退休金資產規模估計達 23 兆 2,900 億美元，佔總國民生產毛額（以下簡稱 GDP）70% 以上，韜睿惠悅針對其退休金資產規模、成長速度、資產負債規模之比較，及退休金資產佔該國 GDP 等項目，進行調查研究。本次首度納入巴西及南非 2 個國家，研究範疇因此跨足至各大洲。

【P7】

韜睿惠悅剔除 6 個資產規模較小的退休金市場（巴西、法國、德國、愛爾蘭、香港、南非），針對規模較大的 7 國（澳洲、加拿大、日本、荷蘭、瑞士、英國、美國）進行調查，研究其退休金資產配置、確定給付制（Defined Benefit Plan，以下簡稱 DB）及確定提撥制（DC）佔資產規模之比率等項目。以下分別就各研究項目及其結果進行說明：

（一）主要發現

1. 【P13】調查研究結果

2009 年年底，13 個退休金市場的資產規模達 23 兆 2,900 億美元，較 2008 年年底資產規模上升了 15 個百分點，儘管 2009 年各國退休金資產均有增加，整體資產規模仍低於 2007 年水準，且其資產規模佔 GDP 比率倒退至 2003 年水準。

最大的退休金市場分別為美國、日本及英國，然而過去十年間，美日英三國人口成長速度不及其他國家，退休金資產佔全球退休金資產比例正逐漸下滑。本次研

究納入巴西及南非，係因近年兩國退休金資產快速增加，已晉升至全球前 13 大退休金市場之列。

目前退休金市場面對金融危機的幾個重要議題如下：流動性風險管理、信用風險管理、資產經理人績效，以及資產配置策略下的新挑戰。

2. 【P7】 調查研究結果

以 2009 年底數據來看，過去 10 年確定提撥制（DC）的退休金資產規模每年平均成長 6.4%，相較之下，確定給付制（DB）資產規模成長速度較緩，每年僅成長 1.6%。1999 年，確定提撥制的資產規模僅佔整體退休金的 32%，2004 年佔 40%，至 2009 年，比例已提升至 42%，而澳洲、瑞士及美國的退休金市場以確定提撥制為大宗，日本幾乎是確定給付制的國家。以荷蘭為例，確定給付制雖為主流，卻有逐漸傾向確定提撥制的趨勢。這次調查研究，僅加拿大為過去 10 年間確定提撥制資產較確定給付制資產下滑的國家，推測可能係因法令對退休準備金的規定，導致確定給付制較確定提撥制穩定發展之因素。

資產配置方面，2009 年年底 7 國退休金資產主要配置 54.4%於權益證券，26.9%配置於債券，1.3%於約當現金及 17.4%於其他資產（如不動產及另類資產）。美國、英國及澳洲的風險性資產配置比例較高，至於荷蘭、瑞士及日本因投資策略較為保守，因此資產配置於債券比例較高，股票比例較低。

此外，2009 年各國退休金資產配置於股票部位由 2008 年的 48%提高至 54.4%，主要係因股票市場反彈，投資人信心提升之故。

Global Pension Asset Study 2010

Key Findings - Figures

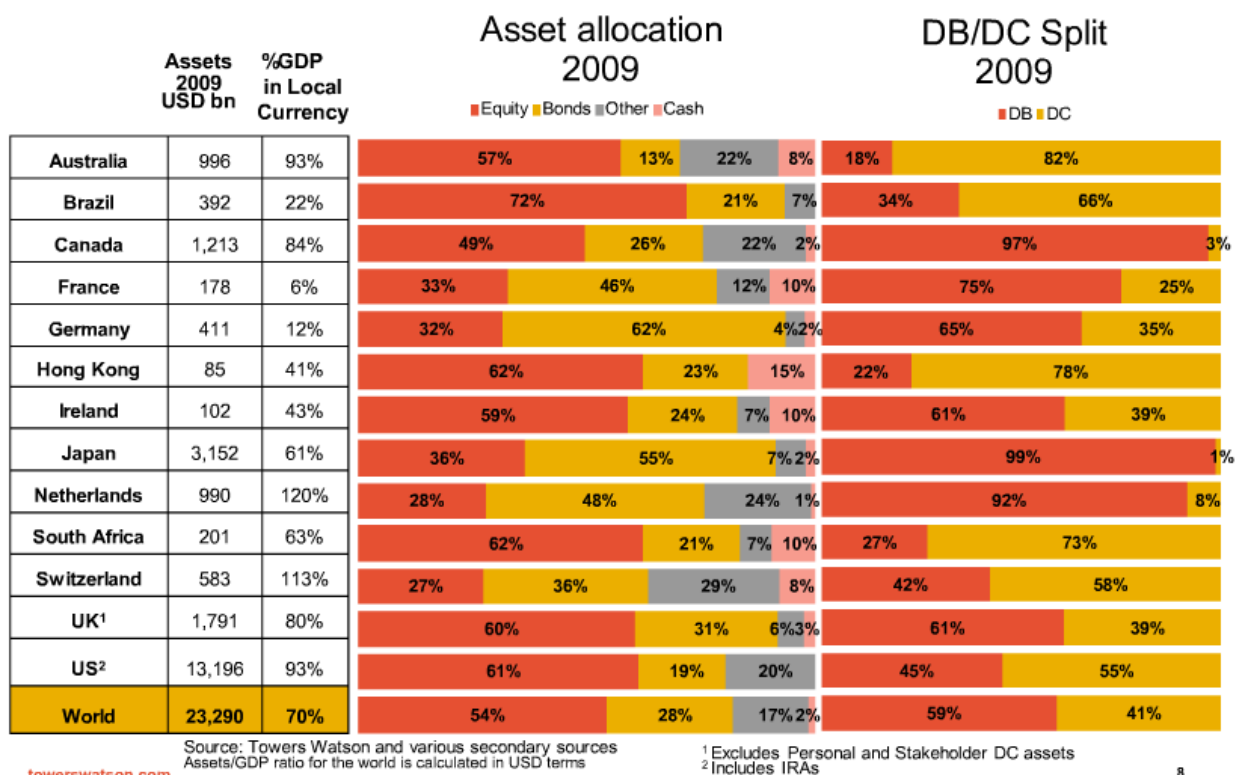


圖 1 韜睿惠悅 2010 年全球退休金調查研究主要發現

(二) 對退休基金發展具影響力的 6 項因子

1. 監理的改善

在金融風暴之後，對風險管理的重視提高，基金監控及治理程度亦有所改善，對於退休基金投資長（Chief Investment Officer, CIO）的重視程度也有提高的趨勢。

2. 金融商品增加

金融商品的專業化，讓委託經營的投資風格、範圍等類型更加多元廣泛，受到金融風暴投資出現大幅虧損的影響，退休金計畫的成員開始對基金投資的透明度提出更高的要求。

3. 退休制度朝確定提撥制（DC）發展

由於確定提撥制多屬個人自選投資組合，財務風險轉移至退休金計畫成員身上，降低雇主負擔成本的不確定性，對雇主較為有利，使得確定提撥制逐漸成為全

球退休金市場的主流。

4. 組織架構重組

針對組織內部管理層級、專業分工或全球人力資源等方面進行架構重組，期使決策過程更有效率。

5. 延攬優秀人才

儘管金融風暴使得退休基金降低了短期人力市場的需求，但對於延攬優秀人才，特別是高階主管（如投資長等）的情形仍非常激烈。

6. 新的產業鏈

退休金對於支付予資產管理公司及專業諮詢顧問公司的管理費與諮詢費，已有更好的計價方式，並開始揚棄過去按績效計費的方式，改採對基金較有利的計價方式。

（三）目前退休基金關注的 6 大議題

韜睿惠悅指出，目前全球退休金市場關注的重要議題分為 6 項：基金償付能力、風險管理、風險預算及策略、退休福利及利害關係人、經理人績效、確定提撥制的風險管理。相關說明詳如表 2：

表 2 退休基金近期重要議題

近期重要議題及說明		2010 年應注意的是...
1、基金償付能力	償付能力惡化，引發退休基金破產機率，增加調整基金投資策略的壓力	修正退休金計畫，包含提撥率、資產及投資方向等部分
2、風險管理	對風險的重視程度增加，且對極端事件的關注提高，更加重視信用風險及流動性風險這兩部分的風險管理	對風險本身及風險管理流程的意識及重視程度增加
3、風險預算及策略	思考投資工具（股票、債券等）相關性及波動性提高後，如何分散投資，並重新檢視資產配置，試圖調整配置及投資策略	更關注避險策略的運用
4、退休福利及利害關係人	檢視未來退休金應負擔的義務對整體風險忍受度的影響	因未來累積的龐大給付壓力，退休金正逐漸由確定給付制轉向確定提撥制
5、經理人績效	在不穩定的投資市場下，經理人必須面臨達成指標績效的壓力及維持投資組合流動性的困境	主動操作的經理人將承受提升績效的強大壓力
6、確定提撥制的風險管理	更多心力放在如何達成退休金計畫參與者的期望，特別是針對退休計畫的部分	重視投資曝險及生命週期投資策略的設計

二、全球投資最新趨勢及動態策略性資產配置

(一) 對經濟前景的看法-2009 年 12 月

在 2009 年 12 月，韜睿惠悅預測未來可能的經濟狀況，依實質經濟成長率強弱及國家財政狀況好壞，分為 4 種情境。

實質經濟成長率，可用國民生產毛額（GDP）成長率、就業情形及私人需求等經濟活動加以衡量，一般而言以實質經濟成長率達 4% 為均衡點，高於 4% 即實質經濟成長率走強，低於 4% 即實質經濟成長率走弱。

國家財政狀況好壞，則是藉由直接的經濟調控工具（貨幣利率政策及財政政策）及間接的傳導機制，產生經濟效益。利用長短期借款利率、信用額度、家庭所得及匯率走勢等項目，判斷各國經濟環境係處於低迷或繁榮的階段。

2009 年 12 月時，韜睿惠悅預估全球經濟情勢：有 40% 的機率處於全球經濟成長率偏弱，但各國財政狀況仍處於控制之下的情境；25% 的機率落在經濟成長率走強且財政狀況穩健的情境；20% 的機率是在經濟成長偏弱且財政狀況不穩的情況；15% 的機率處於經濟成長走強，但財政狀況不穩定的局面。

(二) 對經濟前景的看法-2010 年 8 月

在 2010 年 8 月，韜睿惠悅則依全球經濟恢復平衡的速度、各國政策及金融市場狀況，將未來 3 至 5 年全球經濟情勢分為 6 種可能發生的情境，包含已開發國家出現高經濟成長、艱困的經濟復甦、高通貨膨脹、已開發國家發生外債危機、全球經濟成長趨緩，以及已開發國家出現通貨緊縮等，其分布情形、發生機率及相關說明詳如圖 2 及表 3：

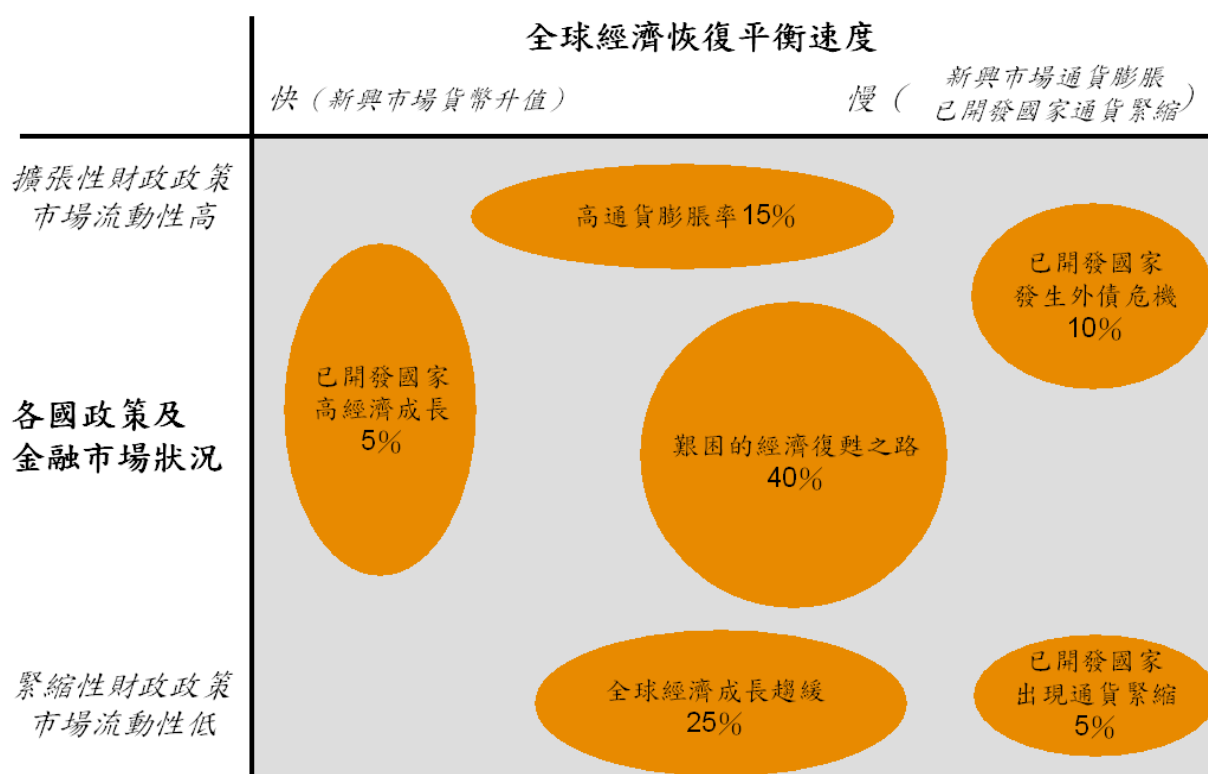


圖 2 未來 3 至 5 年全球經濟可能發生的情境分布情形

表 3 未來 3 至 5 年全球經濟可能發生的情境說明

情境	說明	發生機率
已開發國家出現高經濟成長	<ul style="list-style-type: none"> ● 新興國家貨幣升值，已開發國家相較下更具競爭力，因而改善已開發國家經濟情況，在就業情形及資金流通促使經濟好轉下，逐漸降低舉債水位。 ● 對股票、信用工具、大宗商品有利，特別是新興市場的貨幣，惟已開發國家債券市場走弱。 	5%
艱困的經濟復甦之路	<ul style="list-style-type: none"> ● 主權債券、私募債券及脆弱的金融市場將成爲已開發國家經濟成長的阻礙，不過新興國家經濟成長依舊強勁。此外投資人的風險胃納（承受風險程度）的關切範圍，已由負面衝擊造成的影響，轉爲對極端事件的關注。 	40%

情境	說明	發生機率
	<ul style="list-style-type: none"> ● 股票及信用市場報酬可期，不過波動性也會增加。政府債券市場走弱，但仍有波動。 	
高通貨膨脹率	<ul style="list-style-type: none"> ● 當政府採用擴張性貨幣政策，就必須忍受較高的通貨膨脹。部分國家甚至可能產生惡性通貨膨脹。 ● 股票及大宗商品的表現不俗，債券市場相對趨弱，此外 G4 國家（美、歐、中、日）貨幣走弱。 	15%
已開發國家發生外債危機	<ul style="list-style-type: none"> ● 公部門過度舉債引發社會對財政平衡的關切，債務危機可能導致倒帳及債務重組的情況發生。 ● 股票及大宗商品表現不佳，但已開發國家或新興國家發行的政府債券將成為資金的避風港，後勢看好。 	10%
全球經濟成長趨緩	<ul style="list-style-type: none"> ● 新興市場的需求無法抵銷已開發國家成長減緩的趨勢，以致長期全球的經濟成長可能呈現次趨勢（sub-trend）。 ● 已開發國家金融市場表現欠佳，新興市場的股票及信用市場績效可能更差，大宗商品表現一樣不佳，債券市場則表現良好。 	25%
已開發國家出現通貨緊縮	<ul style="list-style-type: none"> ● 已開發經濟體受到全球大規模財政緊縮及債券工具劇烈的去槓桿化影響，因而降低消費需求，導致經濟二次衰退及嚴重貨幣貶值。 ● 已開發國家的股票及信用市場績效欠佳，惟主權債務市場績效表現突出。 	5%

(三) 資產配置策略類型

韜睿惠悅認為退休基金資產配置策略，可依其主要目標、使用期間、涵蓋範圍及其執行方式等項目，分為以下 4 類：策略性資產配置、動態策略性資產配置、中期機會與戰略性資產配置。

表 4 資產配置策略類型

	策略性 資產配置 (Strategic Asset Allocation, SAA)	動態策略性 資產配置 (Dynamic Strategic Asset Allocation, DSAA)	中期機會 (Medium Term Opportunities, MOPS)	戰略性 資產配置 (Tactical Asset Allocation, TAA)
主要目標	達到與風險相符的報酬	增加額外報酬或降低風險	增加額外報酬及多樣性	增加額外報酬或降低風險
時間架構	長期	1 至 3 年	3 年以上	數月
涵蓋範圍	包含全部的資產類別	所有資產類別，只做多頭	所有資產類別，但僅著眼於有特定利基的資產，只做多頭	僅限流動性資產，可做多也可做空
執行方式	自行或透過受託機構及諮詢顧問公司配置資金	自行或透過諮詢顧問公司配置資金	透過機構經理人配置資金	透過機構經理人、避險基金或諮詢顧問公司配置資金
注意重點	負債情形、現金流量、資金需求、報酬及風險	風險、報酬、市場動態及策略性資產配置方向	報酬	報酬

（四）動態策略性資產配置

韜睿惠悅對於動態策略性資產配置的觀念闡述如下：

1. 時間約 1 至 3 年

-戰略性決策的雜訊太高，無法產生穩定的超額報酬。

-在修正回正常價格前，市場有可能跌得更多。

2. 治理是關鍵所在

-價格產生異常的情形非常短暫，而且很快就會回復正常價格。

-需要及時的決策及執行機制。

3. 很明顯且不常發生的機會

-現在市場上的金融資產產生價格異常的情況不會維持很久。

-必須把握任何一個利基機會。

-需要有明確的訊號，比如超出公平價格 2 倍的標準差。

4. 引發多空之爭論

-所有中期決策都應兼顧多空兩種論點。

-必須有一致性的決策架構。

三、經理人研究

（一）強大之全球經理人研究平台

韜睿惠悅致力於從事經理人研究，內部自行開發 Dream 系統，供作為質化研究之線上資料庫平台，另為強化其研究之量化數據資訊，韜睿惠悅與 eVestment 合作結盟為 eVestment Alliance 成員之一，透過 eVestment 線上量化資料庫平台，取得經理人經營績效等數據化分析，以提供其客戶質化及量化的全方位經理人研究分析，其全球經理人研究平台如圖 3 所示。

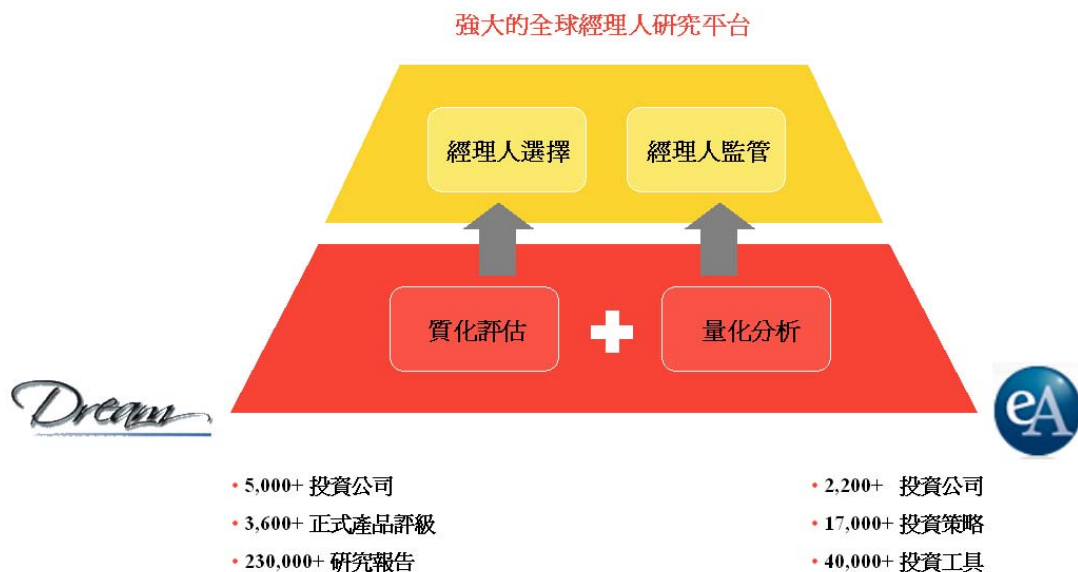


圖 3 韜睿惠悅與 eVestmet 之經理人研究平台

（二）韜睿惠悅之經理人研究哲學

1. 整體目標為找到具備持續競爭力之經理人。
2. 韜睿惠悅相信，成功的經理人具有某些重複模式或成功因子。
3. 因績效資訊中摻雜高度雜訊，故質化研究才是選擇優秀經理人之絕對關鍵。

（三）選擇經理人不能只注意過往績效

韜睿惠悅認為作經理人研究，不能僅看過往績效之量化數據，因為經驗證明「用追蹤過往績效來預估未來績效表現，成效比想像得差」；是以，韜睿惠悅十分強調經理

人之質化研究，包括經理人研究團隊之組成、異動，經理人投資風格、投資策略、投資技巧、風險偏好，經理人對市場環境之看法等等。

(四) 韜睿惠悅尋找之經理人特質

茲將韜睿惠悅認為優秀經理人應具備之特質彙整如表 5，主要分為三大面向：人員 (People)、過程 (Process)、企業 (Business)。

表 5 優秀經理人特質

三大面向	具備之特質
People 人員	Investor quality : 經理人應具備專業能力，必須找出決策領導者，帶領整體團隊具有一致之中心思想
	Focused decisions : 透過聚焦討論決定，可以避免過於主觀
	Depth of resource : 資源蒐集應具深度，善用其競爭優勢
	Collegiate culture : 保有大學生之團隊深入研究精神
	Team dynamics : 透過組成團隊方式，彼此腦力激盪、分工合作、客觀分析
	Staff turnover : 成員流動性不應過高，投資策略較能連貫並具一致性
Process 過程	Clear philosophy : 討論過程應保持明確研究理念
	Insightful research : 研究應深入精闢
	Implementing ideas : 意見想法應具體行動實現
	Process evolution : 過程進展應時常評估改善
	Risk management : 應有效執行風險控管
	Other impacts : 其他

三大面向	具備之特質
Business 企業	Long-term focus : 應訂有長期投資目標
	Investment-led : 應有能力之投資領導人，帶領團隊具向心力及一致研究哲學
	Stable structure : 應有穩定完備之研究組織架構
	Business investment : 應具備優良企業投資能力
	Growth management : 對成員前景應有完整之成長管理方案
	Aligned interests : 研究團隊成員之利益應與基金本身具一致性

韜睿惠悅認為，作經理人質化研究時，除了書面表報、相關新聞資訊、市場訊息之蒐集分析外，十分重要的是韜睿惠悅會**主動參與經理人團隊之內部開會討論**。透過參與開會討論過程，能夠清楚分析經理人之投資策略、投資風格、對市場看法、風險偏好等等，且遇有問題時，亦能直接與經理人進一步溝通了解。

有關於韜睿惠悅參與經理人內部開會討論，我們提出一個問題：「韜睿惠悅參與經理人內部討論會議時，經理人的態度如何？」，韜睿惠悅說明，其內部針對該問題作過分析並發表過文章，結論為「已開發市場經理人通常態度很開放，也很樂於分享經驗、看法，也希望從韜睿惠悅的研究中得到回饋，反觀一些較屬於新興市場之經理人，則較排斥、反感，較不願意韜睿惠悅涉入會議過深，回答較保守」，這種情況或尚須一段磨合期，韜睿惠悅表示會繼續努力溝通，使新興市場之經理人理解此等做法，其實對經理人亦有助益，經理人透過與韜睿惠悅溝通能得到回饋，或者投資大眾透過韜睿惠悅之研究報告亦能進一步了解各經理人之投資長才等等。

(五) 紅綠燈分析

韜睿惠悅為確保其觀點之一致性及客觀性，發展出一套“紅綠燈”分析方法(如下圖所示)：由各區域資深專業研究人員組成全球性之經理人管理團隊，透過成員間有

效溝通討論，來確保其研究成果之最高品質及一致性。

“紅綠燈”分析方法係透過人員（People）、過程（Process）、企業（Business）三大面向之成功因子，逐項分析經理人之優劣勢；而燈號代表意義為：

1. 紅色：表示韜睿惠悅認為經理人在此一方面有弱點。
2. 黃色：表示韜睿惠悅認為經理人在此一方面是有問題的。
3. 綠色：表示韜睿惠悅在這一方面並沒有發現重大問題或弱點。

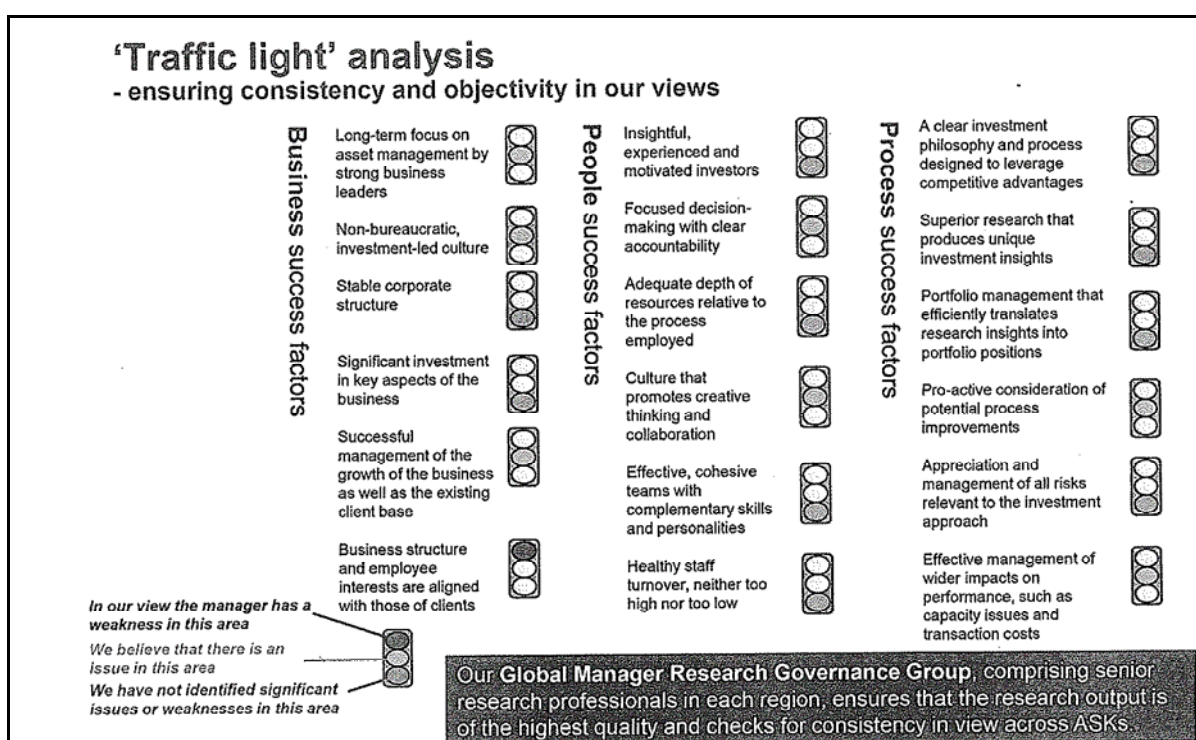


圖 4 紅綠燈分析法

四、投資治理

（一）治理及治理預算之定義

治理 = 組織協調 * 人員 * 過程

如上式所示，韜睿惠悅認為治理係由組織協調、人員、過程三大要素組合而成，而治理預算係從該治理鏈中，因有效行動而創造價值之能力。其中，三大要素之定義

為：

1. **組織協調**：係指基金架構和長遠利益應具一致性
2. **人員**：係指參與投資人員應具專業能力並承擔責任
3. **過程**：係指如何管理和執行制定投資決策

(二) 為何治理很重要？

根據韜睿惠悅研究，有效治理能大幅提升基金之績效，從「Bad(差)」到「Good(好)」可以提升 1 至 2% 收益率，而從「Good(好)」到「Great(非常好)」能提升更多收益率。謹重點摘述治理之重要性如次：

1. 透過有效治理能創造更大財富
2. 治理預算乃風險預算分配成功之重要關鍵因素
3. 投資配置應符合基金治理能力

(三) 投資治理之全球最佳實踐(Global Best Practice, GBP)

—明確任務、信念及風險預算為核心屬性

韜睿惠悅表示根據 Clark-Urwin 對治理所做研究，發現治理之最佳實踐典範所堅持之核心原則，可彙整為以下六點，其中堅強信念乃是韜睿惠悅認為有效治理之最關鍵屬性。

表 6 投資治理之 6 大核心最佳實踐因素

三大要素	6 大核心最佳實踐因素	
組織協調	1. 任務明確	任務說明書中應載明明確任務和利益關係人之承諾
	2. 有效時間聚焦	在投資過程中，根據適當預算來配置每一要素，必須考量可能產生之結果以及是否具備足夠專業能力

三大要素		6大核心最佳實踐因素
人員	3. 領導人	領導人(董事會/投資委員會等級)應為投資委員會主席，乃基金成敗之關鍵性角色
	4. 堅強信念	全部參與基金投資人員應具堅強信念且目標一致，並清楚了解所有投資決策
過程	5. 風險預算架構	參考風險預算來架構投資過程，應與設定之目標一致
	6. 合適之經理人	有效運用外部經理人協治理時，應有明確委託契約，且與基金目標一致，而選擇經理人之標準應與委託目標一致

(四) 治理須克服之困難

韜睿惠悅表示根據 Clark-Urwin 對治理所做研究，發現治理有十大困難須克服，謹摘述如表 7：

表 7 投資治理十大難題

治理十大難題	
1. 風險預算	治理預算雇用人數、時間的組合、專業度及集體主義董事會之設立等均與績效息息相關
2. 全球最佳實踐(GBP)	透過分析全球績效最優之基金投資方法和行為，可歸納出全球最佳實踐因素—圍繞著人員、過程、組織協調，可彙整成六項關鍵因素(如表 6 所示)
3. 明確任務	全球最佳實踐(GBP)首項因素為任務明確之重要性、利益關係人之承諾及任務達成之衡量
4. 雙層架構	雙層架構為全球最佳實踐(GBP)另一重要關鍵因素，位階較高之董事會為決策層級，而管理團隊為執行層級

治理十大難題	
5. 過程	全球最佳實踐(GBP)基金，在投資過程中之信念、風險預算、挑選經理人、策略抉擇之即時反應均嚴謹且明確
6. 領導者之協調能力	董事會主席應有效管理集體決策，並最適化治理預算，應使團隊成員對其協調組織能力產生信賴感
7. 領導者之風險架構能力	董事會主席應帶領團隊建立強大之風險管理架構，並透過溝通有效傳達團隊理念
8. 董事會代表團	董事會成員不論於內部團隊或外部組織上均應具代表性
9. 正視壓力，強化策略	在強大經營壓力及複雜投資條件下，基金必須宏觀地明辨機會與威脅來制定策略
10. 兼顧風險之完備系統	面對複雜投資條件，除追求報酬成長外，應兼具量化及質化之控制風險能力

五、年度論壇 Ideas Exchange Annual HK

—2020 Vision: Get Smart, Shape Up

韜睿惠悅一向致力於退休金研究，期望透過其領先之研究讓管理人能更深入了解全球機構投資環境之新趨勢；該公司於9月份，準備了一系列有關退休金投資之新知識，在香港舉辦年度「觀點交流論壇 Ideas Exchange」—「以『展望 2020 為題』，透過個案研究，為機構投資者及監管機關分析未來各種新的投資挑戰。希望與會者不但了解各種風險，更能提早做好準備，去應對未來多變之投資環境。」

韜睿惠悅認為對投資大眾而言，未來十年最重要之挑戰有六項，彙整如表 8；該次論壇主軸即圍繞此六大主題進行，透過圓桌對談方式，讓與會者進行面對面之意見交流。

表 8 未來 10 年退休基金之 6 大重要挑戰

6 大重要挑戰	
(一) 獲得風險管理和治理執行之權利：	經歷金融風暴重創各基金資產後，各基金日益重視風險管理之重要性，是以，管理階層有效執行投資治理並強化風險管理，避免系統性風險產生之重大損失，實為各基金應積極面對之重要挑戰。
(二) 在「長期策略性資產配置」和「對快速變遷投資環境有動態反應能力」之間，取得一個適當平衡；	全球金融投資環境日新月異，基金除有「長期策略性資產配置」外，面對快速變遷之投資環境，更應具有對快速變遷投資環境的動態反應能力，而如何在此兩者之間取得平衡，實為各基金應正視之問題。
(三) 處理因大幅發債而導致損失之已開發市場主權債：	近來，隨著歐債危機爆發、美國赤字嚴重仍大量發債、其他已開發市場各國亦因財務不佳而頻繁發行公債，導致原本較具安全保障特性之主權債風險性日益增高，若仍於基金資產配置上繼續大幅配置已開發國家主權債，或將導致風險出乎預期，甚至產生虧損；是以，如何有效處理此等主權債，已為各基金正面臨之挑戰。
(四) 反映將新興市場納入投資組合之重要性增強：	自全球金融危機爆發以來，新興市場復甦速度較已開發市場為快，全球投資眼光瞄準新興市場之投資潛力，是以，如何逐步增加新興市場於投資組合中之比例，實為當前各基金之重要任務。
(五) 在不增加額外複雜性和管理費比率情況下，作出有意義之另類資產配置：	為增加基金配置之靈活度，將另類資產納入投資組合中，乃為現行基金之投資趨勢，惟如何於治理預算下有效搭配人才運用，期於不增加額外過多複雜性及管理費比率情況下，作出有意義之另類資產配置，乃為各基金應審視之投資選項。

6 大重要挑戰

(六) 為成員退休後生活，制定適當之投資方案：

由於退休基金中，各成員之經濟情況不同，退休後所須之所得替代率亦相差甚遠，尤其在確定提撥制（DC）制度下，成員須自行選擇投資組合時，完備投資教育訓練非常重要，是以，如何替各成員妥善規劃適合其退休後生活之投資方案，則顯得十分重要且為必須儘速應對之課題。

伍、心得與建議

一、心得

(一) 全球退休金市場趨勢

觀察韜睿惠悅在 2010 年做的退休金市場調查結果，儘管金融風暴造成金融資產巨幅減損，資金一度流向安全的避風港，然而當景氣逐漸復甦，投資人信心回升，資金隨即回流股票市場，股票淨值增加，以致提高退休金股票配置比例。觀諸全球退休金市場，股票仍為多數退休金市場核心資產，惟基於提高報酬或分散風險考量，債券及另類資產配置比例已有增加的趨勢。

經歷 2008 年全球金融風暴後，退休基金已由過去著重於報酬，轉為報酬風險並重的概念。由於全球主要的已開發國家，如美國及歐洲地區國家的經濟尚未完全復甦，目前全球經濟走勢撲朔迷離，也使得退休基金必須思考如何在不穩定的投資環境下獲取足以支應退休給付的報酬，以及審慎思考退休金制度改革的必要性及可行性。在新興市場重要性提高且全球金融市場劇烈波動的情況下，退休基金也須修正長短期資產配置策略，重新檢視資產配置區域及類別，以達到獲取穩定報酬、風險分散之效。

（二）投資績效與風險管理

目前投資大眾選擇基金經理人或投資標的之習慣，時常僅看經理人績效表面數字，然而績效僅為過去之歷史數據，且高風險隱含高報酬，若僅看表面績效，而不深入分析其績效背後所代表之意義，對投資人而言是十分危險的事情。

歷史上，多次金融危機所造成之系統性風險均使投資人損失慘重，而攸關人民福祉之退休基金更應正視此一問題；是以，如何建置兼具質化與量化之風險管理系統，實為各大退休基金於當前日益複雜之投資環境下，除追求績效報酬成長之外，更應積極改善之任務。

（三）新興市場漸成爲焦點

有關於新興市場經理人研究方面，相較於已開發市場，由於新興市場屬於較晚受到重視之市場，尚待投資人進一步深入研究，而韜睿惠悅亦是近幾年方對新興市場經理人之研究多所著墨；是以，雖然目前韜睿惠悅從事新興市場經理人研究時，新興市場經理人對於受訪態度較保守、排斥，但相信待新興市場欲加成熟後，該區域之經理人或能對於受訪態度更爲開放，在兩方回饋機制下，相信將有助於投資大眾對新興市場經理人之了解，而更進一步帶動新興市場之成長。

二、建議

（一）資產配置

目前全球退休基金面對不斷提高的給付壓力及未來大量的現金流出，實有必要進行退休制度相關改革，亦應重新檢視及檢討資產配置策略，依據未來的經濟情勢及基金未來的現金流量，分別制訂短中長期的資產配置策略。

另爲避免系統性風險對整體基金造成過大之傷害，若從降低資產投資組合之相關性來思考，建議退休基金或可考量如何在不增加複雜性、管理成本及風險下，將另類投資納入資產組合中，增加基金投資運用之靈活性，並期藉以降低整體投資組合之相關係數，進一步達成降低系統性風險之目的。

（二）經理人選任

鑒於經理人之選擇乃為委託績效之重要關鍵因素，建議退休基金於辦理委外經營時，應重視經理人之研究，在質量並重的情況下，期能有助於達成委託預定之目標報酬。

（三）風險管理

經歷金融海嘯之黑天鵝事件後，發現若將投資比重過高程度集中於股市，則一旦發生系統性風險，將損失慘重；是以，建議退休基金應強化風險控管能力，或可考量透過風險預算方式來進行經理人最適配置，進而達成有效控制風險之目標。

陸、附錄

2010 Global Pension Asset Study

1. Asset size

Asset size and growth statistics Comparison of asset size with GDP and liabilities

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Global pension assets

Evolution 1999-2009 – USD Billion

P13

- Global pension assets to the end of 2009 were USD 23,290 bn, up more than USD 3 trn from 2008. This is a 15.1% growth in assets compared to the previous year, but not sufficient to recover the losses from 2008's financial crisis, when assets fell 21.3%.
- This growth is largely explained by the good performance of markets around the world and the high exposure of pension funds to equities.
- The largest value of pension assets are held by the US and Japan, together accounting for more than 70% of total assets, though their share has been decreasing in recent years.
- The smallest markets in descending order are Brazil, South Africa, France, Ireland and Hong Kong.

Market	Total assets (USD billion)	Total assets (USD billion)
	Year-end 1999	Year-end 2009e
Australia	271	996
Brazil	70	392
Canada	652	1,213
France	70	178
Germany	188	411
Hong Kong	23	85
Ireland	49	102
Japan	2,630	3,152
Netherlands	400	990
South Africa	76	201
Switzerland	310	583
UK ¹	1,385	1,791
US ²	10,195	13,196
Total (USD)	16,318	23,290

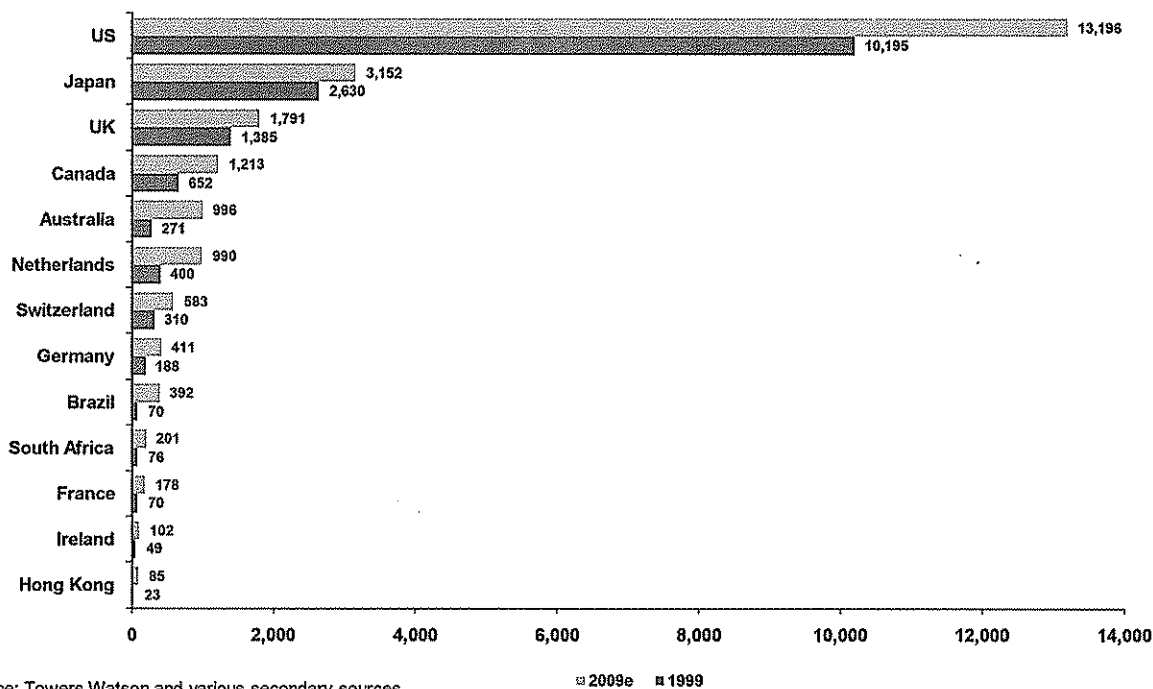
Source: Towers Watson and various secondary sources

¹Excludes Personal and Stakeholder DC assets

²Includes IRAs

Global pension assets

Evolution 1999-2009 – USD Billion



Source: Towers Watson and various secondary sources

towerswatson.com

2009e 1999

Global pension assets

Relative weights of each market

- During the past decade, pension fund assets in the US, Japan and the UK have decreased relative to other economies in the P13.
- Despite slower growth, the US, Japan and the UK remained the three largest pension markets in the world.
- Brazil is the fastest growing market of the group, followed by Hong Kong and Australia, which is now claiming the fifth place in the P13.

Country	End 1999	End 2009e
Australia	1.7%	↑ 4.3%
Brazil	0.4%	↑ 1.7%
Canada	4.0%	↑ 5.2%
France	0.4%	↑ 0.8%
Germany	1.2%	↑ 1.8%
Hong Kong	0.1%	↑ 0.4%
Ireland	0.3%	↑ 0.4%
Japan	16.1%	↓ 13.5%
Netherlands	2.5%	↑ 4.2%
South Africa	0.5%	↑ 0.9%
Switzerland	1.9%	↑ 2.5%
UK ¹	8.5%	↓ 7.7%
US ²	62.5%	↓ 56.7%
P13	100%	100%

Source: Towers Watson and various secondary sources

¹ Excludes Personal and Stakeholder DC assets

² Includes IRAs

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Global pension assets growth rates

Compound Annual Growth Rates – Local Currency – 2009e

- Annual growth rates are significantly different when comparing 2008/09 rates to those of 2007/2008. The markets' recovery in 2009 following the world financial crisis is evident. While in 2008 most of the markets suffered heavy losses, in 2009 they performed positively.
- On average, global pension assets, measured in local currency, grew by 15.6% over the last year, compared to the 10.6% fall of 2008.
- Japan's poor results in 2008 were not reversed in 2009, as pension assets there still show a negative CAGR in the last 5 years and very modest growth in the last 10 years.
- 5-year growth rates now range from – 0.9% in Japan to 19.2% in Brazil, the fastest growing market in the study.

Market	1-year (31/12/07 - 31/12/08) Actual	Growth rates to 2009e (Local Currency)		
		1-year (31/12/08 - 31/12/09)	5-year (31/12/04- 31/12/09) CAGR	10-year (31/12/99- 31/12/09) CAGR
Australia	-17.2%	8.5%	9.4%	10.4%
Brazil	-3.8%	54.3%	19.2%	18.3%
Canada	1.5%	12.7%	8.0%	3.1%
France	-6.0%	13.8%	2.6%	5.9%
Germany	1.1%	6.8%	6.7%	4.3%
Hong Kong	-8.7%	23.3%	12.9%	14.0%
Ireland	-26.7%	12.2%	2.7%	3.8%
Japan	-12.0%	6.1%	-0.9%	0.8%
Netherlands	-16.0%	14.2%	4.9%	5.6%
South Africa	0.5%	12.1%	13.0%	12.3%
Switzerland	-11.6%	12.8%	0.2%	2.0%
UK ¹	-26.5%	13.6%	4.3%	2.8%
US ²	-23.3%	12.2%	2.5%	2.6%
Average	-10.6%	15.6%	6.6%	6.6%

Source: Towers Watson and various secondary sources

¹Excludes Personal and Stakeholder DC assets
²Includes IRAs

13

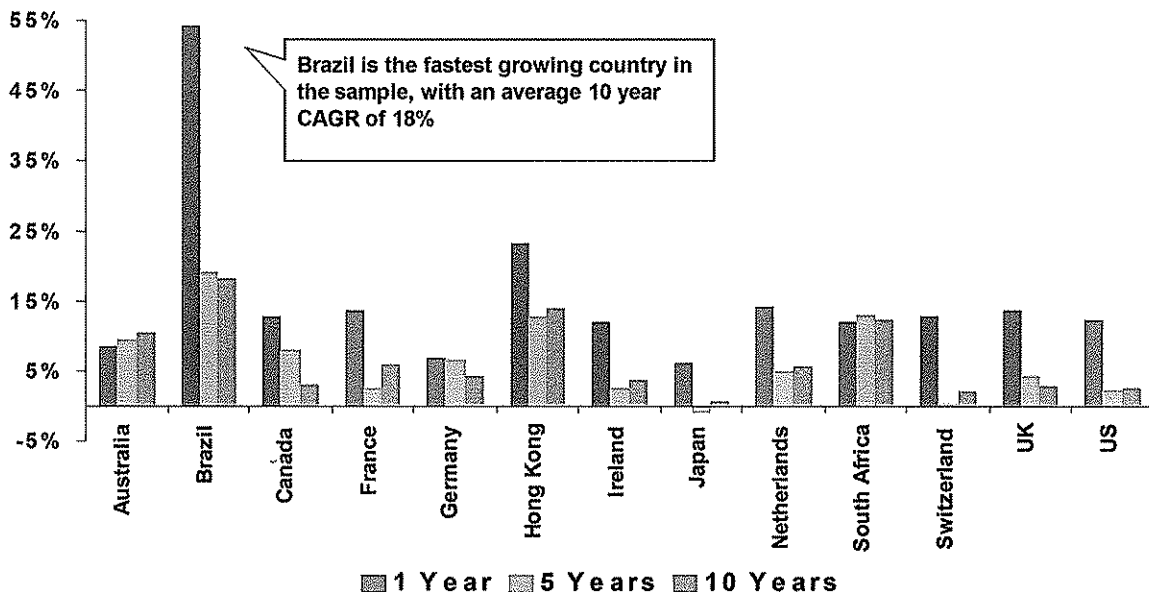
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Global pension assets growth rates

Compound Annual Growth Rates – Local Currency

2009e CAGR – Local Currency



Source: Tower Watson and various secondary sources

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Global pension assets growth rates

Compound Annual Growth Rates – USD

- In 2008 global pension funds assets decreased on average by 21.3%, however during 2009 they rose by 15.1%.
- This growth occurred in all the markets in the study, especially in Brazil, South Africa and Australia where pension assets grew by 108%, 43% and 40% respectively.
- In 2009 Japan had the lowest growth rate of 4%. This is in contrast to 2008 when it was the best performer having grown assets by 9% in USD terms, thanks to a significant currency appreciation.
- The most rapidly growing pension asset markets during the last 10 years are Brazil, Australia and Hong Kong respectively, while Japan, UK and the US have the lowest 10-year growth rates.

Market	1-year (31/12/07- 31/12/08) Actual	Growth rates to 2009e (USD)		
		1-year (31/12/08- 31/12/09)	5-year (31/12/04- 31/12/09) CARG	10-year (31/12/99- 31/12/09) CARG
Australia	-34.7%	40.3%	12.5%	13.9%
Brazil	-27.4%	108.3%	29.9%	18.8%
Canada	-10.2%	31.2%	11.0%	6.4%
France	-9.9%	15.7%	3.6%	9.8%
Germany	-3.2%	8.6%	7.7%	8.1%
Hong Kong	-8.0%	23.2%	12.9%	14.0%
Ireland	-29.8%	14.0%	3.7%	7.6%
Japan	9.4%	4.0%	1.3%	1.8%
Netherlands	-19.5%	16.2%	6.0%	9.5%
South Africa	-28.0%	42.9%	7.0%	10.3%
Switzerland	-5.6%	14.7%	1.9%	6.5%
UK ¹	-46.7%	25.0%	0.4%	2.6%
US ²	-23.3%	12.2%	2.5%	2.6%
World	-21.3%	15.1%	3.3%	3.6%

Source: Towers Watson and various secondary sources

¹ Excludes Personal and Stakeholder DC assets

² Includes IRAs

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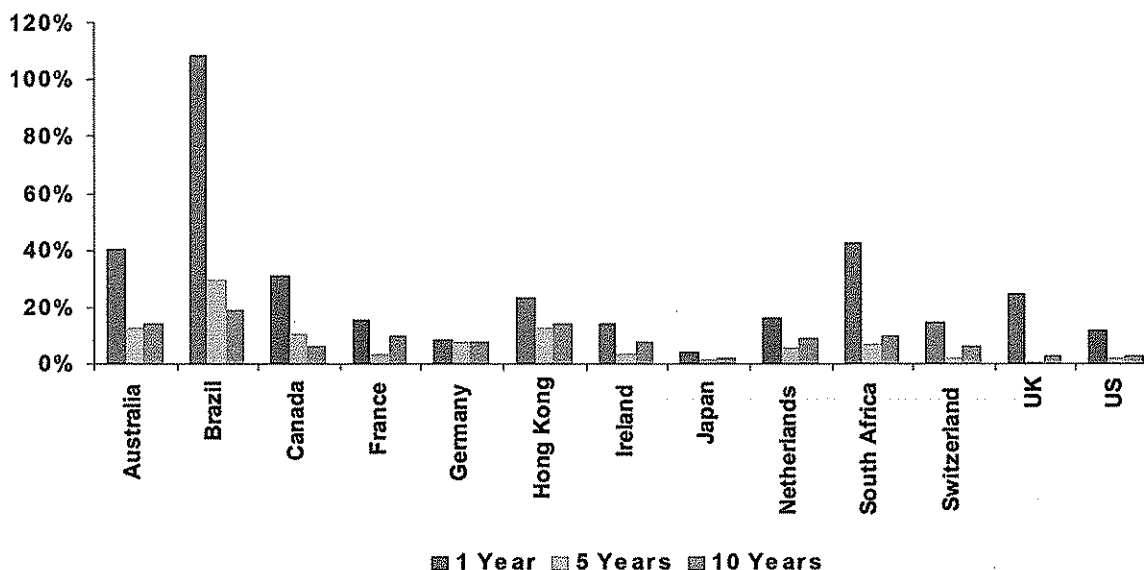
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Global pension assets growth rates

Compound Annual Growth Rates – USD

2009e CAGR - USD



Source: Towers Watson and various secondary sources

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Global pension assets growth rates

Currency impact on USD Compound Annual Growth Rates

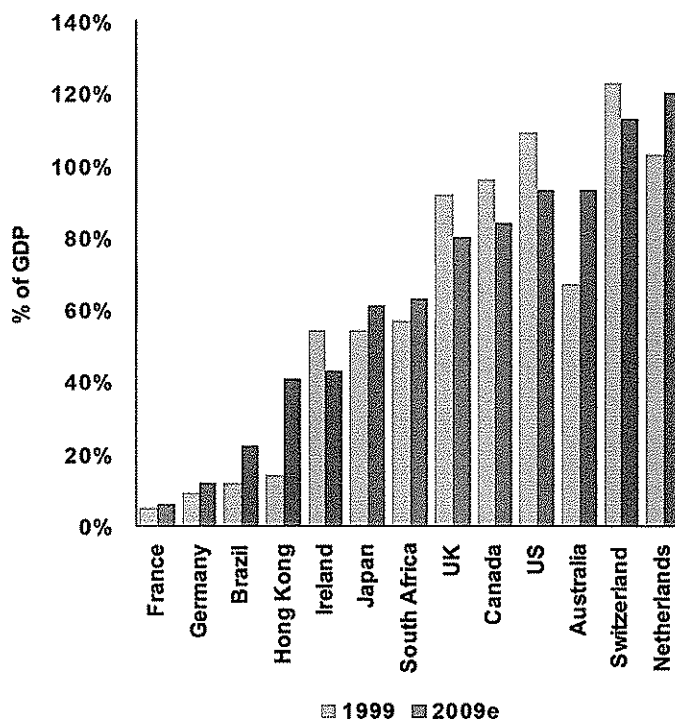
- During 2009 the Brazilian real, the Australian dollar and the South African rand were the three currencies that appreciated most against the US dollar, between 27.4% and 35.0%, thus making growth rates in USD appear much larger.
- Other currencies that appreciated against the USD were the Canadian dollar (16.5%) and the British pound (10.0%). The Euro had a moderate appreciation of only 1.7% during 2009.
- Only the Hong Kong dollar (-0.1%) and the Japanese yen (-2.0%) depreciated against the USD in 2009.
- Over longer periods, almost all countries show larger growth rates in USD. During the last 10 years the Swiss franc had the biggest appreciation (4.4%), while in the last 5 years the Brazilian real appreciated 8.9%.
- The only countries where the effect of currency movements were negative in the last 5 and 10 years were South Africa (-5.3% and -1.8% respectively) and the UK (-3.7% and -0.1% respectively).

Market	Currency effects at 2009		
	Variation in FX (LC/USD) rates		
	1-year (31/12/08- 31/12/09)	5-year (31/12/04- 31/12/09)CARG	10-year (31/12/99- 31/12/09)CARG
Australia	29.3%	2.8%	3.2%
Brazil	35.0%	8.9%	0.4%
Canada	16.5%	2.8%	3.2%
France	1.7%	1.0%	3.6%
Germany	1.7%	1.0%	3.6%
Hong Kong	-0.1%	0.1%	0.0%
Ireland	1.7%	1.0%	3.6%
Japan	-2.0%	2.3%	1.0%
Netherlands	1.7%	1.0%	3.6%
South Africa	27.4%	-5.3%	-1.8%
Switzerland	1.7%	1.7%	4.4%
UK	10.0%	-3.7%	-0.1%

Source: Towers Watson and various secondary sources

Global Pension Assets vs. GDP in Local Currency

Market	Pension assets as % of GDP		
	1999	2009e	Change
Australia	67%	93%	26%
Brazil	12%	22%	11%
Canada	96%	84%	-12%
France	5%	6%	1%
Germany	9%	12%	3%
Hong Kong	14%	41%	27%
Ireland	54%	43%	-11%
Japan	54%	61%	7%
Netherlands	103%	120%	17%
South Africa	57%	63%	6%
Switzerland	123%	113%	-10%
UK ¹	92%	80%	-12%
US ²	109%	93%	-16%
World ³	76%	70%	-6%



Source: Towers Watson and various secondary sources

GDP values in Local Currency from IMF

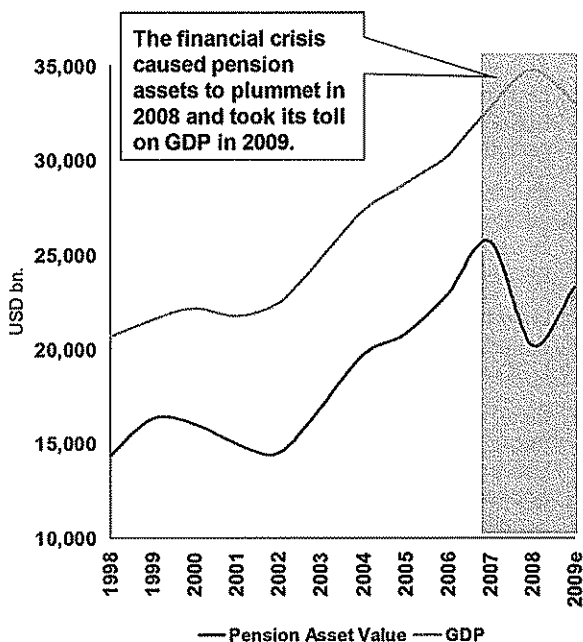
¹Excludes Personal and Stakeholder DC assets

²Includes IRAs

³World pension assets and GDP in USD

Global Pension Assets vs. GDP

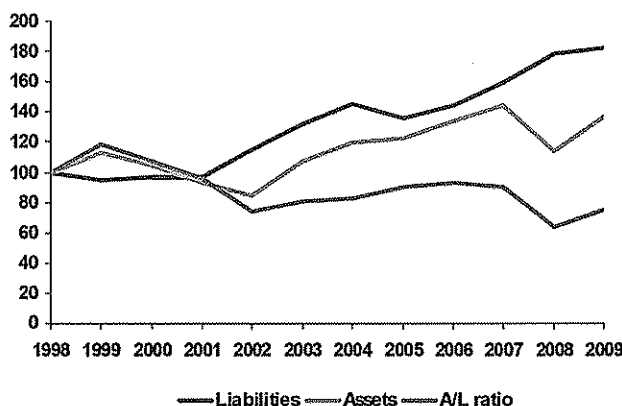
- The average ratio of pension assets to GDP of the P13 increased from 58% in 2008 to 70% in 2009 - still down from its peak of 78% reached in 2007.
- The recovery is explained by two factors: rebounding of stock markets and a decline in GDP in all countries, except South Africa. While pension assets increased by 15%, the P13's GDP¹ decreased by 5%.
- The Netherlands has the largest proportion of pension assets to GDP (120%) followed by Switzerland (113%) and Australia (93%).
- Countries with the lowest ratios are France (6%) and Germany (12%).
- During the last 10 years, the pension assets to GDP ratio improved the most in Hong Kong (27%), Australia (26%) and the Netherlands (17%), while the biggest deterioration occurred in the US (-16%), Canada (-12%) and UK (-12%).



Source: Towers Watson, the IMF and various secondary sources
¹ World GDP measured in USD and country GDP in Local Currency

DB asset/liability indicator – global basis

Index change from 31 December 1998



Source: Towers Watson and various secondary sources

DB assets only within asset totals

UK assets exclude Personal and Stakeholder assets

US assets include IRAs

Brazil and South Africa are not considered in the analysis

Mortality changes are not incorporated in these figures

Year end	Liability increases relative to end 1998	Asset increases relative to end 1998	Asset liability indicator - cumulative change relative to end 1998	Asset liability indicator - change in year
1999	-5.1%	12.5%	18.5%	18.5%
2000	-2.9%	3.9%	6.9%	-9.7%
2001	-3.6%	-7.4%	-4.0%	-10.2%
2002	15.0%	-15.2%	-26.3%	-23.2%
2003	31.7%	6.7%	-19.0%	9.9%
2004	45.0%	19.0%	-18.0%	1.3%
2005	35.6%	22.5%	-9.6%	10.2%
2006	43.6%	33.7%	-6.9%	3.0%
2007	59.1%	43.7%	-9.7%	-3.0%
2008	78.2%	21.5%	-31.8%	-24.5%
2009	81.6%	36.5%	-24.9%	10.2%

- Global pension fund balance sheets recovered significantly during 2009.
- The global asset/liability ratio is still down by 25% from its 1998 level.
- At an individual market level, asset/liability levels went up in 2009 in all markets. In several markets they are still lower than in 1998, the worst situation being the UK (-43%).

Methodology for this section

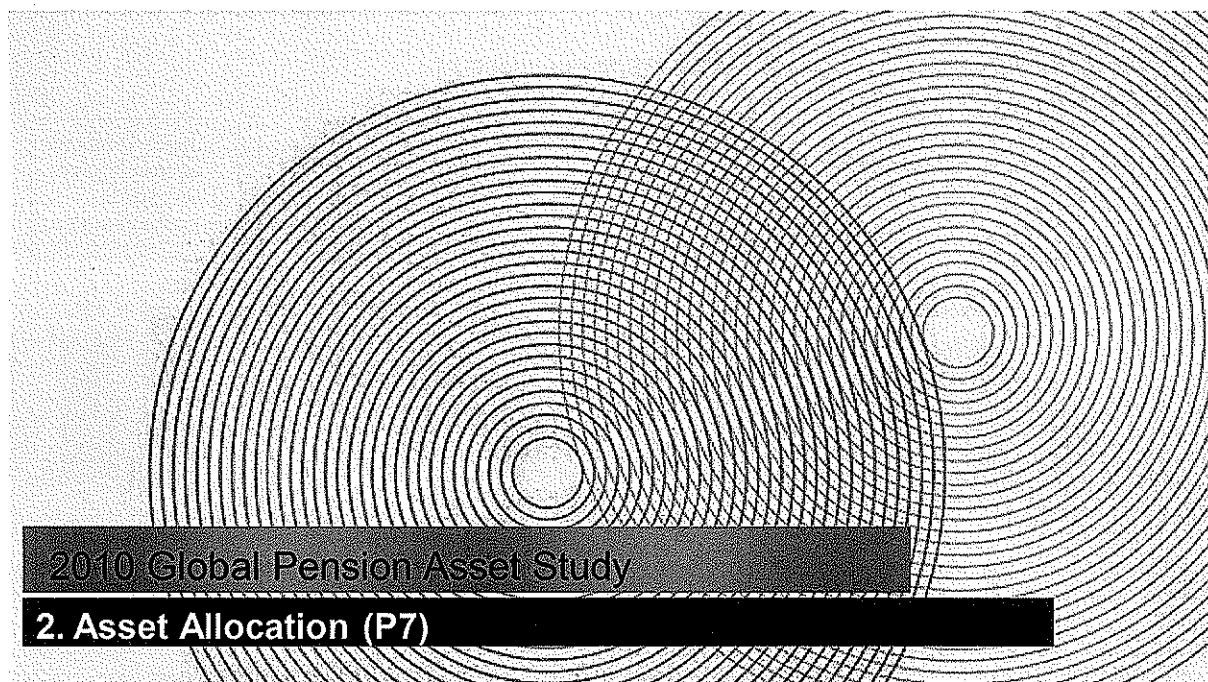
- In this survey we seek to provide estimates of pension fund assets (i.e. assets whose official primary purpose is to provide pension income). This data is comprised of:
 - Hard data typically as of year-end 2008, collected by Towers Watson and from various secondary sources.
 - Estimates as at year-end 2009 based on index movements.
- Before 2006 we focused only on 'institutional pension fund assets', primarily 2nd pillar assets (occupational pensions). Since 2006, the survey has been slightly widened, incorporating DC assets (IRAs) within US' total pension assets. The objective was to better capture retirement assets around the globe and expand the survey into the 3rd pillar (individual savings) universe, which is primarily being used for pensions purposes in many countries. Furthermore, this innovation enables us to estimate the global split between DB and DC assets.
- UK assets exclude Personal and Stakeholder assets.

Comparison with GDP

- This section compares total pension fund assets within each market to GDP sourced from the IMF

Comparison with liabilities

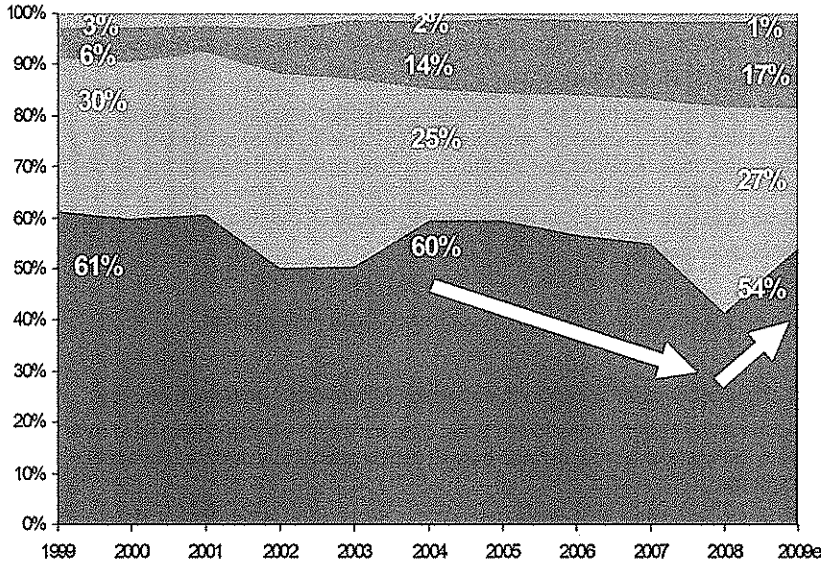
- This section compares the evolution of *defined benefit* assets to the evolution of liabilities within each country
- Defined benefit assets are updated with capital contributions to the latest date for which we can obtain hard data for assets (typically year-end 2008). From that date onwards, defined benefit assets are simply updated for asset movements obtained using index estimates.
- We do not use hard figures for liabilities for any period and simply account for the change in liabilities that will result from changes in the corresponding government bond yields
- The asset/liability ratio for each market may change from year to year as prior DB asset totals and DB/DC splits are restated.



Pension assets allocation

Aggregate P7 asset allocation from 1999 to 2009

■ Equities ■ Bonds ■ Other ■ Cash

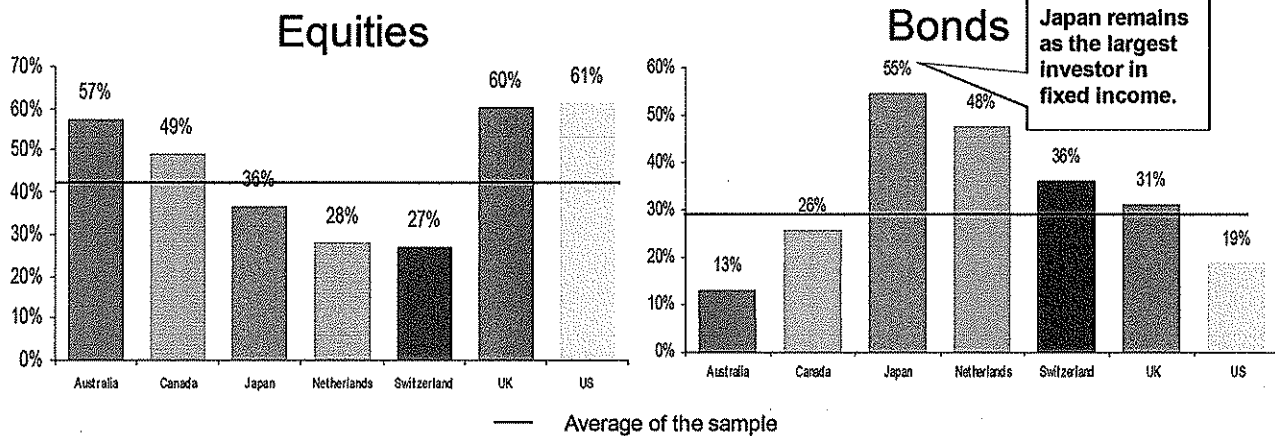


- Bond allocations increased from 24.5% in 2005 to 32.1% in 2008. However in 2009 allocations fell back to 26.9%.
- Equity allocation increased in 2009 to 54.4% from 48.0% in 2008.
- Exposure to alternative assets continues to grow, extending a long-established trend and reflecting pension funds' growing appetite for diversification.

Source: Towers Watson and various secondary sources

Pension assets allocation

Equities and Bonds in 2009

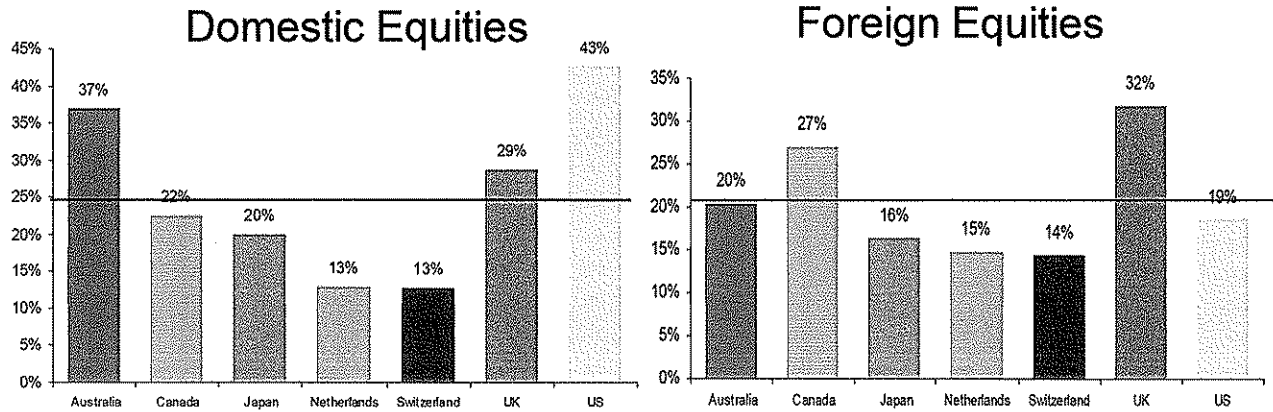


- Every market experienced a shift to greater exposure to equities and reduced exposure to bonds compared to the previous year.
- The US, UK, Australia and Canada continue to retain above average equity allocations. Japan, the Netherlands and Switzerland all have higher than average exposure to bonds.

Source: Towers Watson and various secondary sources

Pension assets allocation

Equities in 2009



- All countries increased their allocation to domestic equities and most increased allocations to foreign equity, with the exception of Australia and Canada.
- Most countries have similar amounts of assets in domestic and foreign equities, with the exceptions of the Australia and the US, where domestic equities are predominant.

Source: Towers Watson and various secondary sources

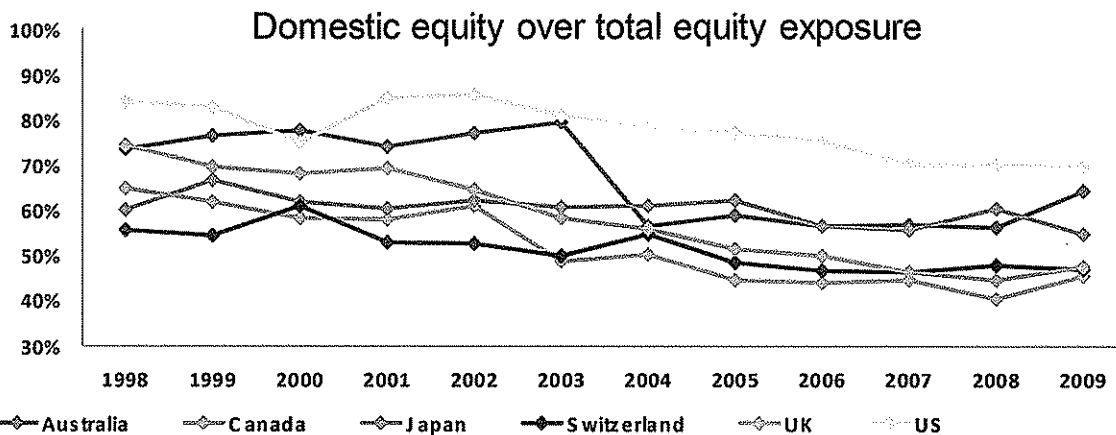
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Pension assets allocation

Domestic equity exposure



- Since 1998, domestic equity importance have been falling in most of the countries considered.
- The US pension market remains as the most dependent on domestic equities, with around 70% of total equities invested in domestic companies.

Source: Towers Watson and various secondary sources
 Note: Netherlands not considered

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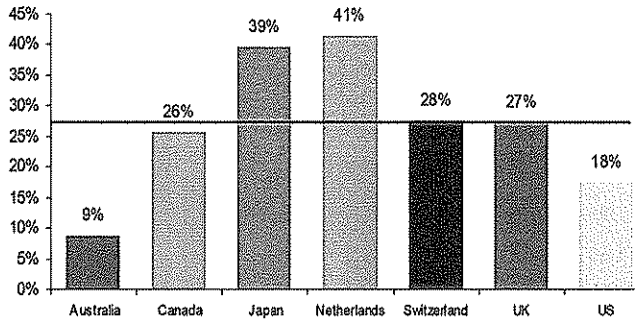
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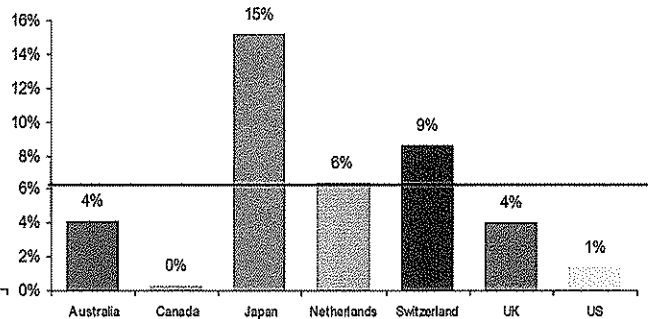
Pension assets allocation

Bonds in 2009

Domestic Bonds



Foreign Bonds



- Every market is less exposed to bonds than the previous year, both in domestic and foreign bonds.
- The exposure to foreign bonds is quite small when compared to investments in domestic bonds.

Source: Towers Watson and various secondary sources

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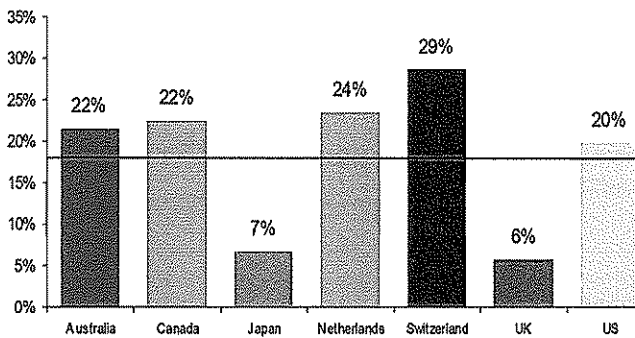
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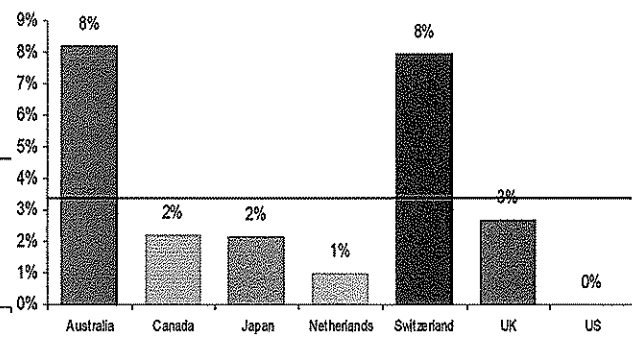
Pension assets allocation

Other assets and Cash in 2009

Other assets



Cash



— Average of the sample

- Australia and Switzerland have by far the largest allocation to cash, while the other P7 countries have very little invested in cash.
- Switzerland and the Netherlands have the highest allocation to alternative assets, followed by Australia and Canada. In Switzerland's case, its allocation to alternative assets is 10% above the average, with this allocation dominated by property assets.

Source: Towers Watson and various secondary sources

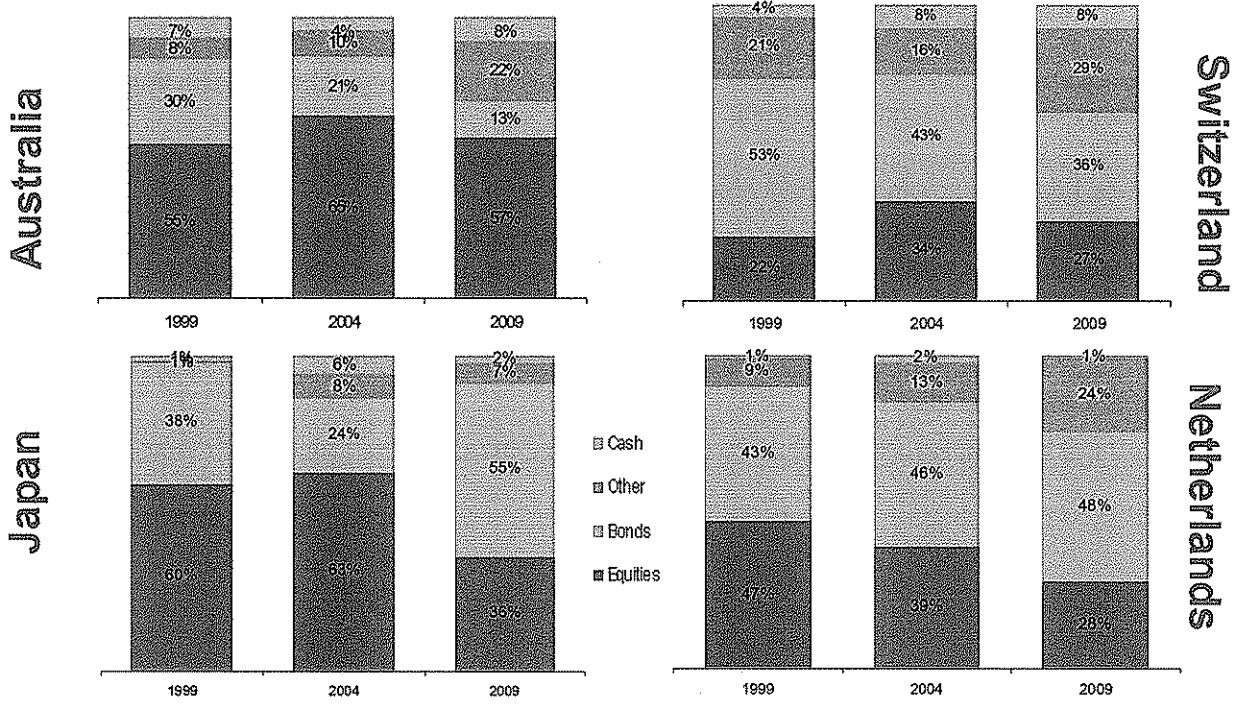
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Pension assets allocation

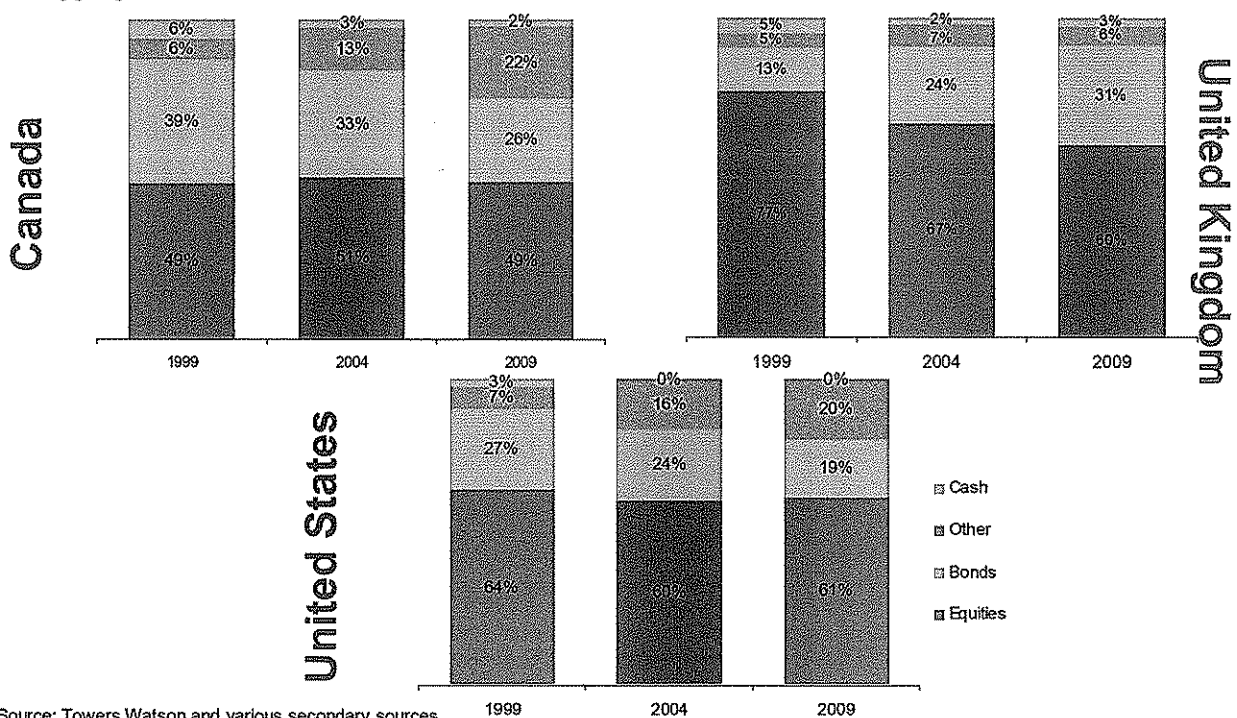
Aggregate – end 1999 versus end 2004 versus end 2009



Source: Towers Watson and various secondary sources

Pension assets allocation

Aggregate – end 1999 versus end 2004 versus end 2009

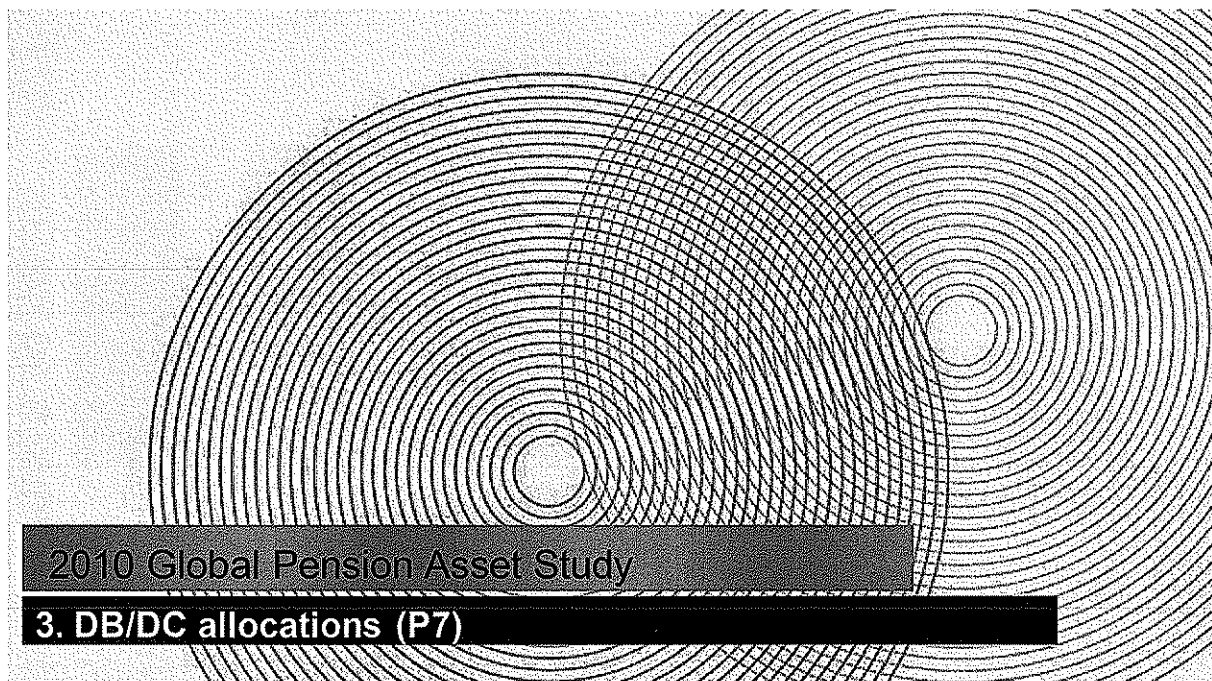


Source: Towers Watson and various secondary sources

Pension assets allocation

Comments

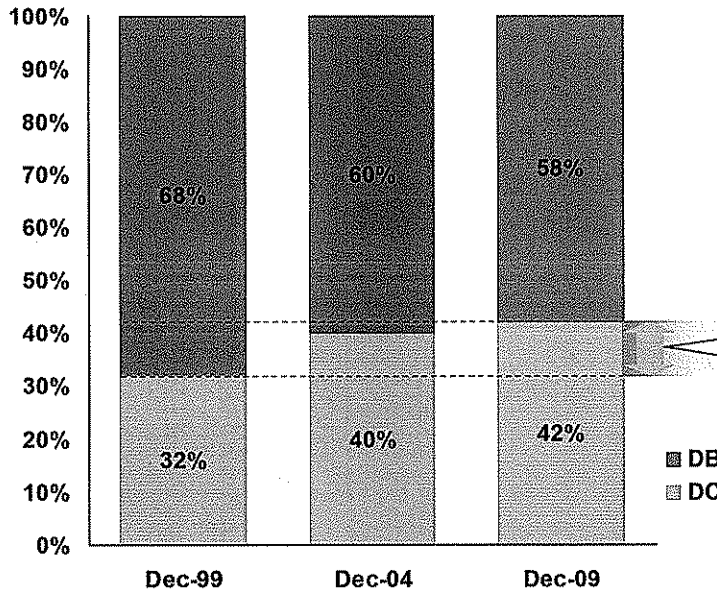
- Currently, the UK and the US have the highest allocation to equities. However, in the UK it has decreased significantly from 77% in 1999 to 60% in 2009. Conversely, in the US it remains fairly constant - 64% in 1999 and 61% in 2009.
- In Japan and the Netherlands exposure to equities has fallen significantly in the past decade. In both markets, bonds are now the dominant asset.
- Regarding the bond allocations, there is no clear trend, as 4 markets (Australia, Canada, Switzerland and the US) show a decrease in their exposure, while the other 3 (Japan, the Netherlands and the UK) show the opposite trend. The most notable change occurred in the UK, where its bond exposure more than doubled in the last 10 years.
- Allocation to cash remains very small in most markets, with the highest proportion being 8% in Australia and Switzerland.
- Investment in alternative assets continues to grow in all countries, with the exception of Canada.



DB/DC asset split

Change over the 10 years to the end of 2009

Defined contribution (DC) fund assets



- During the last decade there has been a strong trend toward the establishment of DC pensions schemes. However DB assets still continue to represent more than half of total assets.

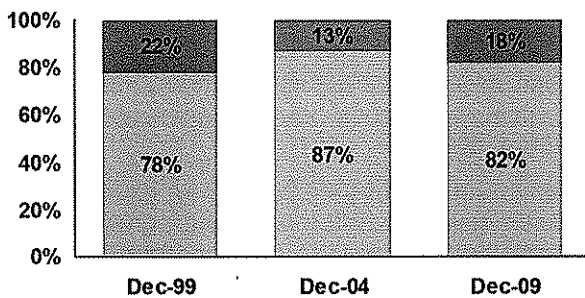
Average growth of DC assets is 6.4% pa vs. DB on 1.6% pa

Source: Towers Watson and various secondary sources
towerswatson.com

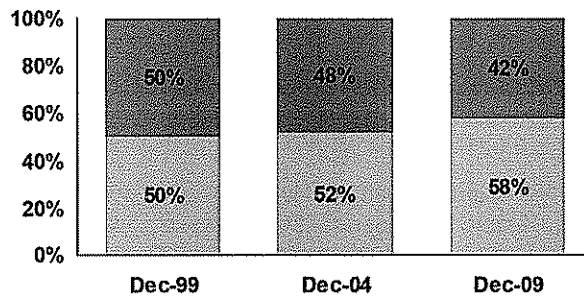
DB/DC asset split

Change over the 10 years to the end of 2009

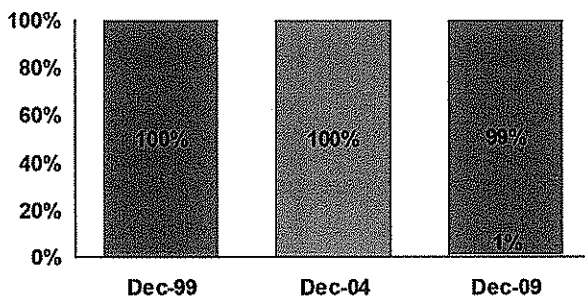
Australia



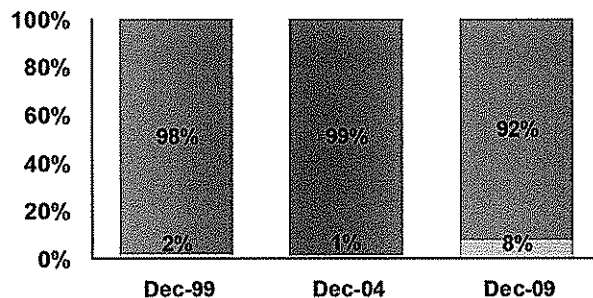
Switzerland



Japan



Netherlands

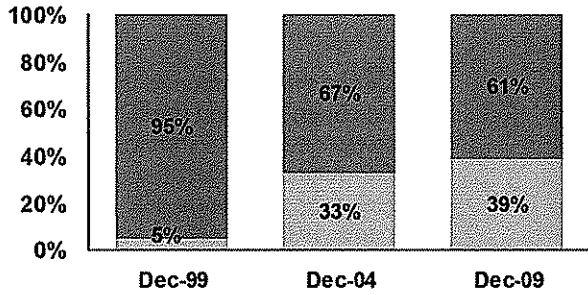


Source: Towers Watson and various secondary sources
towerswatson.com

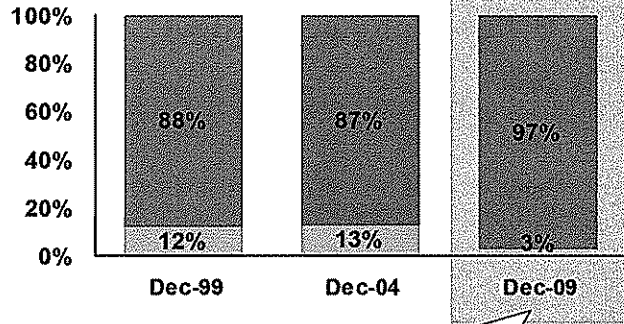
DB/DC asset split

Change over the 10 years to the end of 2009

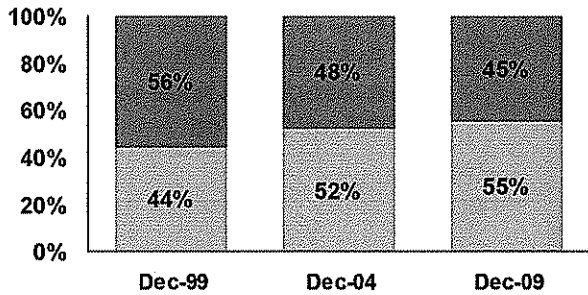
United Kingdom



Canada



United States



Canada is the only country in our sample where DC assets have fallen when compared to DB.

UK data does not include Personal and Stakeholder assets but includes insurance administrated vehicles. If the latter were excluded as well, proportion of DC assets would go down to 26%

US assets include IRAs

Source: Towers Watson and various secondary sources
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DB/DC asset split

Change over the 10 years to the end of 2009

- During the last 5 years all the P7 countries, except for Canada and Australia, increased their DC assets. Over the last 10 years, only Canada has seen its DC assets fall relative to DB.
- DC assets continue to dominate in Australia - 78% in 1999, 87% in 2004 and 82% in 2009. Behind Australia in DC assets are Switzerland (58% in 2009, up from 52% in 2004), the US (55% in 2009, up from 52% in 2004) and the UK (39% in 2009, up from 33% in 2004).
- The countries with the lowest proportion of DC assets at the end of 2009 were Japan (1%), Canada (3%) and Netherlands (8%). Despite a low percentage in the Netherlands, this represented growth of 7% compared to the previous year. Canada is the only country where total DC assets decreased during the last five years when compared to DB.

2010 Global Pension Asset Study

4. Public/Private sector allocations (P7)

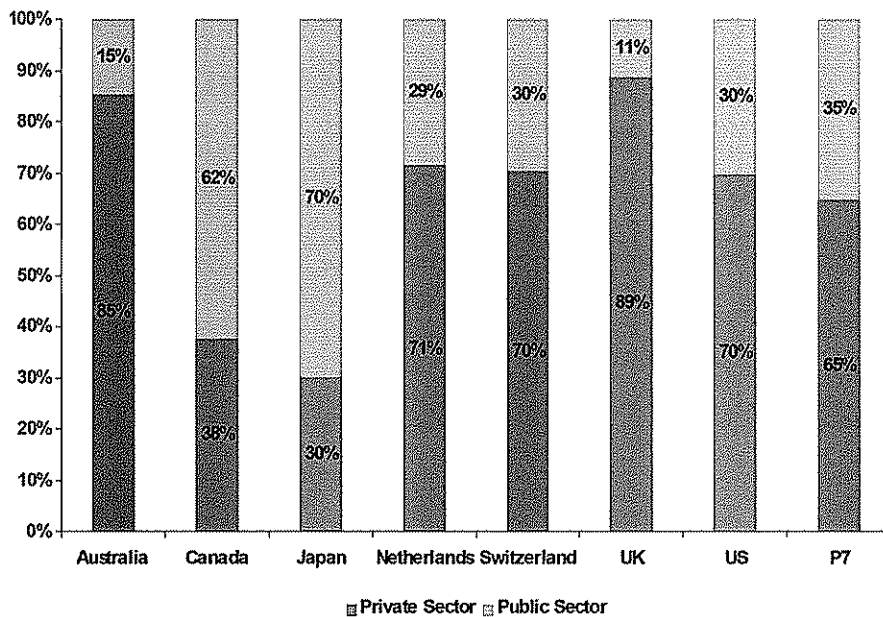
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Public vs Private sector

By Countries – Values at 2008

P7



- 70% of pensions assets in Japan and 62% of Canadian assets are held by public sector.
- In the UK and Australia the private sector holds respectively 89% and 85% of total assets.

Source: Towers Watson and various secondary sources

Methodology cannot be stretched to provide an estimate for 2009

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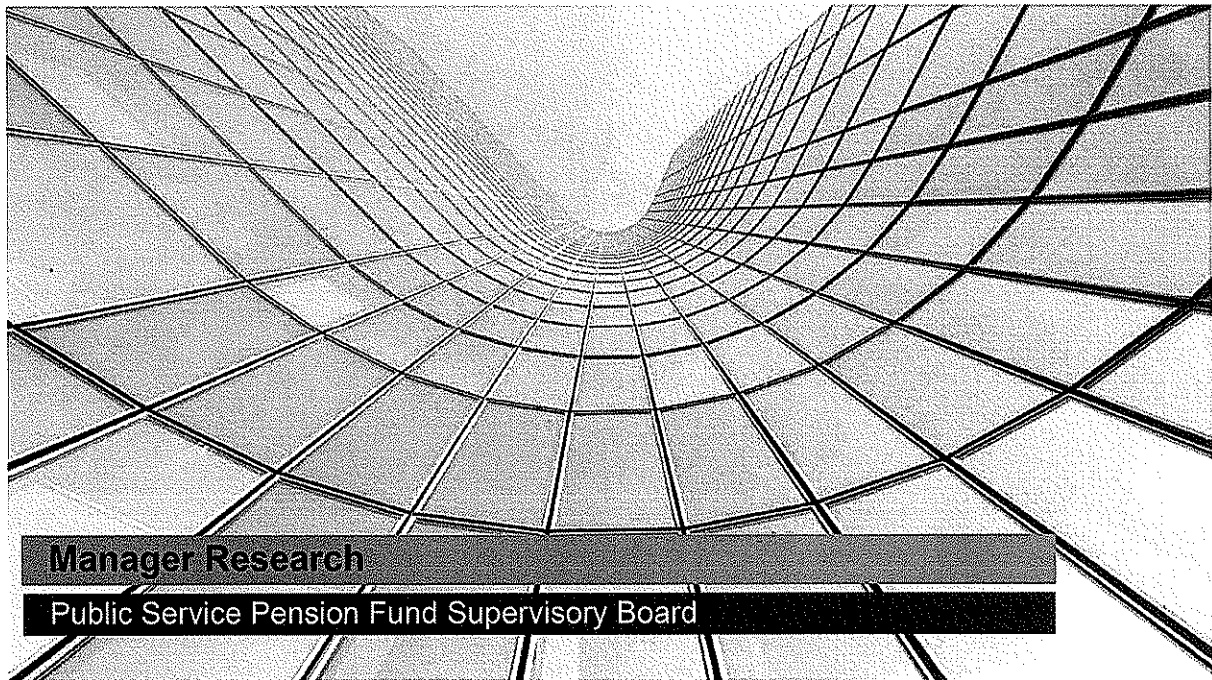
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Manager Research

Public Service Pension Fund Supervisory Board

Mark Brugner
14 September 2010

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TOWERS WATSON 

Our Clients

- Number of investment clients and assets under advice

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*\$1,100 bn assets under advice
on behalf of 300 clients*

AMERICAS

*\$600 bn assets under advice
on behalf of 450 clients*

ASIA PACIFIC

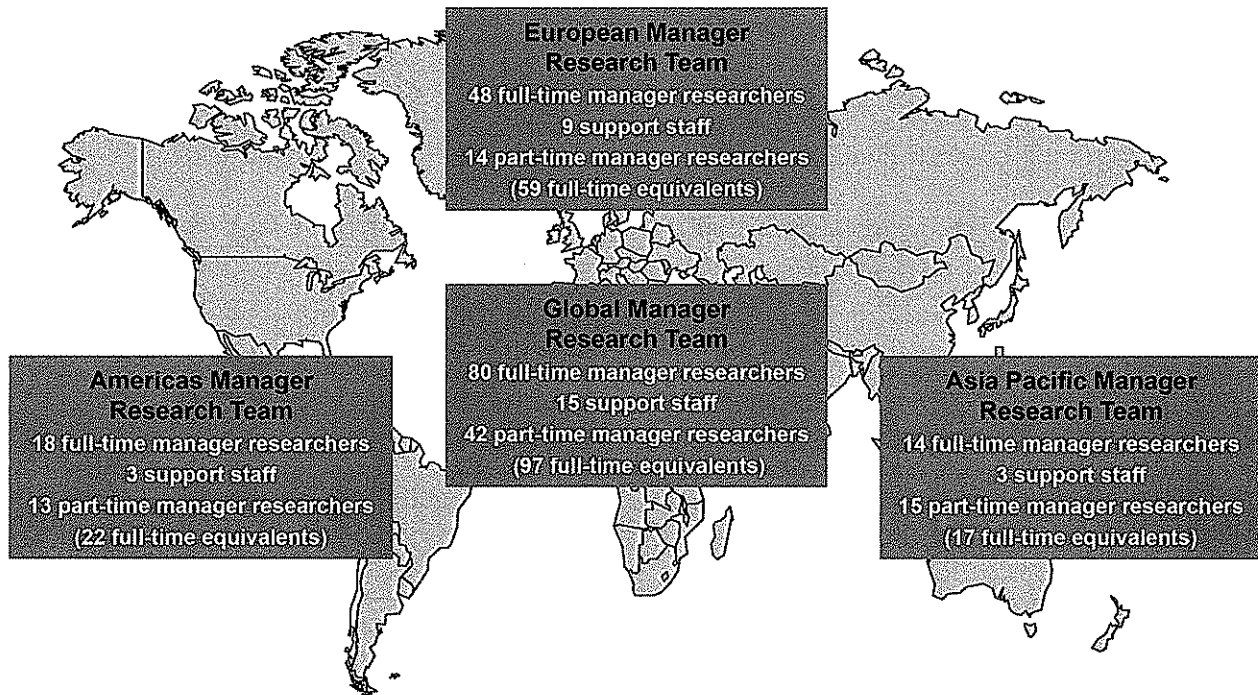
*\$400 bn assets under advice
on behalf of 250 clients*

TOTAL

*Globally we advise more than 1,000
pension funds and institutional investors
with assets in excess of US\$2 trillion.*

Global manager research resources

1 June 2010

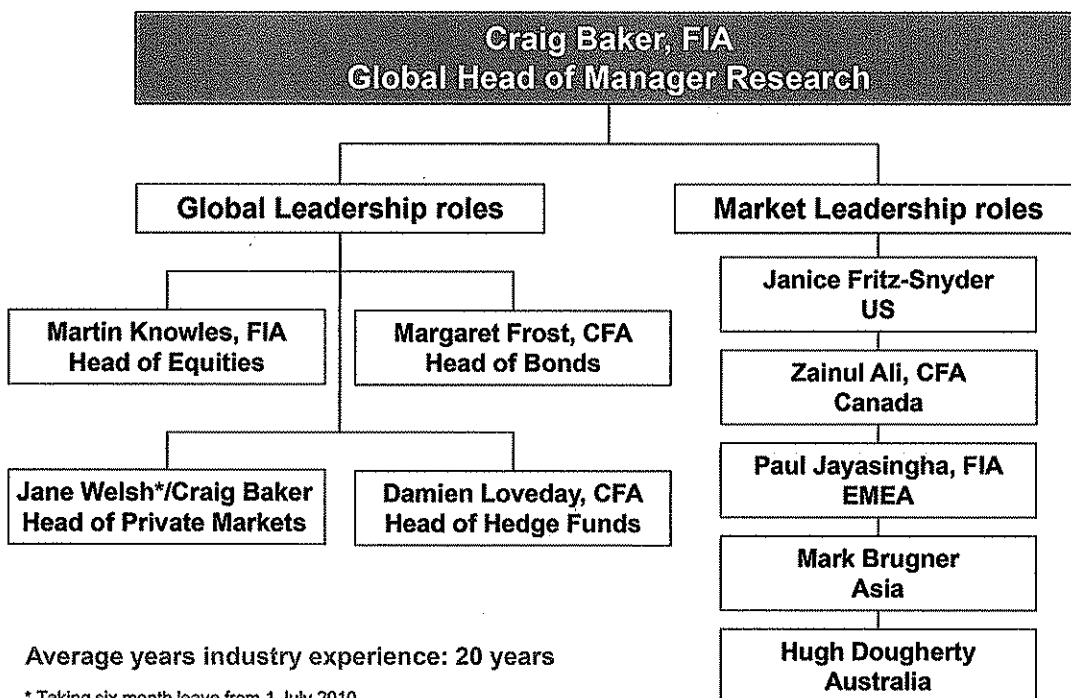


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Global manager research structure

1 June 2010



Average years industry experience: 20 years

* Taking six month leave from 1 July 2010

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Our researchers in the region

Location	Taiwan				China		Hong Kong			Japan			Korea		Malaysia	
Researchers	Janet Li	Rena Pang	Stephen Tong	KoChien Hsu	Jeanne Zhen	Jack Yuan	Mark Brugner	Calvin Wong	Henry Ching	Junji Inoue	Taro Ogal	Tomoya Goto	Toshiya Takenaka	Yasuyo Asada	Andy Jung	Shok Peng Ng
Equity – AP ex Japan							✓	✓								
Equity – Japan								✓			✓	✓	✓			
Equity – GEM							✓	✓								
Equity/ Multi-Asset – Hong Kong							✓	✓								
Equity – Greater China					✓	✓	✓	✓								
Equity - Taiwan	✓	✓	✓	✓	✓		✓									
Equity – Korea								✓								✓
Equity/ Bonds – Malaysia								✓								✓
Bonds – Japan													✓	✓		
Private Equity					✓				✓							
Infrastructure					✓				✓							
Real Estate, REITs					✓				✓	✓						

The Towers Watson manager research philosophy

The overall goal is to find managers that exhibit a *sustainable competitive advantage*

We believe that successful managers exhibit certain repeating patterns or *success factors*

Qualitative manager research is absolutely key - *there is a high noise-to-signal ratio in performance*

Do not focus on past performance

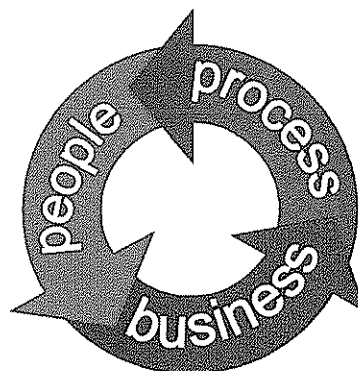
- Take two different managers
 - Genius Asset Management
 - Idiot Asset Management
- We are lucky enough to know for a fact that Genius is highly skilled and over the very long term will produce 2%pa outperformance with a tracking error of 4%pa
- We also know that Idiot is not at all skilled and over the very long term will underperform by 2%pa with a tracking error of 4%pa
- There is still a 19% chance that Idiot will outperform over the next THREE years
- There is even a 13% chance that Genius will underperform over the next FIVE years

Performance track records are much worse at indicating future performance than people think

The qualities we look for in managers

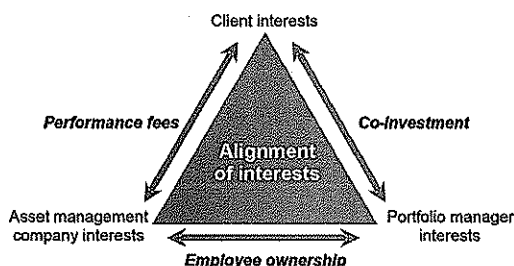
People

- Investor quality
- Focused decisions
- Depth of resource
- Collegiate culture
- Team dynamics
- Staff turnover



Process

- Clear philosophy
- Insightful research
- Implementing ideas
- Process evolution
- Risk management
- Other impacts



Business

- Long-term focus
- Investment-led
- Stable structure
- Business investment
- Growth management
- Aligned interests

Business

- Read the Report & Accounts
 - how important is asset management?
- Look at recent share price moves
 - are they profitable?
 - are options under water?
- Find out the backgrounds of the key Board members
 - do they understand asset management?
 - has there been continuity?
- Calculate the level of employee ownership
- Understand the business objectives
 - growth or client performance focus?
 - short or long term profitability management?
- Down-rate following the announcement of corporate activity unless there are very good reasons otherwise

Can this business attract the talent of the future?

People

- Look through the presentation and try to find top quality people
- Talk in detail about what their competitive advantage is and see if this is where the portfolios are positioned
- Try to understand if they have a structured approach to analysing companies rather than a structured approach to making decisions
- Ask team leaders what the strengths and weaknesses are of their team members
- Try to find out more about the remuneration structure
- Do not automatically look negatively upon organisations that do not have LTIPs
- Sit in on internal meetings

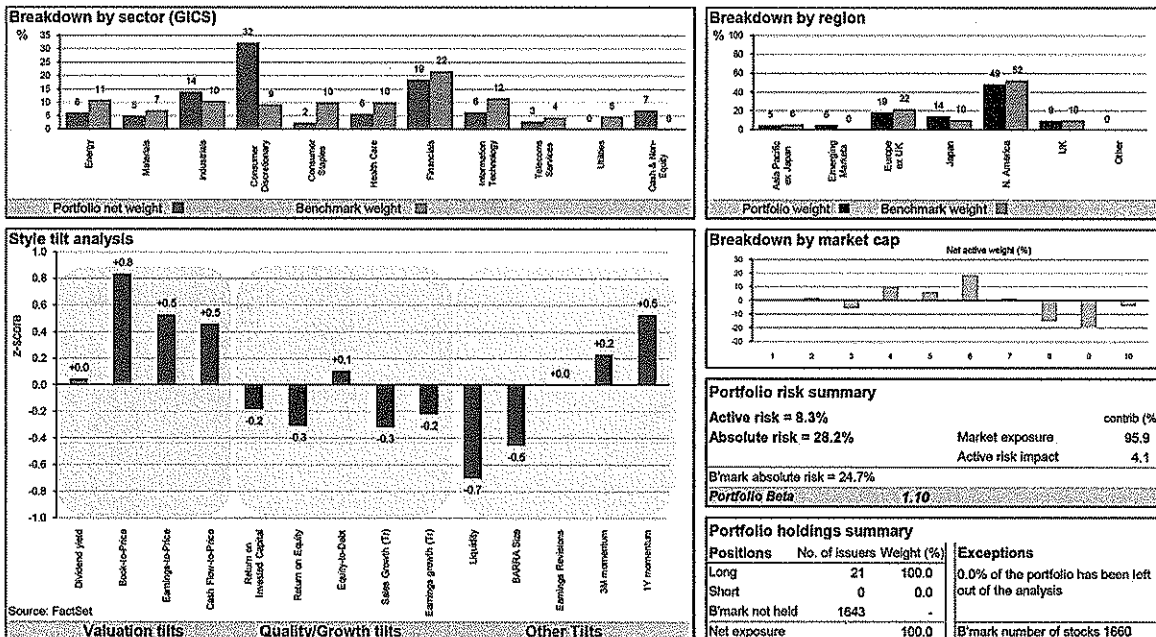
A poor presentation does not indicate a poor manager

Process

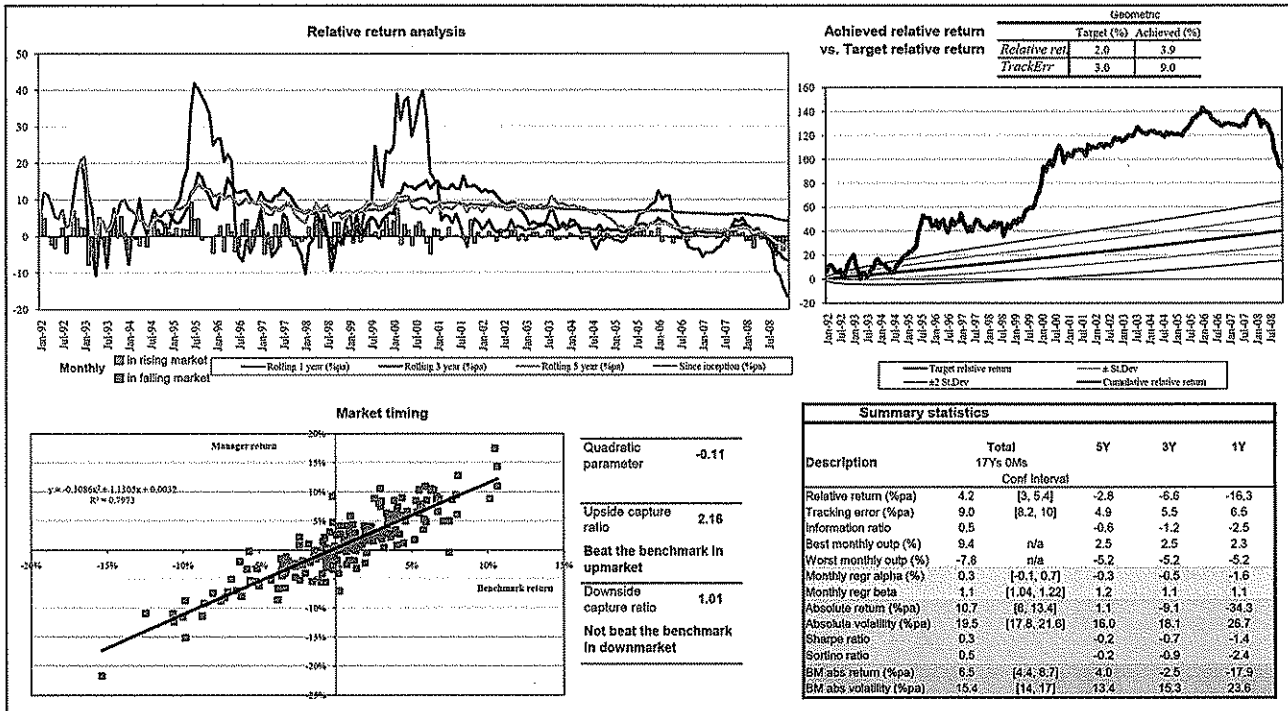
- What do they look for in a company?
- Does the portfolio tie up with this using the quantitative analysis?
- Spend time with analysts going through their valuation models
- What risk controls have been used and do these tie up with the performance pattern?
- Is there sensitivity analysis and scenario testing?
- Work through stock examples
 - How did they come up with the idea?
 - What did they have to do to get it into the portfolio?
 - How did they make the sell decision?
 - How were transaction costs taken into account?

Do they have a better understanding of company business models than the market?

Portfolio holdings analysis



Performance analysis



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Typical process for rating managers



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'Traffic light' analysis

- ensuring consistency and objectivity in our views

Business success factors	Long-term focus on asset management by strong business leaders		People success factors	Insightful, experienced and motivated investors		Process success factors	A clear investment philosophy and process designed to leverage competitive advantages	
	Non-bureaucratic, investment-led culture			Focused decision-making with clear accountability			Superior research that produces unique investment insights	
	Stable corporate structure			Adequate depth of resources relative to the process employed			Portfolio management that efficiently translates research insights into portfolio positions	
	Significant investment in key aspects of the business			Culture that promotes creative thinking and collaboration			Pro-active consideration of potential process improvements	
	Successful management of the growth of the business as well as the existing client base			Effective, cohesive teams with complementary skills and personalities			Appreciation and management of all risks relevant to the investment approach	
	Business structure and employee interests are aligned with those of clients			Healthy staff turnover, neither too high nor too low			Effective management of wider impacts on performance, such as capacity issues and transaction costs	

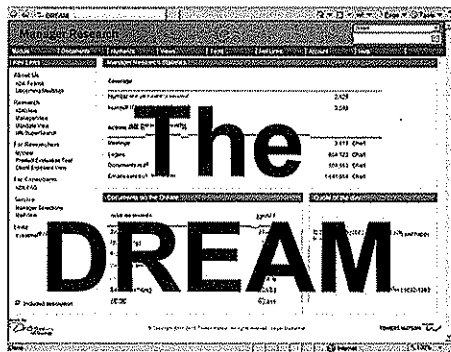
In our view the manager has a weakness in this area

We believe that there is an issue in this area

We have not identified significant issues or weaknesses in this area

Our Global Manager Research Governance Group comprising senior research professionals in each region, ensures that the research output is of the highest quality and checks for consistency in view across ASKs

Proprietary global manager research network



What is in the DREAM?

The Dream provides clients with a window to all of our research, and is the focus of our 100+ researchers worldwide

Manager research output: SWISS analyses, FREX ratings, profiles, traffic light analysis and meeting notes

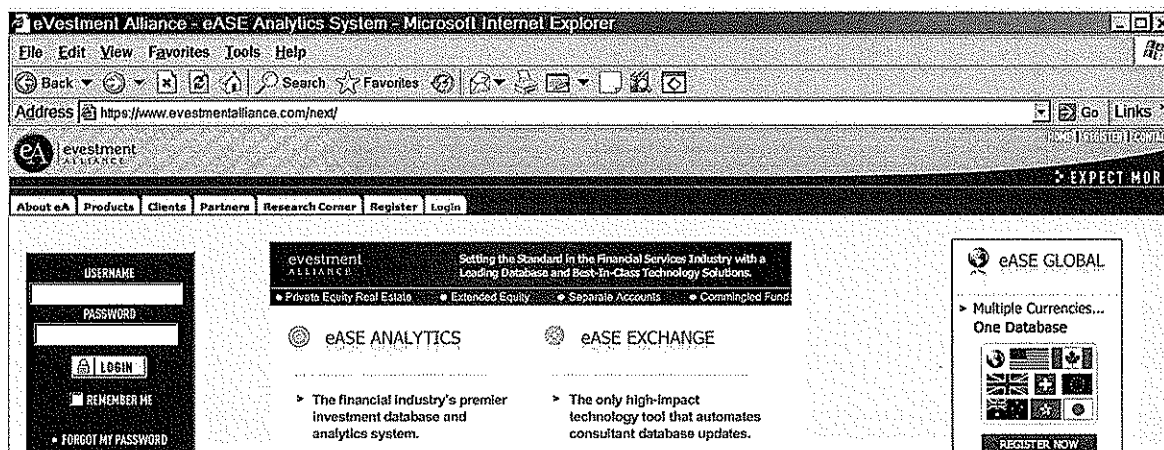
Regular and timely updates on changes at your managers

Quantitative analysis and numeric data (also from eVestment)

Thought-pieces and publications (The Library)

External quantitative investment manager database

- We work closely with eVestment Alliance (eA) to establish a single global quantitative investment manager database for selection and monitoring activities. We extract any new manager level data from eVestment and add it into the Dream

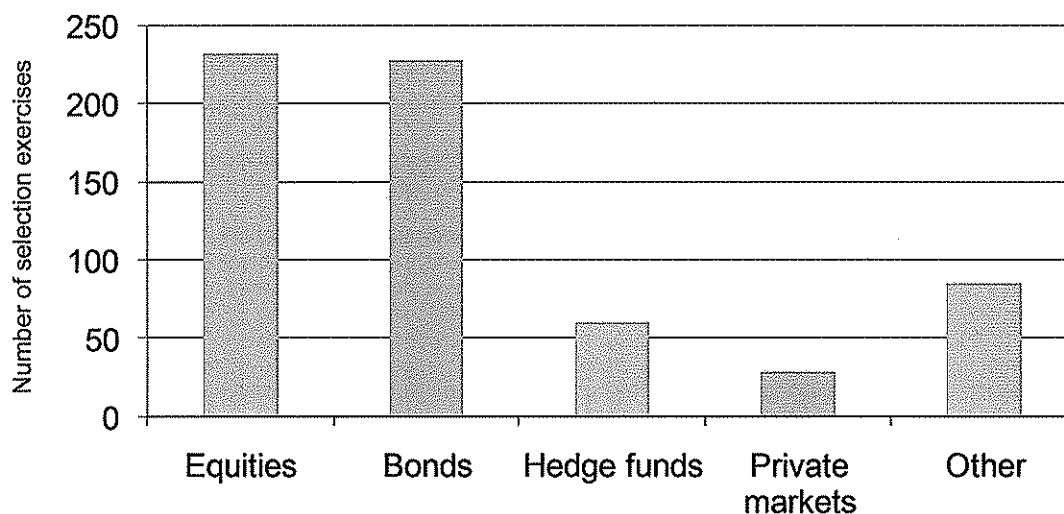


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Manager selections for global clients in 2009 By asset class



Source: Towers Watson. This data relates to Legacy Watson Wyatt selection exercises only

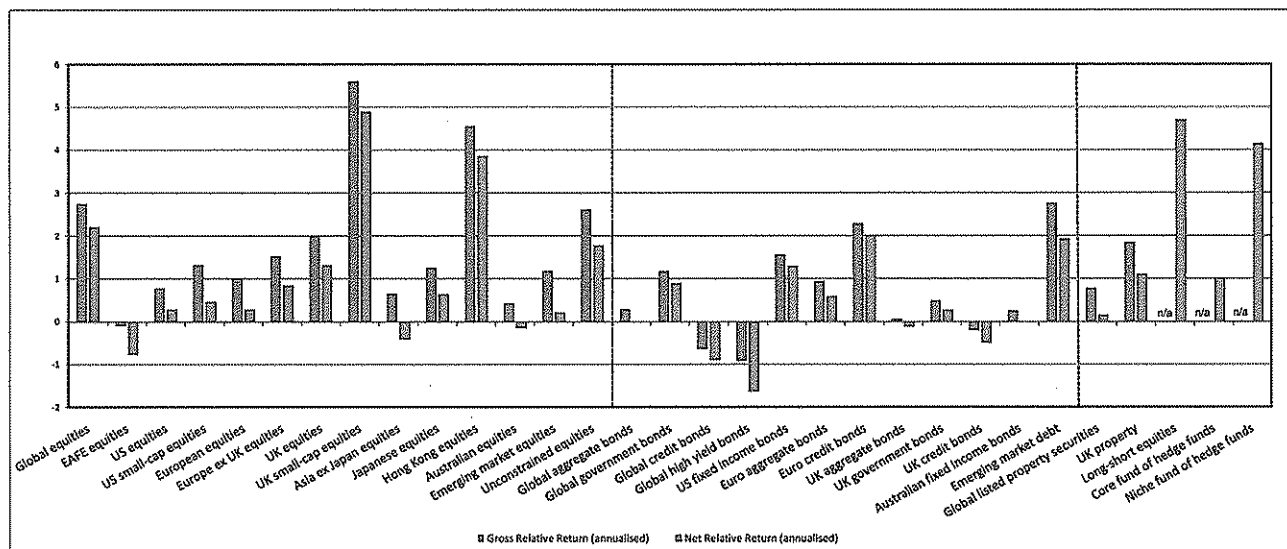
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Towers Watson model portfolios – All (GBP)

Track record since inception to 31 March 2010



All figures are annualised since inception and are in Sterling. Please note that inception dates vary, but all the models above have been running for at least three years. Past performance is not necessarily a guide to future investment performance.

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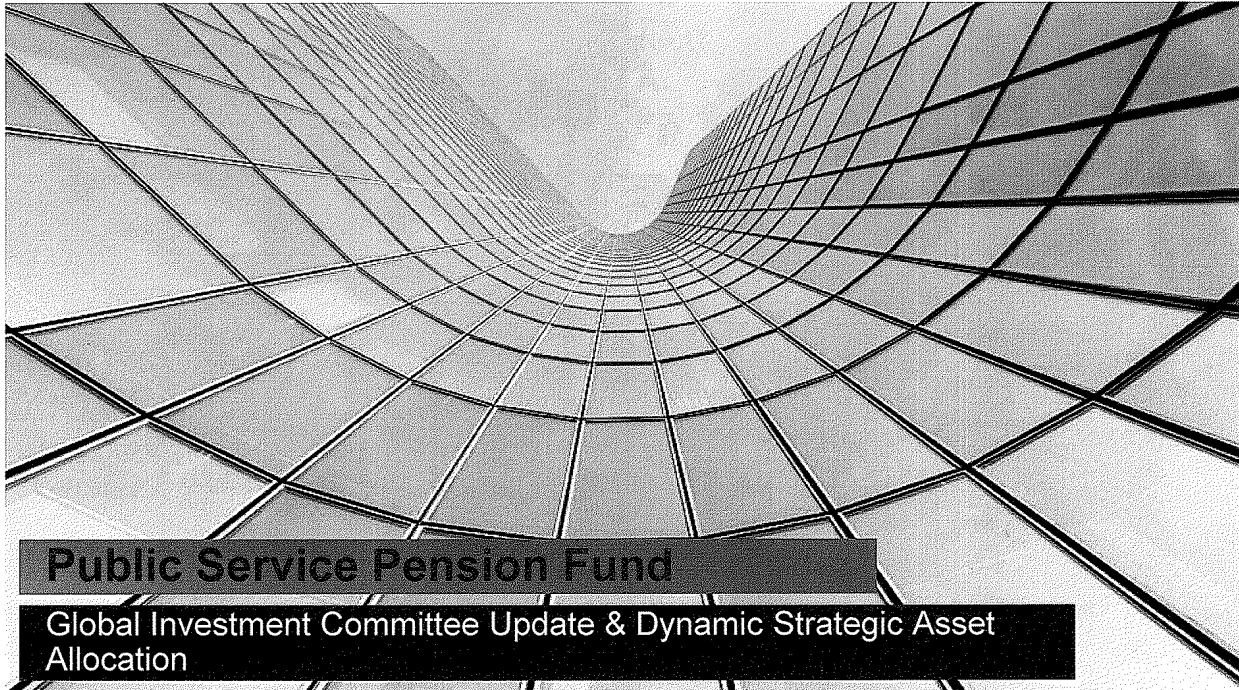
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Public Service Pension Fund

Global Investment Committee Update & Dynamic Strategic Asset Allocation

13 September 2010

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Agenda

- Recent Themes
- Strategic views
- Current DSAA views
- Bond Yield Drivers
- Asian perspective

Recent Themes

3 Recent Themes

- **Bonds, Bonds, Bonds**
 - Sovereign default risk, G4 yields, what does Emerging mean?
- **China, China, China**
 - Developments in the RMB – slight loosening of policy, RMB bond issuance
 - Developments in the economy – housing, bank lending, domestic demand
- **Dis-equilibrium**
 - G4 versus emerging growth rates, currencies, inflation
 - Investor risk appetite
 - Strategy for Alternatives

Current DSAA views

Summary of Towers Watson's medium-term asset class views, August 2010

	Asset class	Negative	Negative (moderating)	Slightly negative	Neutral	Slightly positive	Positive (moderating)	Positive
Listed Equities	Global (developed)					←←		
	Emerging markets					←←		
	US					←←		
	Euro area					←←		
	Japan							
Sovereign Bonds	Global nominal							
	Global inflation-linked							
	EM Sovereign Credit							
Credit	Investment grade							
	High yield							
	Secured loans							
	Emerging market							
Other	Commodity futures							
	Currency (EMFX)							
	Reinsurance							

Global Equities

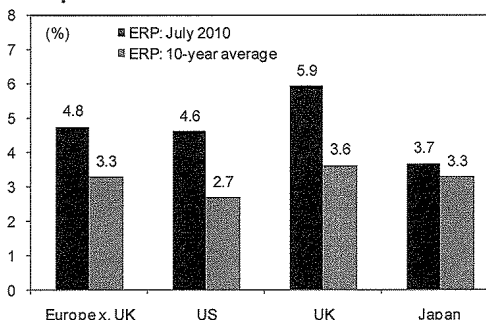
Sharp market falls and extreme volatility

- Equity markets have fallen back to year lows in the last month as investor fears of left-tail sovereign risks and their potential negative impact on global growth have become heightened.
- While value (based on either dividend discount analysis or cyclically adjusted P/E measures) has been brought back into equity markets, the risks around the cyclical recovery have become more fragile; consequently we think equities are only moderately attractive relative to bonds and credit.
- Continental European equities look relatively more attractive than other areas of the market on a PE basis, although this may well be warranted due to higher risks in the banking sector.
- We remain strong proponents of the emerging economy decoupling theme and believe, over the long term, that this will lead to a structural decline in the ERP of emerging markets relative to developed markets.

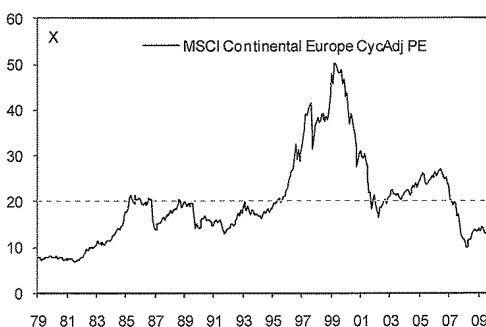
Sources: Bloomberg, Towers Watson

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Risk premiums have risen in all markets



Europe cyclically adjusted PE is significantly below average



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Equity volatility

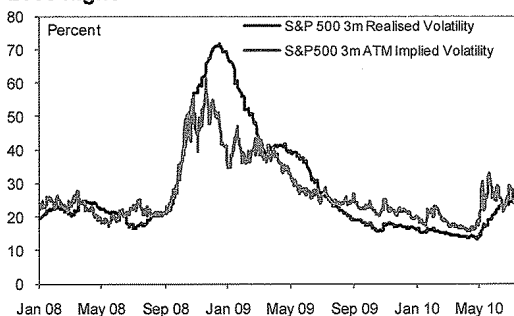
Market implied volatility

- We think uncertainty about the macro environment can drive persistent changes in volatility levels, whereas variations in general risk sentiment cause short term variation.
- Sovereign debt fears, especially in the Euro area, concerns over new bank funding risks and worries about a hard landing in China due to monetary tightening have pushed up equity market volatility sharply. It has also caused an extreme increase in option skew (a useful measure of the market's demand for downside protection).
- Despite the increase in shorter term implied volatility, options implied volatility remains well off its 2008 highs. However, longer dated (5-10y) variance swaps – the market's price of future realised volatility – have gone back to their recent peaks and are pricing in a very high volatility outlook for equities over the medium term – in our view too high.

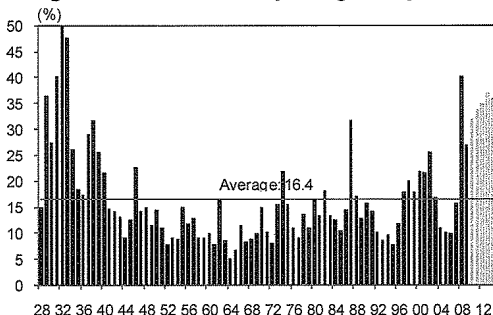
Sources: Bloomberg, Goldman Sachs, Towers Watson

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Shorter term implied volatility has risen but is well off 2008 highs



Longer-dated variance is pricing in depression-era volatility



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Emerging Market Equities

EM equity valuations relative to history

- In aggregate, China and EM equity valuations are now trading in line with their medium to long term historical averages (end column of the table on the right) and well within our 'fair value' range of +/- 1 standard deviations from the average.

EM relative to developed market equities

- Emerging market valuations are also now 'fair' relative to developed world and US equity markets on most measures.
- The higher price/book in China and EM (relative to developed world) is supported by their significantly higher return on equity (ROE) – a measure of the higher corporate profitability in EM
- EM trades at a moderate discount to developed markets on most earnings and cash measures, which is justified given their higher risk – the current discount is around one standard deviation lower than has been the case historically, but this is supported by higher corporate profitability

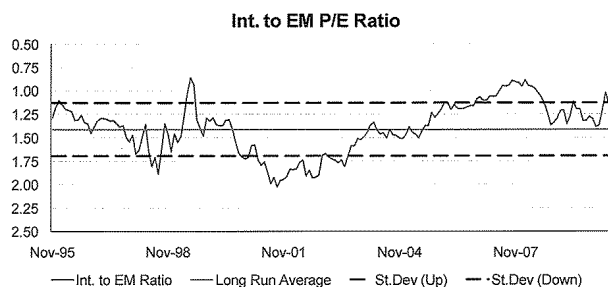
Sources: Bloomberg, Datastream, Towers Watson

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Valuation summary for DM and EM equity indices

	P/E	Fwd P/E	P/B	D/Y (%)	ROE (%)	Z-Score
World	16.6	11.8	1.8	2.5	10.6	-1.1
USA	16.3	12.3	2.1	2.1	12.7	-0.6
Europe ex-UK	16.0	11.0	1.5	3.3	9.3	-1.0
Asia ex-Japan	16.4	12.2	2.0	2.2	11.9	-0.1
China	17.1	12.31	2.4	2.3	14.2	0.0
EM	15.2	10.6	2.0	2.2	13.2	0.0
DM	16.8	12.0	1.7	2.6	10.3	-0.9
% difference (EM over DM)	-9.9	-12.0	15.7	-14.8	28.4	
Favourable ?	Y	Y	N	N	Y	

EM price-earnings ratio relative to history



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Sovereign bonds

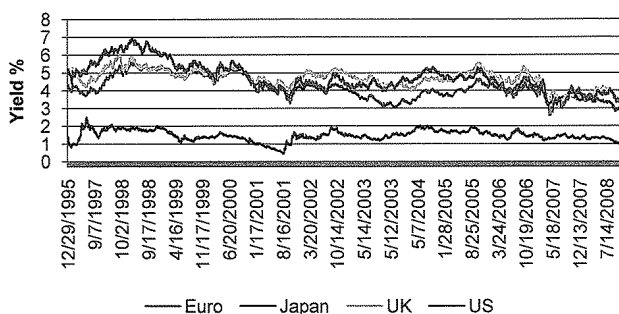
- The generalised spike in risk aversion has been a key driver of the recent rally in government bonds in the developed markets – both nominal and real government bond yields are at or close to historical lows across the G3
- While developed market bond yields are low by historic standards, broadly our view is that in the near term yields justified by current loose monetary policy
- Lower inflation and central banks on hold, especially in the US, suggest that longer-dated yields shouldn't rise significantly in the near term, but there appears little scope for them to fall much further.
- We believe that the risks around global sovereign bonds are skewed towards future yield increases.
- We would look for areas of the sovereign bond market where the yield risks are more "balanced" or closer to historical norms.

Sources: Bank of America-Merrill Lynch, Towers Watson

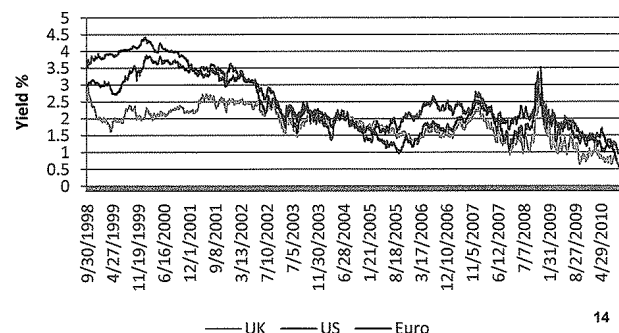
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Global sovereign bond yields are around historical lows

Historical 10 year nominal bond yields



Historical 10 year real yields



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Credit – Investment Grade and High Yield

Spreads have narrowed sharply in July

- We estimate the CRP on a diversified IG portfolio to be 1.5% in cash and 0.7% using index credit default swaps. This is above its 20-year average but still under the level of misalignment where we would normally take an active view.
- Spread widening was also, in part, due to large declines in equivalent maturity government yields due to a “flight-to-safety” as risk aversion flared. Nevertheless, global IG corporate bonds do look moderately attractive versus government benchmark rates
- Higher quality high yield bonds remains moderately attractive in cash markets – however, expected excess returns from high yield credit are highly sensitive to assumptions regarding the future economic outlook

Credit risk premiums are moderately attractive

United States	Risk Premia			Z-score
	Current	20-year avg	Std Dev	
IG CRP (cash)	1.2%	1.0%	0.9%	0.2
IG CRP (synthetic)	0.5%			
HY CRP (cash)	0.8%	0.5%	2.3%	0.1
HY CRP (synthetic)	0.3%			

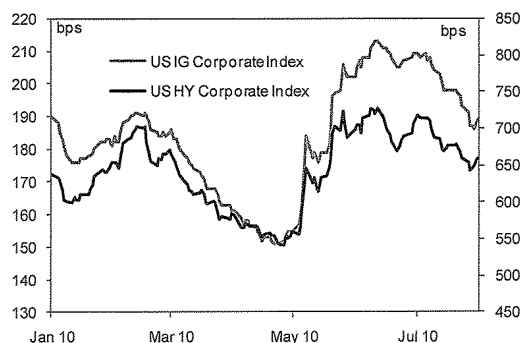
Notes:

1. The 20 yr averages are taken from our Credit Risk Premium Model (which assumes perfect foresight for Defaults & Downgrades)
2. For Investment Grade, the average and standard deviation are calculated over the period 05/1991 - 06/2009
3. For High Yield, the average and standard deviation are calculated over the period 01/1994 - 06/2009

Sources: Bloomberg, Towers Watson

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Spreads, especially IG, are well off their June peaks



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Credit – Emerging markets

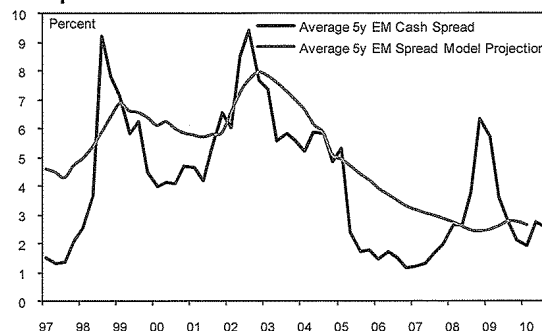
EM sovereign credit

- EM sovereign performance has been in line with other risky asset markets.
- Defensive credits, higher quality credits (e.g. Brazil and Asian USD denominated bonds) performed well during the market falls.
- Spread widening at the broad index level was largely due to significant spread widening in the higher risk/higher beta bonds (e.g. Argentina and Venezuela).
- Overall index spreads are broadly in line with our measure of fair value.

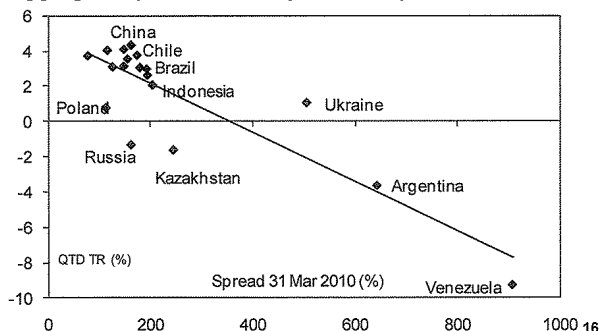
Sources: JP Morgan, Datastream, National Accounts, Towers Watson

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EM spreads close to fundamental fair value



Aggregate spread widening due to higher beta credits



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EM FX

Asian currencies set for more appreciation

- In the last month EM FX sold off in line with other risky assets, especially EMEA currencies with close trade and capital links to the Euro area.
- We are generally positive on EM fundamentals. A number of Asian currencies look undervalued, and are supported by strong current account surpluses and broader balance of payments flows. These countries are also experiencing advanced economic recoveries and earlier prospects for inflation driven monetary tightening. The recent increase in exchange rate flexibility in the Chinese renminbi also lends support for currency appreciation.
- We continue to recommend a long EM FX position, financed against a basket of industrial economies facing fiscal and financial risks (yen especially).

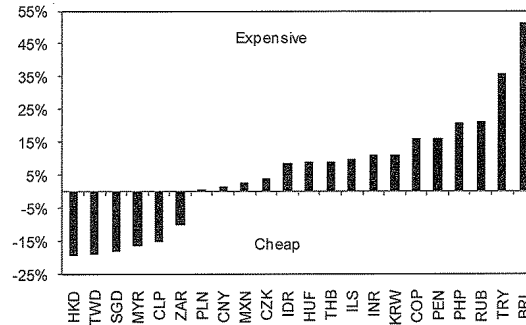
Sources: JP Morgan, Datastream, Goldman Sachs, Towers Watson

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Asia BoP vs Current Account

	CA % GDP			BoP % GDP	
	Latest	Trend over past year	Forecast for 2010	Latest	Trend over past year
Korea	5.1	3.2	0.7	6.8	6.9
India	-3.5	-2.9	-2.5	-0.3	1.2
Malaysia	16.6	15.8	17.8	23.6	15.6
Thailand	5.0	5.0	7.5	8.1	3.0
Taiwan	9.8	10.0	11.4	6.3	6.4
Indonesia	1.0	1.7	2.3	6.1	4.6
Philippines	6.1	5.1	4.4	-1.0	6.9

Some Asian currencies "cheap" vs. USD



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Commodities

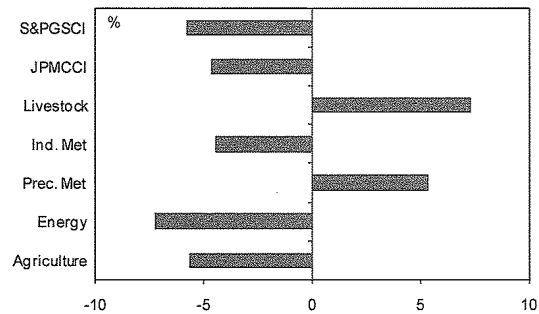
Fundamentals should re-emerge as the key price drivers

- Growth sensitive commodity markets have proved particularly vulnerable to rising risk aversion and investment returns have been poor this year.
- Global economic recovery risks have grown, especially in China, but for now, commodity demand conditions look sustainable. Additionally, supply constraints are re-emerging in several sectors, including crude oil, and some industrial metals, especially copper.
- Price weakness remains at the front end of price curves. Longer-dated prices of most commodities – all of the base metals – are elevated relative to historical norms, although off their highs. In a number of cases they are still trading above top-quartile cash costs, which should encourage a good supply response, after allowing for the usual issues of project delays and disruptions.

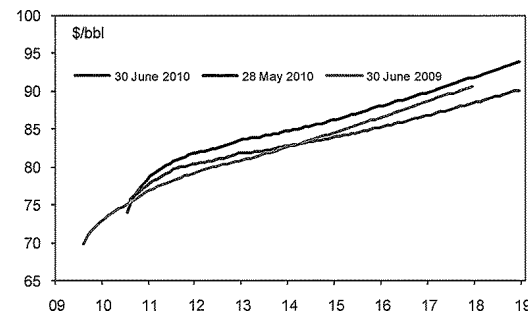
Sources: Bloomberg, Towers Watson

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YTD commodity excess returns have been weak



NYMEX WTI futures curve (\$/barrel)



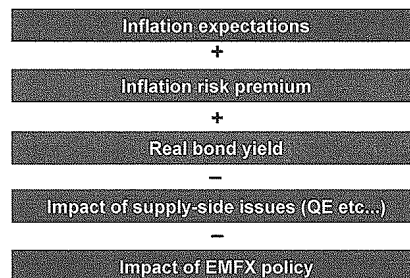
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Bond yield drivers

Explanation of current bond yields and future trend

- From a long-term expectations point of view, long bond yields should be a function of a number of “fundamental” factors
 - Essentially, the nominal bond yield should reflect inflation expectations, plus the real bond yield (which is an indicator of growth expectations) plus a risk premium reflecting uncertainty around inflation outcomes
- The difference between current yields and long-term expectations will either be due to an expectation of real yield increases, or the unwinding of “technical” factors which are currently artificially depressing yield levels, such as:
 - Supply-side issues – e.g. due to the fiscal stimulus, quantitative easing, etc...
 - EM (in particular China) FX policy resulting in a build-up of foreign reserves
- We can therefore decompose nominal bond yields as follows:



- The question is then whether the current low level of bond yields is due more to very low growth expectations (which would be reflected in low expected real yields) or to these technical factors, or both

Reconciliation of current US bond yields with “normative” conditions

Factor	Current (31 Aug 2010)	Medium-term outlook	Long-term assumptions
Inflation expectations	2.3%	2.5%	2.5%
Inflation risk premium	0.3%	0.3%	0.3%
Real yield	1.0%	2.2%	2.2%
Technical			
• Supply side (QE etc...)	-0.5%	-0.25%	-
• EMFX policy	-0.5%	-0.25%	-
10-year bond yield	2.6%	4.5%	5.0%

Comments

- Based on our long-term assumptions, we expect 10-year yields to rise by around 240 bps over a 5-10 year timeframe
 - In particular, our central real yield assumption depicts a scenario of weak growth, but not at “double dip” levels
- This increase in yields is made up of:
 - An increase in inflation expectations of 20bps
 - An increase in real yields of 120bps
 - 100bps due to the unwinding of “technical” factors (assumed to be half supply side, half EMFX policy)
- We expect yields and inflation expectations to trend to our long term expectations over a shorter timeframe than the unwinding of technical factors – this translates to a medium term outlook where yields increase by around 200bps

Asian perspective

Regional issues

- China
- Asian Inflation and Emerging currency
- Alternative Investments
- DSAA

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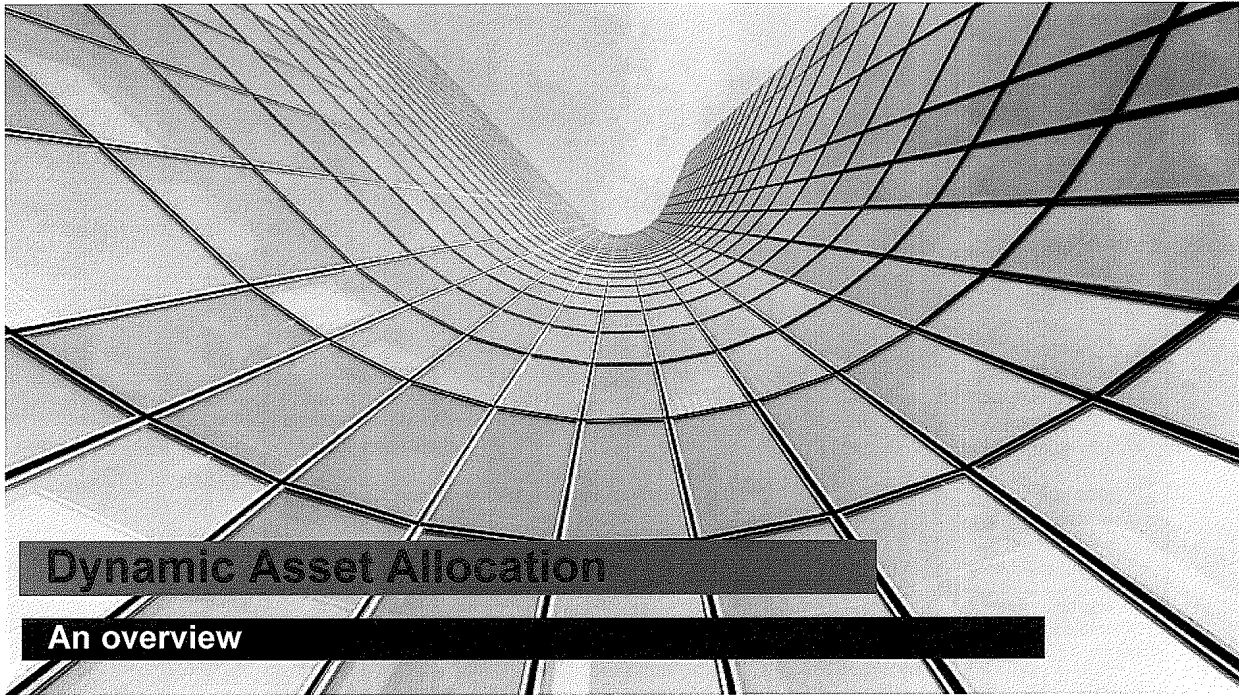
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Dynamic Asset Allocation

An overview

Peter J Ryan-Kane CFA
Head of Portfolio Advisory, Asia Pacific

August 2010

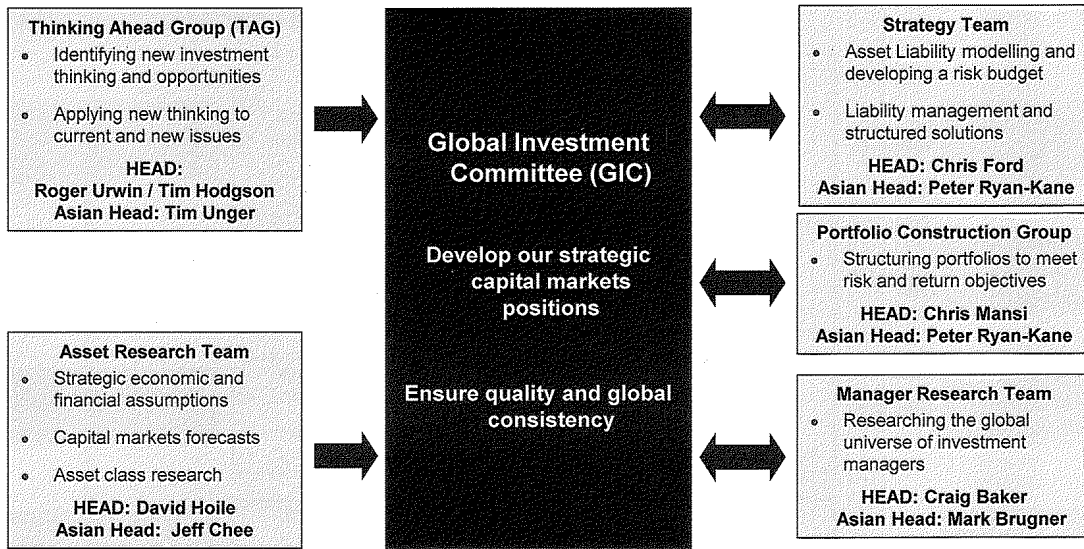
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Asset Allocation Strategies

	Strategic Asset Allocation (SAA)	Dynamic Strategic Asset Allocation (DSAA)	Medium Term Opportunities (MOPS)	Tactical Asset Allocation (TAA)
Primary purpose	Deliver return consistent with risk profile	Add incremental return or reduce risk	Add incremental return and diversity	Add incremental return or reduce risk
Timeframe	Long Term	1 - 3 years	3+ years	Months
Breadth	Generally extends to all asset classes	All asset classes Generally long only	All asset classes, but niche focus Generally long only	Liquid assets only Long and short
Typical Implementation	Funds implement directly, via balanced mandates or via advisory	Funds implement directly, or via advisory	Funds implement via Institutional managers	Funds implement via Institutional managers, hedge funds or advisory
Focus	liability profile, cash flow and funding requirements, return, risk	Risk, return, market action, SAA drift	Return	Return

Resourcing of the asset allocation function

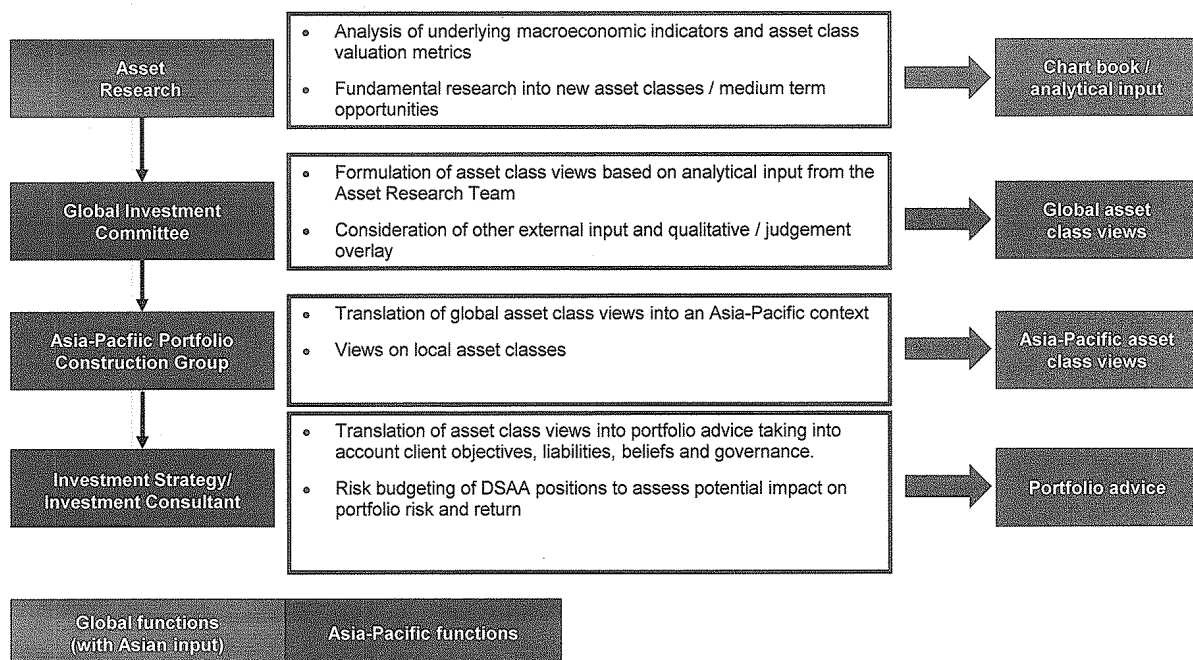


- The Asia-Pacific strategy team has autonomy in relation to the development of assumptions for Asian asset classes – however these are developed within the context of the global assumption setting process.
- The Asia-Pacific strategy team has regular contact and discussions with the global Asset Allocation Group, ensuring complete transparency to the process and rationale underlying the global assumption setting process. We are able to comment upon these assumptions, challenge these where applicable, and provide direct input into the assumption setting process.
- Peter Ryan-Kane sits on the Global Investment Committee and Chairs the Asian Portfolio Construction Group.

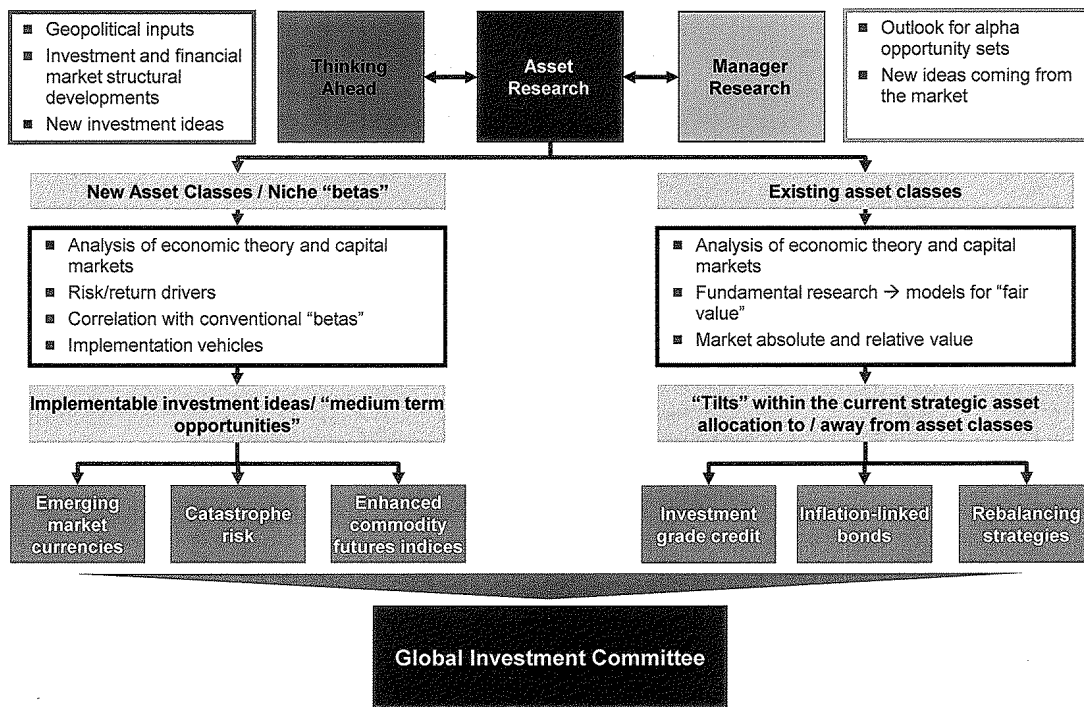
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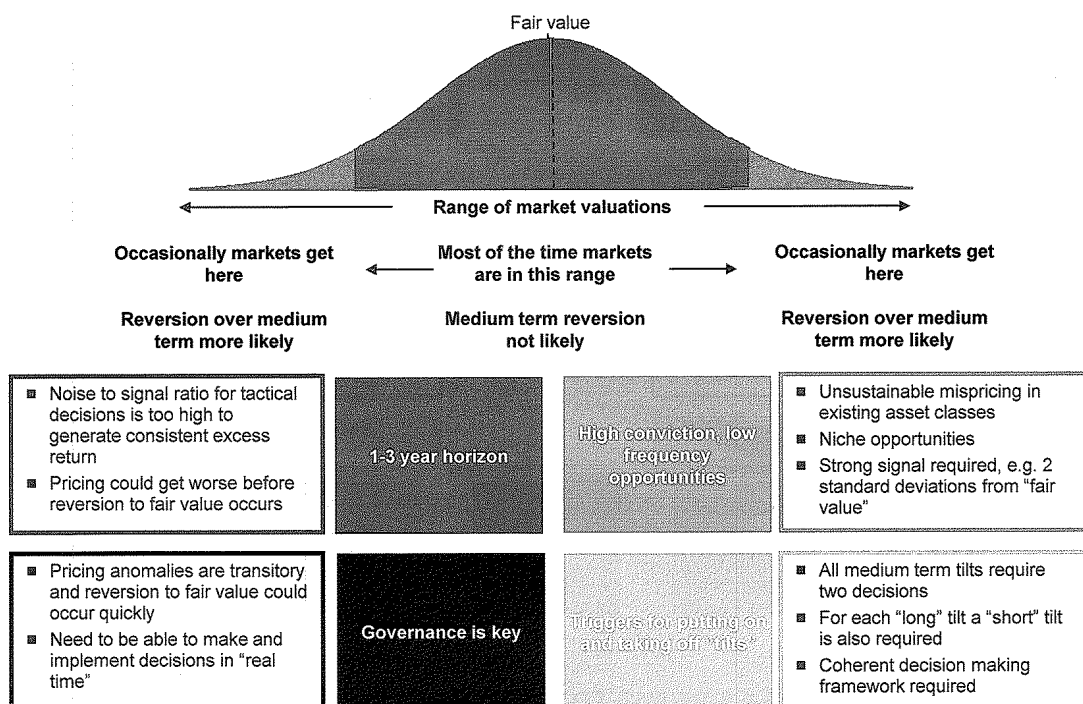
Formation of Towers Watson asset class views and medium-term portfolio positions



Overview of the Towers Watson asset research process



Dynamic Strategic Asset Allocation – our philosophy



Towers Watson DSAA framework – overview

Economics

- Understand the secular economic picture (long term)
- Understand the economic / market cycle (medium term)
- Not intended to make short term forecasts of inflation, growth etc.

Valuation

- Valuation vs historic measures
- Fair value – to what extent is the economics priced in?
- Positions should only be taken at extremes as that is where predictive ability is highest

Breadth

- Equities
- Bonds (nominal / ILBs)
- Credit
- Currency
- Commodities
- Alternatives

Use

- Timing of entry into new asset classes
- Repositioning or rebalancing current strategy

Timeframe

- 1 to 3 years
- At extremes mean reversion is likely, but no-one can tell exactly when this will happen

- Focus on liquid / relatively liquid asset classes where "tilts" towards / away from the strategic benchmark can be readily made
- For illiquid assets (e.g. real estate, infrastructure), the framework can highlight potential entry points to asset classes and indicate if there are likely to be stresses on particular asset classes
- Dynamic asset allocation shifts will be mostly towards / away from broad asset classes (e.g. equities, credit etc...)
- The framework incorporates DSAA views within certain asset classes that are relevant to clients, such as being able to differentiate between Asian equities vs. international equities

Examples of analytics – macroeconomic

Indicators of excess debt

- Total debt as % of GDP
- Household debt (vs asset values, vs income)
- Bank debt
- Current account as % of GDP

Credit indicators

- Credit spreads
- Private sector borrowing rates
- Financial conditions index
- Credit losses
- Credit market borrowing
- New loans / credit issuance
- New mortgages
- Bank lending standards

Drivers of economic recovery

- Residential investment
- House prices
- Durable goods demand
- Business inventory
- Unemployment

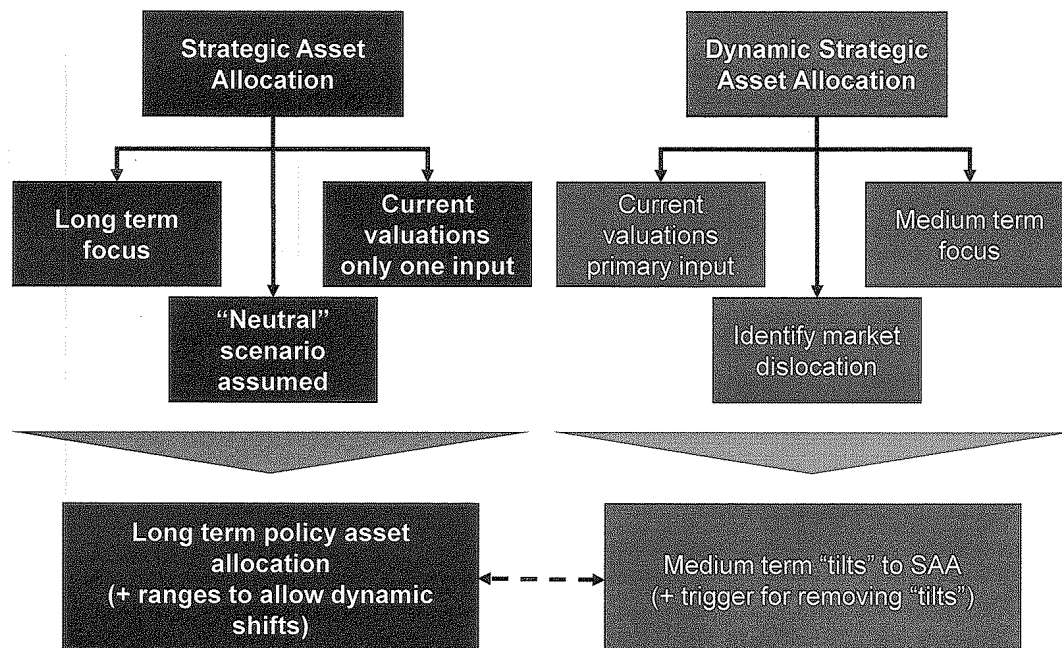
Fiscal / monetary stimulus

- Government net borrowing
- Central bank balance sheet
- Change in monetary base

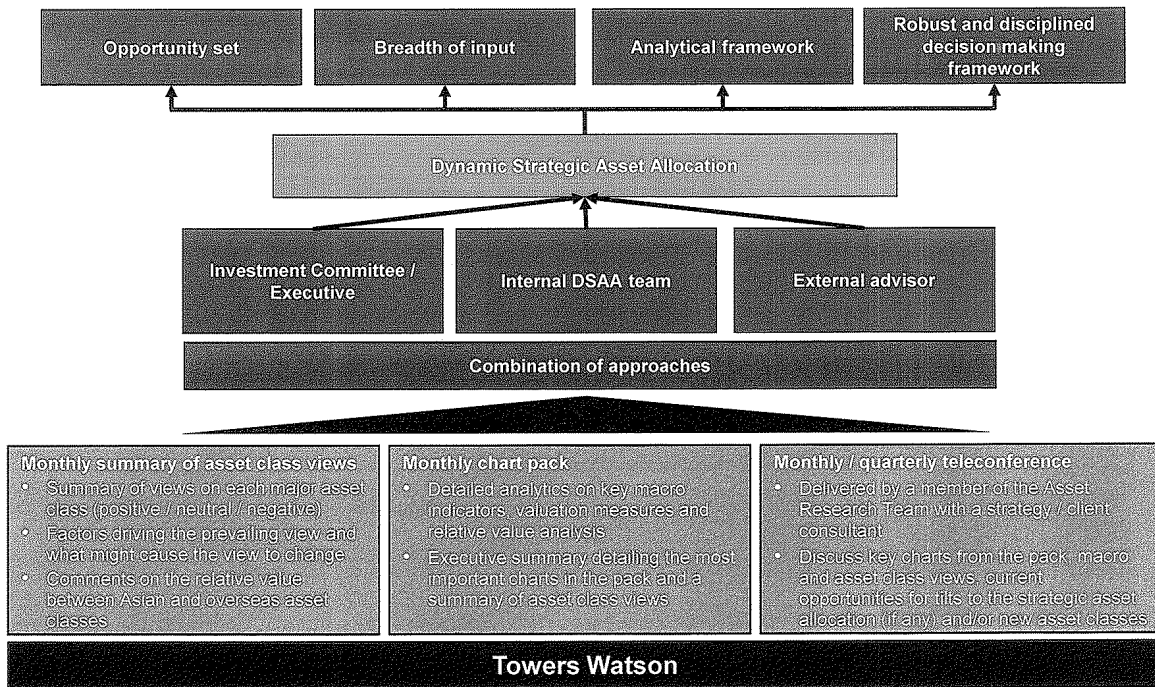
Examples of analytics – asset classes

<p>Equities</p> <ul style="list-style-type: none"> ■ Returns – short and long term ■ Earnings yield (cyclically adjusted) ■ Implied equity risk premium (dividend discount model) ■ Implied dividend yield ■ Earnings yield vs real bond yields ■ Profit measures 	<p>Credit</p> <ul style="list-style-type: none"> ■ Returns / spreads – investment grade, loans, high yield ■ Model for “fair value” corporate bond spreads ■ Implied risk premium based on different downgrade and recovery rate scenarios ■ CDS – bond basis ■ Financing costs / debt as % of EBITDA
<p>Foreign Exchange</p> <ul style="list-style-type: none"> ■ Changes in major cross-rates ■ Equilibrium real exchange rate model ■ Balance of payments as % of GDP ■ Relative interest rates ■ Relative inflation 	<p>Commodities</p> <ul style="list-style-type: none"> ■ Spot price changes ■ Returns on futures indices ■ Forward curves ■ Costs of production ■ Demand growth / Supply response ■ Supply / demand balance ■ Inventories

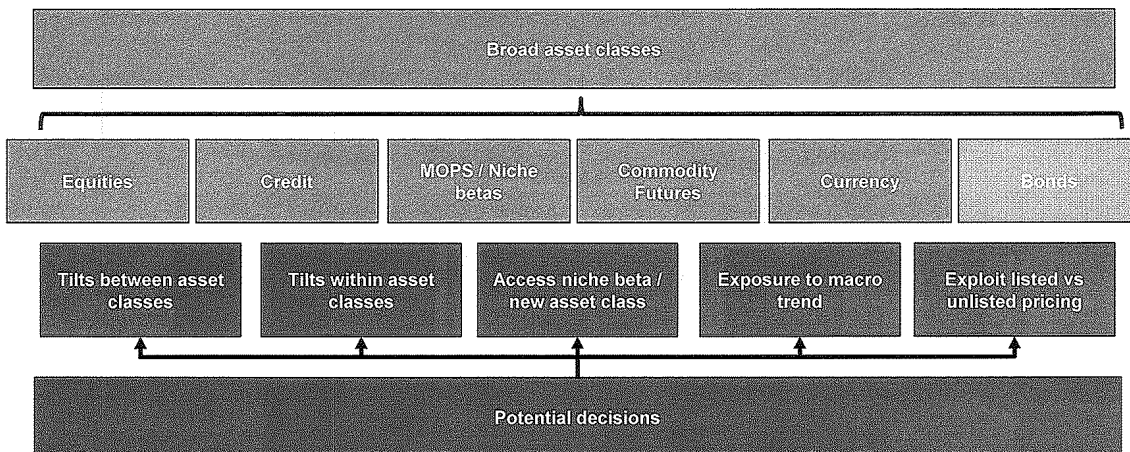
Interaction of SAA and DSAA advice



Implementation of DSAA by clients

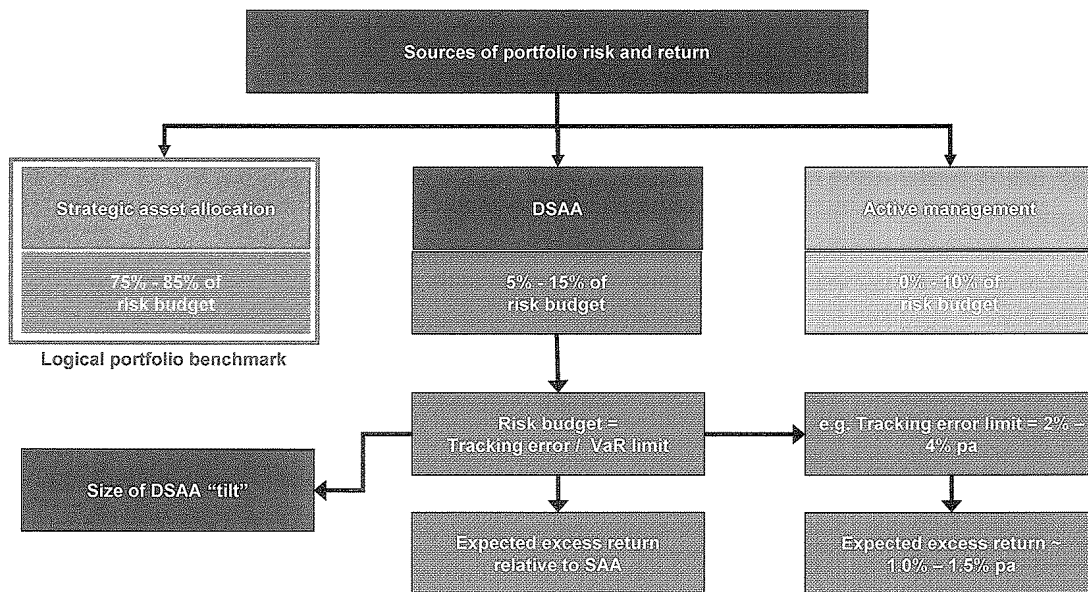


DSAA decision set



- DSAA decisions generally revolve around the composition of the return-seeking part of the portfolio
- DSAA decisions rarely relate to the split between return-seeking and risk-controlling assets
- Focus is generally on relative value between broad asset classes, and within an asset class (e.g. US vs European equities)
- The framework will become more granular over time

Allocation of the risk budget to DSAA



Incorporation of DSAA views into asset class assumptions

- A question that arises once one has medium term views on asset classes is the extent to which (if at all) these views are incorporated into our asset class assumptions
- We note that the asset class assumptions are used for the purpose of assisting in setting the Fund's strategic asset allocation
 - As a result, the assumptions are long term in nature
 - The assumption setting process (generally) assumes that markets are broadly in equilibrium and uses current market valuations as just one input into the process
 - The DSAA process is based primarily on the consideration of relative valuations and other metrics in order to establish whether asset classes are over / undervalued
 - In addition, the DSAA process does not give much information of the time frame over which reversion to "fair value" might occur, nor the price volatility that may be experienced on the way
- Therefore, there is a natural disconnect between the asset class assumptions and DSAA
 - We believe that the asset class assumptions should be used for setting the long term strategic benchmark, and then the DSAA views are used as an overlay to assess what the appropriate current asset allocation should be

Good governance is critical to success

- **DSAA isn't easy**
 - Timeframe for the decision is important
 - Funds should only embark on a DSAA programme if there is a willingness to endure underperformance for some time with a view to this paying off in the long run.
 - It is crucial at the outset to define the parameters of the DSAA process
 - How much active risk relative to the strategy the fund is willing to accept?
 - Is the purpose of the exercise to enhance returns by both underweighting risky assets when they are expensive and overweighting them when they look cheap, or is it more about risk management, so the focus is only on underweighting risky assets when they are expensive?
- **Can a unanimous view be reached easily?**
 - The dynamics of the decision making group are also important.
 - In every market environment there is always a believable rationalization of current market pricing.
 - Is it possible for the Board to take a single view and stick to it – both in the case of the strategy doing poorly in the short run, and in the case of turnover at a Board level, where new Board members may not have bought into the decision.
- **Can it be delegated?**
 - Is this something Boards are willing to delegate?

Implementation Options

- DSAA is not easy – to implement it well requires:
 - Having sufficient opportunities (and/or recognizing the impact of a narrow scope of opportunities)
 - Breadth of input
 - Sound basis for decision making
 - Robust and disciplined decision structure that can tolerate short term underperformance
- There are a number of ways that a fund could implement DSAA:
 - The Investment Committee or Executive could be the decision maker using inputs/insights from a variety of external groups
 - The Fund could hire an internal DSAA team
 - The Fund could appoint an external advisor to whom decisions may or may not be delegated
 - Combinations of these models could be used
- The most appropriate model for a fund will be dependent on the governance, resources and the degree to which the Board is willing to delegate the decision
- Towers Watson is well placed to assist in this regard

Some recent examples of DSAA

Example 1	2008/9. Recommended an exposure to insurance-based risk premia. Catastrophe reinsurance is currently attractive due to a number of structural issues in that market and the shortage of capital globally to take on insurance risk.
Example 2	Q3 2008. Suspension of rebalancing strategies. In Q3 2008 Towers Watson advised our clients to suspend their normal rebalancing strategies based on our view that equity risk had increased and that further dislocation was possible. Q4 2009 we advised clients to revisit their SAA before rebalancing recommenced.
Example 3	Q2 2008. Overweight to high grade credit opportunities by gradually averaging into the market (we took the view that it was still too early for sub-investment grade credit i.e. significant potential for further market dislocation).
Example 4	2008. Reduce exposure to commodity futures. This was due to the increased levels of contango in many futures curves and concerns that the increase in institutional investment interest had reduced the risk premium available.
Example 5	2007. Establish a medium-term exposure to emerging market currency premia. We believe that an allocation to Emerging market currencies is one of the purest ways to obtain exposure to the higher rates of economic and productivity growth in emerging markets.
Example 6	2007. Underweight LBO's within the private equity allocation. We became concerned about the high volume of fund raising, increasingly aggressive multiples and duplication in deals amongst the larger LBO funds.

DSAA offering

- Monthly “chart pack” containing key market indicators, valuation measures and relative value analysis
 - Chart pack will contain an executive summary that contains a high level summary of the most important charts in the pack and also a summary of our current asset class views
- Monthly or quarterly conference call with a member of Towers Watson’s Asset Research Team to discuss:
 - Key charts from the chart pack
 - Macro and asset class views
 - Current opportunities for tilts to the strategic asset allocation (if any)
 - Opportunities in new asset classes (if any)

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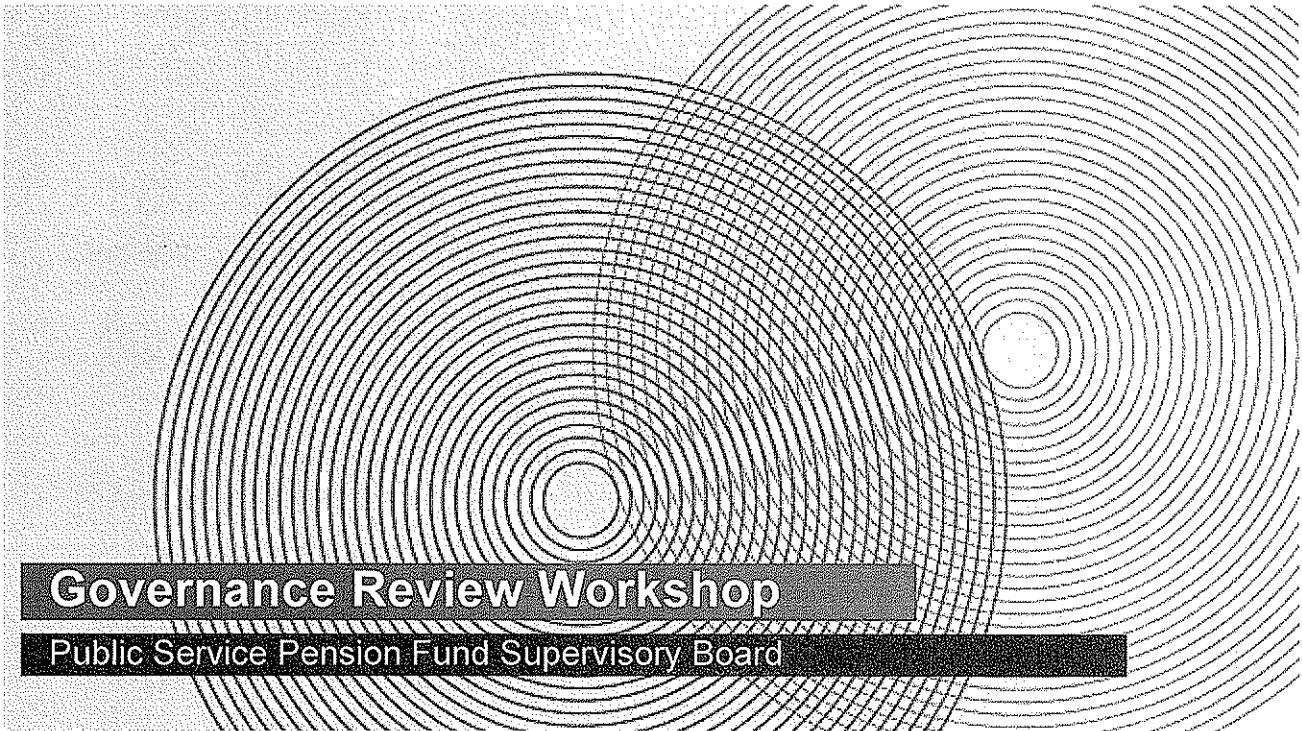
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Governance Review Workshop

Public Service Pension Fund Supervisory Board

Naomi Denning
14 September 2010

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Towers Watson's definition of governance

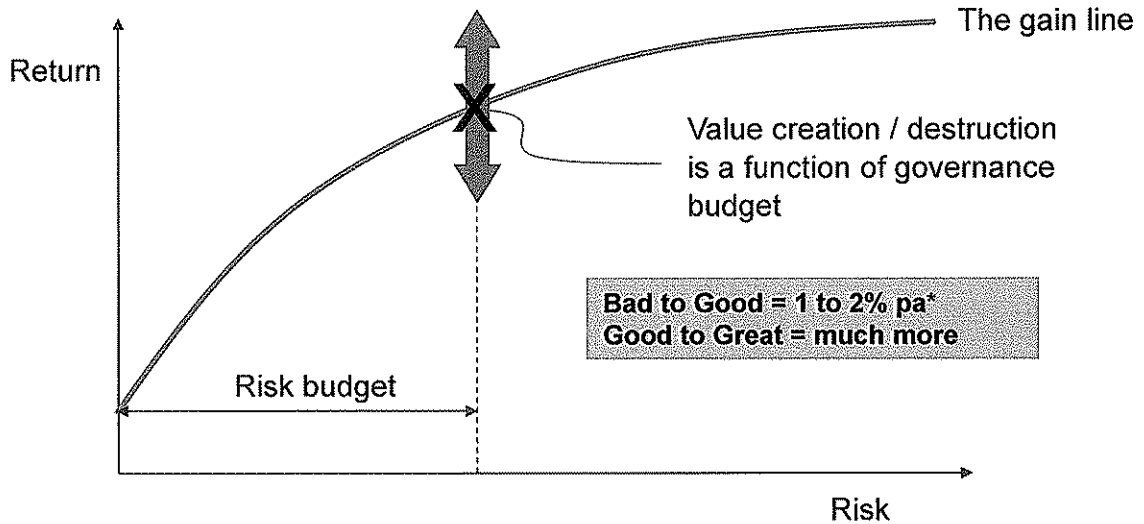
- Governance budget refers to the capacity to create value from effective actions in the chain of defined tasks and functions.

Governance = Organisational coherence x People x Process

Governance Budget		
<p>Organizational Coherence</p> <p>This refers to the coherence between the structure of the fund and the long-term interests of the fund.</p>	<p>People</p> <p>This refers to the people involved in the investment process, their skills and responsibilities.</p>	<p>Process</p> <p>This refers to how investment decision-making is managed and implemented</p>

Why is governance important?

- Governance drives wealth creation.
- The governance budget determines how successful the risk budget is deployed.
- Investment arrangements should be aligned with the Fund's governance capabilities.



* Source: Ambachtsheer letter, Towers Watson

Global Best Practice

Mission clarity, beliefs and risk budget are core attributes

- The Clark-Urwin governance study* found that the best-practice exemplar funds made frequent references to their adherence to a number of core principles which we can summarise in the six attributes below.
- Strong beliefs is amongst these core attributes
- We regard the 'Strong beliefs' attribute as one of the most critical to effective governance

Area	Core best practice factors	
Coherence	Mission clarity	Clarity of the mission and the commitment of stakeholders to the mission statement
	Effective focusing of time	Resourcing each element in the investment process with an appropriate budget considering impact and required capabilities
People	Leadership	Leadership, being evident at the Board/Investment Committee level, with the key role being the Investment Committee chairman
	Strong beliefs	Strong investment beliefs commanding fund-wide support that align with goals and inform all investment decision-making
Process	Risk budget framework	Frame the investment process by reference to a risk budget aligned to goals with an accurate view of alpha and beta
	Fit-for-purpose manager line-up	The effective use of external managers governed by clear mandates, aligned to goals, selected on fit-for-purpose criteria

* See Best-practice investment management: lessons for asset owners from the Oxford-Watson Wyatt project on governance, Gordon L. Clark (Oxford University) and Roger Urwin

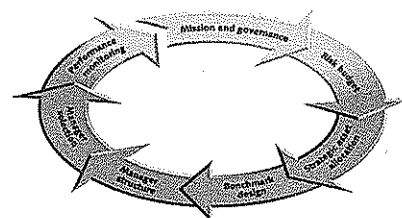
Why investment decisions require beliefs

- Beliefs are used extensively by funds already...but in an unstructured way
 - Investment decisions are complex with massive data overload so we need beliefs
 - But most beliefs are based on personal experience and opinion
 - Joint decisions reflect multiple opinions at multiple levels
 - Given the large amount of information potentially relevant to investment decisions, beliefs are essential to allow investment committees to avoid paralysis via information overload.

- The process of specifying beliefs also allows for boards to be more coherent and logical in their decisions.

- **With structured beliefs...**
 - Time is saved/ deeper treatment is given to complex decisions
 - Thinking and research can build a strong competitive base to beliefs
 - Beliefs can be layered – executive level/ board level – and gaps limited

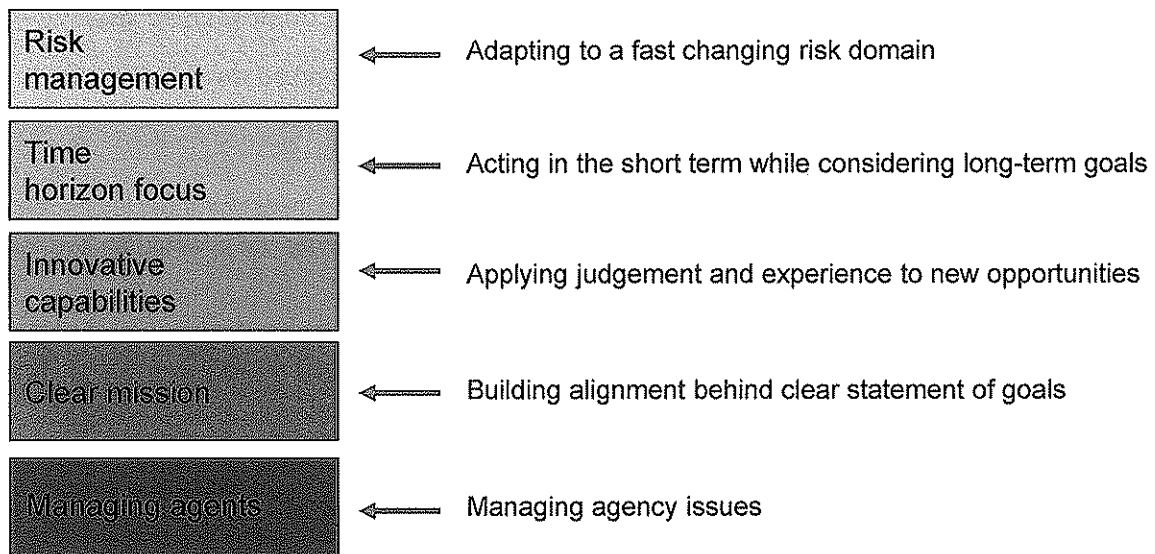
Beliefs are required in four areas



- Today's belief setting process will cover four areas

Key Areas for Positions / Beliefs	Detail	Decision level
Mission and goals	◦ Include consideration of optimal risk exposure and time horizon given stakeholder considerations	Top level
Governance	◦ What resources and processes are used in decision-making – to fulfil the mission	
Asset allocation and beta	◦ Include consideration of asset class pricing and mispricing and how the fund might exploit these beliefs	Second level
Managers and alpha	◦ Include beliefs about the conditions in which active management can add value	

5 main challenges that best practice funds must surmount



Global best-practice – core attributes

- The best-practice exemplar funds made frequent references to their adherence to a number of core principles which we can summarise in the six attributes below.

Core best-practice factors		
Coherence	Mission clarity	Clarity of the mission and the commitment of stakeholders to the mission statement
	Effective focusing of time	Resourcing each element in the investment process with an appropriate budget considering impact and required capabilities
People	Leadership	Leadership, being evident at the board / IC level, with the key role being the IC Chairman
Process	Strong beliefs	Strong investment beliefs commanding fund-wide support that align with goals and informs all Investment decision-making
	Risk budget framework	Frame the investment process by reference to a risk budget aligned to goals and incorporates an accurate view of alpha and beta
	Fit-for-purpose manager line-up	The effective use of external managers, governed by clear mandates, aligned to goals, selected on fit for purpose criteria

Global best-practice – exceptional attributes

- But global best-practice is based on additional factors which mark these funds out as exceptional
- The resources associated with fulfilling these points are considerably greater than normal.

Exceptional best-practice factors		
Coherence	Highly competent investment executive	The use of a highly investment competent investment function tasked with clearly specified responsibilities, and accountabilities to IC
People	High level Board competencies Supportive compensation	Selection to the Board and senior staff guided by: numeric skills, capacity for logical thinking, ability to think about risk and probability Effective compensation practices used to build bench strength and align actions to the mission, different strategies according to fund context
Process	Competitive positioning Real-time decision making Learning organisation	Frame the investment philosophy and process by reference to the institution's comparative advantages and disadvantages Utilize decision-making systems that function in real-time not calendar-time Work to a learning culture which deliberately encourages change and challenges the commonplace assumptions of the industry

Hard things that research tells us about governance

Key research conclusions on governance taken from Clark and Urwin

1	Governance budget	Performance is linked to the size of governance budget employed, a combination of the time, expertise and collective effectiveness of the Board set-up
2	Global best practice	The methods and behaviour of global high performing funds can be captured in a list of global best practice (GBP) factors – around 'people', 'process' and 'coherence'
3	Mission clarity	Prominent among GBP factors is the importance of clarity of the mission, the commitment of stakeholders to the mission, the measurement of the outputs relative to the mission
4	Two tier structure	Also prominent among GBP factors is the two-tier structure with Board decision-making at a high level and an executive team delegated responsibilities in a complementary role
5	Process	GBP funds demonstrate a rigour and clarity with their investment process around beliefs, risk budget and real-time reviews of managers and strategic choices
6	Chair skills in mediating	Effective Boards have chairs that manage collective commitment and optimise a limited governance budget notwithstanding differences in competency, trust and reliance
7	Chair skills in framing risk	Effective Board chairs create a strong risk management framework and dialogue by moulding individual beliefs and pre-dispositions into collective belief systems
8	Delegations of Boards	Boards should delegate more effectively, either to internal teams, or to external organisations fulfilling CIO type roles
9	Intensification under stress	Funds operating in stressed and complex investment conditions need to be able to intensify their efforts to build a macro view of opportunities and threats to position strategy
10	Risk dashboards	Stressed and complex investment conditions require sophisticated quantitative disciplines with respect to risk overlaid with qualitative treatment of scenarios and wider risks

Softer things about governance learnt the hard way

Key research conclusions on governance taken from Clark and Urwin

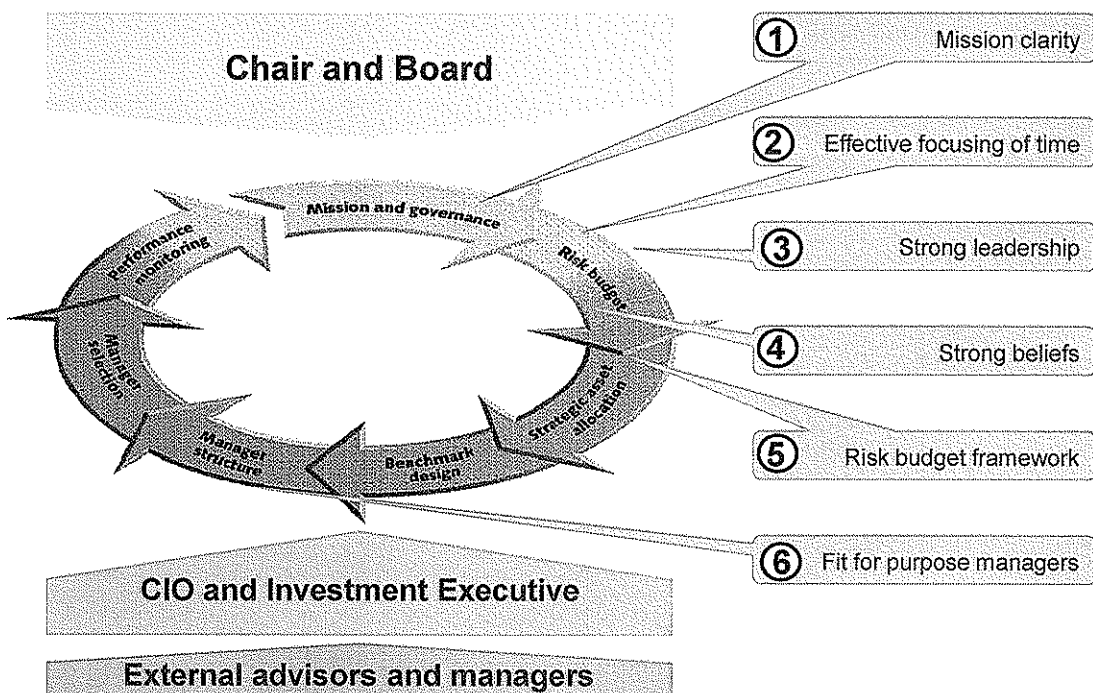
1	Board size	Investment committees do their best work at 4
2	Board choice	Getting the right sort of investment people 'on the IC bus' is critical
3	Board committees	Committees (particularly for audit and governance) are necessary to deploy scarce resources
4	Board cycles	Boards need to stay active and engaged between their regular cycle meetings
5	Accountabilities	Most funds have poor accountabilities, IC's should be accountable to Boards and executives should be accountable to IC's
6	Chairs	The Chair is very often responsible for more than half the IC's effectiveness
7	Independent Chairs	Given the need to mediate among different stakeholder interests, in highly complex areas, independent expert Chairs are generally the best type
8	Papers discipline	Time challenged Boards will find dashboards produce more effective decisions
9	Meetings discipline	Boards aim to stay high, but invariably spend a lot of time 'down in the weeds'
10	Governance budget	Governance is difficult to change, but is surprisingly responsive when change occurs

Alignment is key

GOVERNANCE MODELS	1	2		3
Decision Makers	Board	Board Inv Committee		Board Inv Committee Executive
Decision-making attributes	<ul style="list-style-type: none"> Committee style Multiple agenda Calendar-time based 	<ul style="list-style-type: none"> Committee style Focused investment agenda Calendar-time based 		<ul style="list-style-type: none"> Oversight, monitoring, performance measuring Committee style, calendar-time CIO, real-time based
INVESTMENT MODELS	Cost Minimiser	Alpha Focus	Beta Focus	Diversity and Skill Exploiter
Strategy	Mainly equities & bonds (eg 60% equities, 40% bonds)	Mainly equities & bonds (eg 60% equities, 40% bonds)	Diversity > 15% outside equities and bonds (eg 40% equities, 20% absolute return, 40% bonds)	Diversity >30% outside equities and bonds (eg 20% equities, 40% absolute return, 40% bonds)
Managers	Mainly passive	Mainly active	Passive and active	Very active: Active risk around 20% of total risk
Ideal Allocation of time				

Governance gap analysis against global best practice

Core best practice attributes



Global best practice Investment Committees and Investment Executives

- As an adjunct to our global best practice governance research, Towers Watson has developed a model structure for a best practice Investment Committee, and for the desirable responsibilities of the following roles:
 - Investment Committee
 - Investment Committee Chairperson
 - Chief Investment Officer

- The best practice structure and sample responsibilities for each of these roles are described on the following pages.

- We recognise of course that there is no single best practice model, and that responsibilities can differ within different organisations.

The 'Global Best Practice' Investment Committee

- The table below illustrates some of the structural characteristics that are observed in best practice Investment Committees.

'Best Practice'		'Best Practice'	
Number	<ul style="list-style-type: none"> • ideally 4-5 	Governance reporting	<ul style="list-style-type: none"> • substantial disclosures • governance beliefs/principles
Board composition	<ul style="list-style-type: none"> • Chair is 'semi-exec' • Representation membership + Outsiders • CIO on Committee or in attendance 	Number of meetings/days	<ul style="list-style-type: none"> • 10-12 scheduled meetings • Off-sites
Board member tenure	<ul style="list-style-type: none"> • 3 year terms • no term limits • long tenures desirable • organisational continuity 	IC core agenda	<ul style="list-style-type: none"> • items covered by impact • beliefs statements • limited time on alpha • traffic light protocols for reporting/escalating
Control over new Board members	<ul style="list-style-type: none"> • investment competency • fit with team 	IC variable agenda	<ul style="list-style-type: none"> • Joint Ch/ CIO agreement • Education/ development
Committee member evaluation	<ul style="list-style-type: none"> • annual process • performance management 		
Committee member compensation	<ul style="list-style-type: none"> • full market rates • time element 		

The 'Global Best Practice' Investment Committee

- Below is the sample of responsibilities for best practice Investment Committees

	Responsible for	Notes on the role
Central leadership role	<p>Focusing the fund on appropriate mission, goals and vision; through its decisions /interactions help it to achieve its goals</p> <p>Development of investment beliefs that support the mission</p> <p>Development of high level investment policy appropriate to the mission with associated detailed KPI's</p> <p>Establish governance framework (responsibilities and accountabilities) and governance budget</p>	<p>'Mission' clarity; explicit investment goals</p> <p>Collective beliefs critical</p> <p>Performance management</p> <p>Use of both main Board and Committee structures</p>
Leading and providing oversight to management	<p>Developing an effective working relationship with Board and CIO, contributing to teamwork/ culture</p> <p>Providing oversight to management and ensuring the CIO is carrying out its roles effectively;</p> <p>Oversight in relation to the investment beliefs/ philosophy of the CIO and their complementary fit with the Board</p> <p>Review and sign-off key investment decisions: risk budget, asset allocation</p> <p>Review other investment decision-taking: manager line-up</p> <p>Review operational aspects; in particular risk management</p>	<p>Build cohesive organisation</p> <p>Product of board/ executive more than sum of parts</p> <p>Cohesion of belief structure and competitive edge</p> <p>High impact decisions</p> <p>Lower impact decisions</p> <p>Includes audit</p>
Leading externally	<p>Ensuring effective relationships with all major stakeholders</p> <p>Building and enhancing the fund's brand</p>	<p>Sponsor, also key suppliers</p> <p>'Brand' value proposition</p>

The 'Global Best Practice' Investment Committee Chairperson (ICC)

- Below is the sample responsibilities for best practice ICC.

	Responsible for	Notes on the role
Leading the Committee	<p>Leading the Investment Committee in the fund's mission, and through deciding its high level investment policy, help it to achieve its goals</p> <p>Organising the composition, business, efficiency and culture of the board</p> <p>Heads the Committee evaluation process</p>	<p>'Mission' clarity; explicit investment goals</p> <p>Information clarity and flow;</p> <p>Performance management</p>
Leading the Executive	<p>Building the investment beliefs of the Board and their complementary aspects to the CIO/ executive beliefs</p> <p>Developing effective working relationship with Board and CIO, and contributing to the leadership culture</p> <p>Ensuring the CIO and its team is carrying out their roles effectively; leading the appointment/ replacement process when necessary;</p>	<p>Cohesion of belief structure</p>
Leading externally	<p>Ensuring effective relationships are maintained with all major stakeholders</p> <p>Building and enhancing the fund's brand</p>	<p>Particularly sponsor, and beneficiaries, also key suppliers</p> <p>'Brand' acts to strengthen value proposition and draw in talent</p>

The 'Global Best Practice' Chief Investment Officer (CIO)

- Below are the sample responsibilities for best practice CIO.

	Responsible for	Notes on the role
Assisting the Investment Committee	Assisting the Investment Committee in their discussions and decisions, particularly with respect to investment policy and goals Articulating to the Investment Committee recommendations on investment strategy, getting their engagement, being accountable to them for results	CIO can be member of IC or in attendance
Setting strategy and leading the implementation	Developing and enhancing the investment philosophy of the fund, particularly its belief structure and risk budget Managing the manager line-up through design of external mandates and selection/ de-selection decisions and inter-actions Managing the allocations (cash flows, rebalancing, tactical positions) to asset classes/ strategies within the agreed investment strategy	The CIO belief structure will go deeper than the ICC's CIO takes responsibility in real-time for these decisions CIO takes responsibility in real-time for these decisions
Building the team	Selecting and organising the internal members of the executive team Establishing operational processes for all required investment actions and being accountable for operational performance	Executive team will vary in size
Working with the TMT	Developing effective working relationship with the ICC and contributing to the leadership culture Supporting the ICC in the enhancement of the fund's brand and its stakeholder relationships	ICC and CIO have critical working relationship

Dashboard monitoring

Dashboards - theory, research and practice

The dashboard concept is an approach which we recommend Investment Committee use to more effectively manage their meeting time and agenda.

- **Clark and Urwin** (2007, 2009) showed that governance budget is a variable that can be enhanced as well as how dashboards can be used to do that
- **Eckersley** (2005) defined corporate **dashboards**
- **Kaplan and Norton** (2002) produced the influential balanced score-card methods
- **Thaler and Sunstein** (2008) demonstrated that all decision-making incorporates distortions producing unhelpful actions and how 'decision architecture' could filter out these actions and streamline decisions

1. The dashboard as a tool to increase governance budget

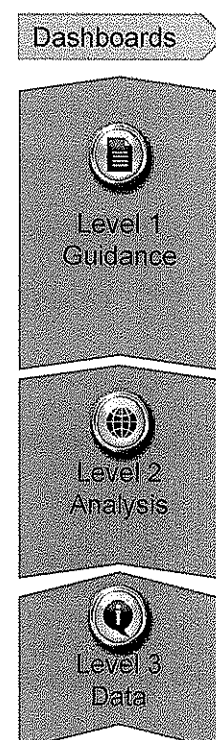
2. Dashboards have been developed to support business

3. Dashboards can be adapted to nudge faster better decisions

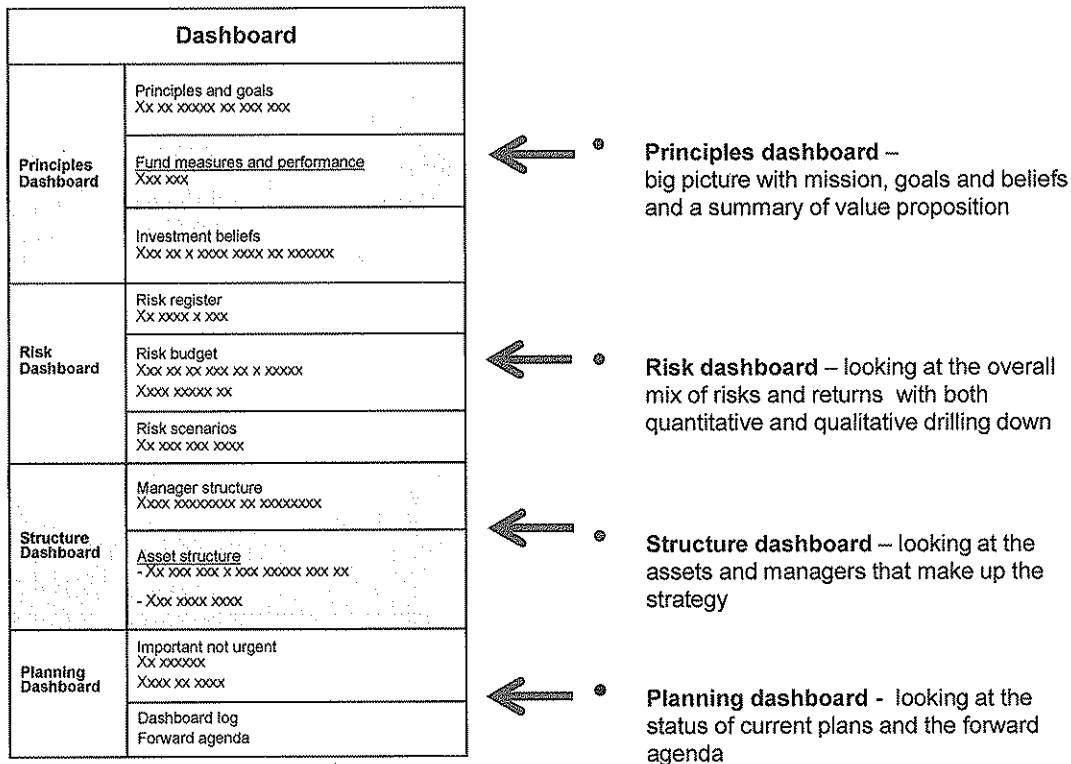
The dashboard concept

What is in the dashboard?

- Analysis and guidance needed for decisions, not just the data
 - Dashboard papers are divided into 3 section which we term 'levels' as they indicate the priority of importance
 - Level 1 refers the key paper for the meeting. The paper is designed to highlight and provide guidance on the decisions required for in the Investment Committee meeting.
 - Level 2 contains separate papers providing the core analysis and commentary to guidance suggested in Level 1. These reports can be organised under different headings as suggested in the following page.
 - Level 3 papers are further supporting material which we consider as supplementing the Level 1 and 2 papers, providing deeper and broader briefing
 - The hierarchy of these papers is an important design feature. Investment Committee members can spend time on important items bin Level 1, but drop down to Level 2 and on occasions to Level 3 to gain fuller understanding. The navigation tools help to make this form of covering material fast and efficient. These are summarised overleaf.



Structure of a dashboard



How dashboards improve monitoring

- We use a simple coloured tab rating to rank the importance of issues within each dashboard category:
 - Red octagon for Resolution:** this item requires immediate resolution, with a **decision**
 - Yellow triangle for Attention:** this item requires **attention**
 - Green square for Information,** this item is for information, and **no other action**
- Issues within the dashboard can then be easily prioritised based on their importance and incorporated into the Investment Committee's meeting agenda, systematising meetings and decisions. Therefore, dashboard facilitates better meetings, not just better reporting. Please see next page for an example.
- Electronic delivery of the dashboard can streamline meetings and reporting and enable Investment Committee members to navigate their way around many sources of information, based on their needs. All papers (Levels 1 to 3) can be linked in to the dashboard electronically through links, enabling Investment Committee members to access them using links.

How dashboards improve monitoring

- Example: mapping dashboards to meeting agenda

Dashboard		
Principles Dashboard	Principles and goals Xx xx xxxxx xx xxx xxx	
	Fund measures and performance Xxx xxx	
	Investment beliefs Xxx xx x xxx xxx xx xxxxx	
Risk Dashboard	Risk register Xx xxx x xxx	
	Risk budget Xxx xx xx xxx xx x xxxxx Xxxx xxxxx xx	
	Risk scenarios Xx xxx xxx xxx	
Structure Dashboard	Manager structure Xxxx xxxxxxx xx xxxxxxx	
	Asset structure - Xx xxx xxx x xxx xxxxx xxx xx - Xxx xxx xxx	
Planning Dashboard	Important not urgent Xx xxxxx Xxxx xx xxx	
	Dashboard log Forward agenda	

Agenda		
1	Asset structure For decision	Xx xxx xx xxx x xxx x x xxx xxx xxx x x xxx x xxx xxx 45 minute item
2	Risk budget For discussion	Xxxx xxx x xxx x x xxxxxx xxx x x xxx x xx 30 minute item
3	Manager structure For discussion	Xxx xxx x x xxx xxx x xxx x xxx xxx x x xxx x xxx x xxx xxx x x xxx xxx 30 minute item
4	important not urgent For discussion	Xxxxx xxx x xxx x x xxxxx x xxx xxxx x x xxx x x xxx xxx xxx 30 minute item
5	Dashboard For noting	-Xxxxxxxxxxxx xx xxxxx - xxxxxx 15 minute item