出國報告（出國類別：考察）

金融海嘯後資產管理機構之
資產配置與風險管理之因應

服務機關：公務人員退休撫卹基金
監理委員會
姓名職稱：劉執行秘書籐、
蔡組長長銘、
陳稽察員豐隆
派赴國家：澳洲(雪梨、墨爾本)
出國期間：**98/12/04-98/12/13**
報告日期：**99/3/7**

摘要

由於 2008 年金融風暴襲擊全球金融市場，各國投資人及投資機構哀鴻遍野，甚至波及政府機關，致部份國家如冰島等陷入風雨飄搖的局面。退休基金因投資金額鉅大，投資面廣，雖然因分散投資而多少減緩股票投資面的損傷，然因此波金融海嘯既急而劇烈，即使政府保證之 A 級債券亦受嚴重波及，故許多人畢生積蓄及養老之所賴，在此波金融大海嘯下頓時失去依靠，對已退休或屆退休之人士傷害尤深。

2009 年股市開始自低點復甦，各國股市紛紛在短期內創下極高的報酬率，雖然股票市場乍似冬去春來，但各國的高失業率並未真正反映出春燕歸巢的喜訊。這次的重大打擊，迫使潛藏在股市波峰下的怪現象均現出原形，如馬多夫等詐騙手法均一一現形。也迫使大型資產管理公司深切反省投資方式及風險管理機制是否落實，及是否能真正反映經濟實質面。

此次訪查過程，對退撫基金實際操作的瞭解與未來發展助益甚大。我們瞭解了澳洲的經濟復甦快速，由於與中國等開發中國家經濟體貿易依存關係密切，故目前為止各參訪公司對澳洲經濟仍見樂觀。對全球經濟與美國經濟的預測是，目前已脫離景氣谷底，雖然預期全球景氣一舉復甦至海嘯前夕水準機會不大，但應可緩步恢復元氣。此外，各公司對自身投資管理方式、移轉管理、風險管理等方面亦有部份說明，故除於報告本文中彙整其重要結論外，並將各公司所提供之相關資料(含諸多表格、圖表等)亦置於附錄中供參。

雖科技日新月異，投資知識也代代傳承而下，但水能載舟亦能覆舟，正由於技術進步，反使投資風險加大，畢生努力一夕消失的慘況再次如歷史所載重新上演，新科技並未使後代投資人脫離血本無歸之噩夢。此次國外考察之行，期盼藉由參訪先進國家退休基金制度及相關營運經驗，帶給退撫基金不同角度的新思維。也期盼多方參酌他人經驗後，退撫基金得以減少潛在的學習成本，更迅速而有效率地為基金參加者確保老年退休生活之所需。

目錄

1. 考察目的

全球股市自 2007 年 10 月攀升到高點後，開始逐步下跌，到 2009 年 1 月底共蒸發了 51 兆美元的市值，其中雷曼兄弟破產前的 1 年時間內，跌 16 兆美元，破產後下跌 35 兆美元。亞洲開發銀行 2009 年 3 月 9 日的報告指出全球財富共縮水 50 兆美元，這金額雖已計入了股票市值下跌、抵押貸款和其他資產擔保的債券價值下降等項目，但不包括衍生性金融商品。

這些損失的單筆項目中，其中損失最大的是全球退休基金資產 2008 年減少 18％，從上一年的 30.4 兆降至 25 兆美元。房地產僅 REITs 資產證券化部位，就減少了 1,600 億美元；阿布達比投資局管理的主權基金資產從 2007 年的 4,530 億美元下降至 2008 年底的大約 3,280 億美元，一年內損失約 1,250 億美元；科威特、新加坡主權財富基金則損失高達 310 億美元。而釀成風暴最嚴重的雷曼兄弟，所發行的全球各類債券均成壁紙，估計造成至少 1,200 億美元的損失。

2008 年金融海嘯後，許多國家退休基金損失慘重，虧損幅度約在 20～40％。但是，若以過去 15 年的長期報酬率衡量，即使受金融海嘯影響，包括瑞典、美國和英國的退休基金卻還是能夠維持正報酬，平均年化報酬率分別有 11.8％、10.6％及 9.2％。足見雖然短期內股票市場的風險容或驚人，但長期而言仍是資金打敗通膨並創造良好收益的來源。此次各國股市在風雨飄搖中迅速回升，雖多數尚未回復至金融海嘯前的水準，但對各國退休基金而言仍回補了相當大的缺口。

澳洲在金融海嘯期間亦曾遭逢相當大的貨幣及股票市場衝擊，但其後之回升速度領先全球多數國家。為了解澳洲經濟有何特別之處及澳洲資產管理公司對金融海嘯後全球經濟預測與管理方式之變化，爰於 2009 年底規劃造訪景順投信澳洲分公司(Invesco Australia)、摩根大通銀行澳洲分行(JPMorgan)及美國道富銀行(State Street Global Advisors, SsgA)，就金融海嘯後全球經濟、美國、澳洲經濟及資產管理公司相關投資管理方式等議題進行討論與資料蒐集。

2. 行程安排

考察日期：98 年 12 月 4 日至 98 年 12 月 12 日

日期	行程	接待人員名單
2009/12/7(一)	參訪景順投信(Invesco)，討論議題： 1) 澳洲固定收益證券市場 2) 澳洲股市 3) 澳洲市場總覽	◆ Mick O’Brien, CEO Invesco Australia ◆ Tony Edmonds, Senior Analyst, Global IG Credit Research ◆ Jackson Leung, Head of Multi-asset Class Team ◆ Nicole Schnuderl, Senior Portfolio Manager
2009/12/8(二)	自墨爾本轉機至雪梨	
2009/12/9 (三)	拜會美國道富銀行，討論議題： 1) 資產配置及貨幣管理 2) 投資組合之風險管理	◆ 黃總經理素貞 ◆ Ian Martin, Senior Managing Director & head of SSGM and IS Australia and New Zealand ◆ Chris Loong, Senior Portfolio Manager and Head of the Asset Allocation and Currency Management Group, SsgA ◆ Rob Goodlad, Managing Director, SSgA Australia ◆ Craig Slater, AVP, Risk Management ◆ Andrea D’Abramo, AVP, Risk Management, SsgA

2009/12/10(四)	拜會摩根大通銀行，討論議題： 1) 澳洲市場簡介 2) 摩根大通外匯操作實務 3) 移轉管理	◆ Keith Fleming, Executive Director ◆ Gemma Sim, Vice President ◆ Angus St John, Vice President
2009/12/11(五)	拜會美國道富銀行，討論議題： 1) 道富全球資本市場事業部門及保管銀行部門總覽 2) 澳洲市場總覽 3) 借券融資 4) 投資組合解決方案	◆ 黃總經理素貞 ◆ Francesco Squillacioti, Senior Managing Director ◆ Jason Yip, Managing Director, Securities Finance, Asia Pacific ◆ James Woodward, VP, Portfolio Solutions, SSGM

3. 參訪機構簡介

3.1.景順投信(Invesco)

1978 年，該公司創辦人 Charles W. Brady 認爲未來資產管理市場將蓬勃發展，與其 8 位合夥人以 4 億美元向其雇主購入公司的退休基金管理部門，於美國亞特蘭大設立 Invesco。2005 年春天因經營 DC 制退休金行政業務改變，Invesco 將經營重心轉向單一資產管理，並將 AMVESCAP 退休金公司出售。Invesco 本來 Amvescap PLC 集團旗下公司，於 2007 年 5 月時，該公司股東同意將公司由 Amvescap PLC 更名爲 Invesco PLC(代號由 AVZ 更新爲 IVZ)，於 2007 年 11 月將上市地由倫敦(LSE)改爲紐約證交所(NYSE)，並於 2007 年 12 月 4 日於 NYSE 重新掛牌上市，註冊地改爲百慕達。

Invesco 集團旗下公司包含：Invesco Aim (投資顧問)、Invesco Trimark(加拿大投資顧問)、Atlantic Trust (財富管理)、Invesco(資產管理)、Invesco Perpetual(英國投資顧問)、Invesco PowerShares(ETF) and WLRoss &Co(私募股權、對沖基金等)。

2008 年 8 月 20 日， Invesco 普通股納入 S&P 500 指數成份股。 至 2009 年底爲止，Invesco 全球管理股權數額達 204 億美元。Invesco 在 2009 年購併摩根史坦利的個人財富管理業務，購併價格爲美金 15 億元(1/3 以現金支付，2/3 以股票支付)，此次購併使得 Invesco 管理的資產增加 1200 億美元，並使 Invesco 增加 650 位在投資、配銷與營運方面的專才，也使得其人才、管理資產、客戶群都更爲分散。

Invesco 在澳洲的分行自 1989 年成立已有 20 年，自 2001 年被 Invesco 購併後，管理資產規模達澳幣 41 億元，2009 年營收達 8.3 億美元。

3.2.美國道富銀行(State Street Bank and Trust Company, SSgA,)

道富環球投資管理於 1978 年成立，專注於創新的數量化投資服務，其投資策略建基於先進的電腦化投資組合管理方法。道富環球投資管理是全球第四大經理人，於 2008 年 12 月 31 日管理的資產達到 1 兆 4 千億美元。道富環球投資管理在全球 27 個城市設有辦事處，在阿姆斯特丹、班加羅爾、波士頓、法蘭克福、香港、倫敦、米蘭、蒙特利爾、慕尼黑、巴黎、雪梨、新加坡、東京及蘇黎世設有投資管理中心。

道富環球投資管理已成爲香港主要投資經理人之一。道富環球投資管理於 1990 年成立，於 1997 年發展爲全面服務的投資中心。除了業務拓展、爲日本以外的亞洲客戶提供投資組合管理及客戶服務外，香港分行更設有交易部，負責道富環球投資管理在亞太區的股票買賣活動。

美國道富銀行(道富銀行)是盈富基金的信託人。道富銀行專注爲世界各地金融資產服務，截至 2008 年 12 月 31 日，其託管資產達 1 萬 2 千億美元。道富銀行於 1924 年獲美國第一個共同基金聘任替基金提供會計及保存紀錄服務；自此，道富銀行一直爲各類型客戶提供服務，包括政府機構、中央銀行、銀行、證券交易所、投資公司、經紀／交易商、保險公司、互惠基金、公共及私人退休基金、企業、非牟利機構及大學等。

道富銀行於 1792 年成立，業務性質係完全服務機構投資人(institutional investors)，目前在 27 個國家有超過 27,000 位員工。道富銀行集團底下共分三大領域，即全球投資(Global investments)、全球市場(Global Markets)及全球服務(Global Servicing)。全球投資部門，掌管 1.6 兆美元的資產規模，是目前世界最大的機構法人資產管理人，服務的機構客戶超過 2700 間，提供超過 280 種不同的投資策略。

全球市場部門主要是提供各類投資商品的專業研究，並實際執行交易。所有資產類別加總起來，在 2008 年總成交金額超過 14 兆美元。此部門可提供創新投資組合策略、交易流程最佳化服務、跨市場與投資類別之全球連結性服務、借券服務及移轉管理等等服務類別。

道富銀行的全球服務部門是全球最先進的投資服務提供者之一，目前保管資產計有 17.9 兆美元之多，是道富銀行三部門中最大者。全球服務部門提供基金會計、行政、保管、投資運作、委託代操、交易記錄、績效分析等等服務。目前有 40 個主權基金與眾多央行保持業務往來。

3.3.摩根大通銀行(JPMorgan)

摩根大通集團（JPMorgan Chase & Co.），總部位於美國紐約市，總資產 2 兆 360 億美元，總存款 1 兆 093 億美元，佔美國存款總額比例爲 10.51%，分行 5410 家爲僅次於美國銀行的美國第二大金融服務機構，業務遍及 50 多個國家，包括投資銀行，金融交易處理，投資管理，商業金融服務，個人銀行等。現時的摩根大通於 2000 年由大通曼哈頓銀行及 J.P.摩根公司合併而成，並於 2004 年與 2008 年分別收購芝加哥第一銀行和美國著名投資銀行貝爾斯登和華盛頓互惠銀行。

摩根資產管理（J.P. Morgan Asset Management）隸屬於摩根大通集團（JPMorgan Chase & Co.），在台設有摩根富林明投信、摩根富林明投顧及摩根富林明證券，爲台灣投資人提供國際級理財諮詢及資產管理服務 ，產品涵蓋股票、固定收益、對沖基金、私募、地產與多重貨幣管理等，在台灣經營超過 20 年，，前身「怡富資產管理」(JF Asset Management）1970 年由港商「怡和集團」與英商「富林明集團」合資成立， 2001 年正式納入摩根大通旗下，爲台灣地區投信基金規模前十大資產管理公司。

摩根資產管理負責摩根大通集團之全球資產管理業務，據 2007 年 9 月底統計，總管理資產超過 11,634 億美元，包括固定收益資產（Fixed Income）5,542 億美元、股票資產（Equity）3,785 億美元、平衡資產 1,110 億、其他類型資產 1,198 億美元，爲全球前十大主動管理（Active Management）資產管理公司，於全球 40 個城市超過 699 位專業投資研究人員（包括研究員、分析師、以及基金經理人等），提供國際金融機構、法人與個人多元、即時的資產管理服務，包括共同基金管理與專戶資產管理等。

2008 年 9 月 25 日美國聯邦存款保險公司接管華盛頓互惠將其大部分資產(包括存款，但不承擔債務工具)以 19 億美元出售給了摩根大通(JP Morgan Chase & Co.)。摩根大通成爲美國最大的儲蓄銀行。這是美國歷史上規模最大的銀行倒閉案。摩通大通也爲了 WaMu 壞帳減值 310 億美元。

2008 年金融海嘯發生時，許多全球性資產管理公司受到重大衝擊，花旗銀行亦須接受美國政府鉅額資金挹注方能存續。全球公認受創最輕，並反而一舉擴大其版圖的即是摩根大通銀行，同時獲退撫基金遴選爲海外資產之合作保管銀行。

4. 澳洲退休金簡介

4.1. Superannuation 之沿革

澳洲退休金制度 superannuation，起源於 1850 年左右的私人退休基金，當時僅有部份銀行、大型私營企業及政府爲資深勞工支付退休金，各州政府則於 1890 年代末至 1900 年代初期陸續跟進。直至 1985 年，適用於多數勞工的退休金計畫在政府與工會達成協議後開始運作；雇主強制提撥係於 1992 年正式實施，澳洲退休金提撥率由之前平均薪資的 3%，調高到目前的 9%，且係依法由雇主保證提撥，員工亦可自願提撥退休金以提高老年儲蓄。澳洲 Superannuation 制度近年來總提撥率由最初的 5%升高至 2002 年的 15%，其中無論是僱主、受雇者或是政府的提撥率皆有逐年升高的趨勢。迄 2009 年底止，澳洲退休金總市值已高達 1.1 兆澳幣(約 1 兆美元)。

4.2.制度架構

Superannuation 的制度設計，勞工個人的帳戶內，包括雇主強制提撥及自願提撥資金所共同撥繳的基金。勞工在達到法定最低年齡前，除特定條件之外，不得自帳戶中提領退休金。澳洲於 2005 年起開放符合資格的勞工具有選擇投資標的之權利，基金屬於個人名下，勞工得將名下的不同基金合併爲一個帳戶。

澳洲政府所訂的制度管理原則爲提供有效的產品及顧問規範，但同時對基金或投資人的選擇維持低度干預。正因如此，致該國退休金商品眾多且分工細密，除商品製造及銷售分工明確外，尙包括投資管理(investment manager)、資產顧問業(asset consultant)、信評機構(rating agency)、財務顧問(financial planner)等週邊相關產業均有長足發展。

因此可見，政府在制度設計的角色爲提供法律規範、保障投資人權益，但原則上課責於個人需自行負擔儲蓄退休基金的責任，政府並不提供保障機制。

澳洲政府用財稅方法鼓勵退休人士以年金形式提款，以確保退休人士在退休後能享有不間斷的穩定收入。澳洲政府對退休人士以年金方式提款不徵稅。假如退休人士以一次提領方式提款，必須就其超過「合理權益限制」以上的款額納稅。「合理權益限制」自 1994 年引入澳洲退休金管理制度，這項限制是澳幣 418,000 元的一次提領款額，

或是澳幣 836,000 元的一次僅提一半之權益。若退休人士以一次提領方式提款，在「合理權益限制」以上的款額須納稅 30%，而「合理權益限制」以下的款額須納稅 15%。

4.3.退休金基金類型

在 Superannuation 制度下，計畫參與者得自行決定加入雇主指定的基金(employer fund)、產業基金(industry fund)或零售基金(retail fund)等方式將提撥的資金投入該既有基金，或與其他人(最多 3 人)建立小型基金(small APRA fund)或自行管理基金(self-managed fund)。此外，參與者亦可選擇將資金投入保證本金的退休儲蓄帳戶。其中，各類型特色詳列如下：

1) 行業基金(industry fund)－多重雇主的退休基金，往往是由雇主公會及工會等成立，並涵蓋特定的一個或多個行業。
2) 零售基金(retail fund)－由銀行、保險公司或基金管理集團等合格發行者成立並開放予大眾供款投入的基金。發行者只要依一定程序向澳洲稅務局(ATO)申請並登錄，即屬合格的 superannuation 基金。由於該類基金多經由顧問(financial planner)介紹，近年來成長快速，最為普及，但同時由於投資人需自行負擔顧問費用，因此此類基金的管理費亦相對較高。
3) 自行管理基金(self managed superannuation fund)－投資人數低於 5 人，且必須簽信託契約，此外，所有成員均必須參與投資決策的過程。
4) 小型基金(small APRA fund)－成員少於 5 人 且必須指定一獲核准的信託人(trustee)。
5) 企業基金(corporate fund)－為單一雇主或集團雇主發行，僅提供特定公司的雇主及勞工提撥金額投入。但該類基金由於對企業而言成本過高且過於複雜，資產規模近年來呈現下滑的趨勢。
6) 退休儲蓄帳戶(retirement saving account)－於 1997 年引進，由銀行或其它接受存款機構所開立的特殊存款帳戶。

4.4.制度設計特色

◎不保證收益，但有稅率優惠

澳洲退休金制度有幾項規定與我國不同，國內退休基金大多保證銀行兩年期定存利率的最低保證收益，但澳洲政府不保證投資收益，澳洲退休金設有稅負上的優惠，因此願意投入退休金帳戶的人數眾多。

2003 年 7 月 1 日開始，澳洲政府針對年收入在一定金額以下的低所得勞工，採取了相對提撥的鼓勵機制。符合資格的勞工每提撥 1 元澳幣的稅後金額，最高可獲得由政府自動相對提撥的 1.5 元澳幣，提撥上限為 1500 元澳幣，且會隨著勞工所得的增加而減少。

目前澳洲政府規定，員工每月所得在澳幣 800 元以上者，需強制提撥薪資的 9% 進入退休金帳戶。不過由於提撥金額在稅率上享有優惠，只要員工提撥退休金，便能享有 15%的所得稅優惠稅率，比起正常稅率優惠許多。在額外提撥的部分則在資本利得方面享有稅負減免，提領時亦免稅，唯一的缺點是這筆錢在年齡未達 55 歲或 60 歲前不得提領，降低不少年輕人的投資意願。

稅負優惠鼓勵自行提撥，高所得勞工可在雇主同意下選擇以稅前提撥或薪資犧牲(salary sacrifice)的方式增加提撥，由於 15%的提撥稅率低於所屬正常所得稅階，具有積極鼓勵提撥的意味。

勞工同時可為低收入或無收入的配偶提撥退休金，並享有一定數額的稅額減免優惠。

◎市場限制少，可選擇之標的多

澳洲政府逐步擴大自選標的適用對象範圍，分別在 2005 年 7 月 1 日及 2006 年 7 月 1 日，開放更多符合資格的退休金計畫參與者(相關規定由各州政府訂之)得自行選擇投資標的，勞工一年內並享有一次轉換投資標的之權利。

以 2005 年 6 月 30 日的資料為例，約 45.1%的基金提供自選標的服務，其中以零售基金選擇性最多，平均有 61 個標的可供選擇，產業基金、公務人員基金則平均分別有 9 個及 6 個投資標的，企業基金平均有 4 個標的。

以選擇的情況來看，約有 55.7%的資產投注於預設的投資策略(default option)上。多數預設投資策略以股票為主－澳洲及國際股票各佔 33%及 23%，佔 13%的澳洲債券次之、其它資產佔 10%，不動產投資佔 8%，現金及國際固定收益則各佔 7%及 5%。

澳洲政府僅負監督責任，檢視退休金制度是否健全，並由稅務局、證券投資委員會、及金融服務監管會共同負起監督責任；因此，澳洲政府直接對退休基金市場的干擾極少。

至於基金操盤方面，則完全交由專業基金經理人負責，一方面減輕政府財政負擔，另一方面，資金可透過股市回流到當地上市櫃公司，也達成刺激本土經濟效果，活絡融資、融券市場發展。

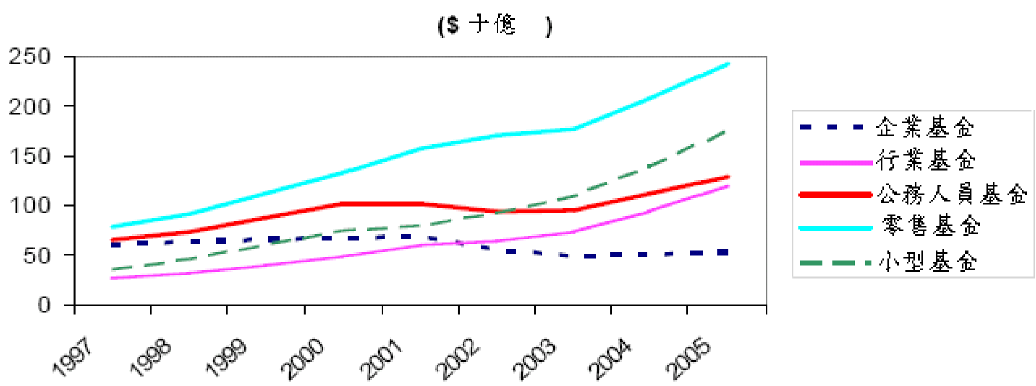
◎避險、私募基金加入戰局

澳洲退休金市場有 10%以內資產配置於避險基金與私募基金或另類投資。澳洲當地退休金市場選擇標的眾多，限制極少，其資產分佈 34%投資於國內股市、23%則在國際股市。另外，避險基金與私募基金也在選擇標的範圍內，但由於退休金市場係建立在業者與政府互信基礎上，基金管理業者也希望嚴控投資風險，一般說來避險基金部位都不會太高。

◎退休金加持，基金產業成長快速

在過去 15 年當中，澳洲基金產業無疑是當地金融服務業中最具活力的產業區塊，從 1995 年起澳洲境內投資基金資產規模，若依每年 10%的增長速度計算，2015 年時澳洲資產管理業的總資產規模將達到澳幣 2.4 兆元。

● 澳洲各類退休基金資產變動狀況(1997~2005 年)



5. 參訪主題重點整理

5.1.全球經濟景氣總覽

自 2008 年 9 月 15 日美國雷曼兄弟公司倒閉以來，2008 年下半年全球股災肆虐，全世界經濟規模在 2009 年時較前一年度縮減了 0.8%，創下自國際貨幣基金自 1970 年開始蒐集資料以來最差表現，也是全球生產成長率首次出現負數的時刻。由於全球央行的低利政策激勵，自 2009 年 3 月開始，全球期貨市場和股市雙雙出現反彈，全球主要股票指數亦因此出現了驚人的漲幅。

雖然已開發國家的股市、房市紛紛上漲，然而失業情況仍未見明顯改善，11 月歐元區國家的平均失業率高達 10%，是 1999 年 9 月以來最高水準；其中，衰退最嚴重的西班牙失業率更高達 18%。民間投資和消費亦尚未出現明顯增長趨勢，金融機構的放款意願仍處於較低的水準，故從這些面向來看，全球經濟還未達到穩健復甦的程度。

此波經濟緊縮反映出兩個現象：

1) 美國國內需求低迷，尤其是消費者支出嚴重衰退：由於美國長期爲世界多數產出之消費國家，許多以製造業爲重之國家出口均銷往美國等已開發國家以爲其最終消費。但因美國本身過度消費與過度風險性投資所累積的巨大泡沫吹破，導致美國國內房地產、股市、債市、勞動市場全部陷入困境，巨大的衝擊向外擴散下，許多國家也同受池魚之殃。由於美國就業市場依舊嚴峻，至 2009 年底美國失業數字達到 2 位數以上，致其國內消費疲弱不振，亦同步使得全球性景氣復甦仍需更長時間才能恢復。

2) 世界貿易崩解：爲拯救全球性的景氣寒冬襲擊，各國紛紛以強力的貨幣及財政政策紓困，以防止 1930 年代大蕭條再現，致形成全球貿易秩序有若干保護政策之現象，財政貨幣寬鬆政策下，亦形成全球經濟體出現虛胖之現象。由於美國目前國內政府舉債極高，失業狀況仍未見明顯好轉，使得美國長期身爲世界消費大國的身份一時無法發揮作用。各國中，以中國大陸復甦腳步最快。中國大陸一反過去強力輸出之作風，改爲大舉擴展國內消費市場，強勢消化其製造能力，減緩失業惡化速度。雖一度亦見景氣回落，然而因家電下鄉等激勵政策奏效，未被美國消費不振所拖垮，反逆勢增加了其對全球復甦的影響力。此時歷經多年的中國製造、美國消費的貿易

形勢似出現了扭轉契機。

據統計表示，世界經濟成長率長期平均為 3.6%，2008 年全球經濟成長率低於長期平均數，2009 年則轉為負值，足見此波金融海嘯之烈。雖然各國政府已努力挽救，但 2010 年預估全球景氣仍將低於長期平均數。雖然各國政府努力以刺激性的財政政策與貨幣政策來拯救景氣，此舉亦的確產生減緩景氣下墜力道之效果，但因政府的紓困策略往往力道不足且過於仰賴出口來提振景氣，政府的挽救措施反而難以發揮推動經濟回春的火車頭效應。

此外，由於各國紛紛採取寬鬆貨幣政策來救市，雖然補足了投資市場的活血，不致產生更大的災難性恐慌，但也因此種下潛在的通膨壓力。為了抑制隨時會引爆的通膨現象，已有數國調升基本利率以為因應，其他各國央行亦蠢蠢欲動，因此產生各國政府隨時會改採緊縮性貨幣政策的不確定性大增，在失業率尚未明顯恢復時，對全球經濟將來的發展方向蒙上一層陰霾。

道富銀行對未來全球經濟的展望是，全球股票市場仍將持續上漲，然而新興市場將領先全球表現，當全球經濟復甦訊號出現時，新興市場股市很可能會加速往上竄升，引領全球原物料需求上揚。且由於美元長期走勢看跌，故預期油價仍將持續上漲，兩年內將回到 90 美元以上。公司債與公債利率差異將持續減少，使得公司債成為良好的投資商品。

5.2.美國經濟總覽

2008 年初美國悄悄步入經濟衰退(recession)階段，並於下半年景氣急轉直下，成為全球金融風暴中心。美國 2009 年全年經濟收縮 2.4%，是 18 年來首次見到收縮的狀況，亦創下 63 年來最大跌幅。但美國經濟在 2009 年上半年逐漸浮現經濟復甦的嫩芽，例如美國房屋建造、商品零售、工廠訂單、貨物運輸，出口、存貨囤積、工業生產等數字均呈現穩定狀況，失業率也逐漸緩步回落，因此於 2009 年第 3 季開始美國經濟即開始出現正成長。

美國經濟未來發展正反因素皆有，其中較爲正面的因素是：刺激政策仍持續進行中且存貨已成長 5%；即便如此，目前存在的隱憂仍多，如美國一向是全球景氣復甦之所賴，但美國國內自身需求不振，如商用不動產市場停滯不進，火車頭工業如房市與車市等仍未見明顯復甦升溫現象，此外，借貸條件仍偏嚴苛，不利資金活水在市場上流動，勞動市場在 2009 年底仍呈 2 位數字之高失業率，在在均爲美國景氣復甦蒙上一層陰霾。

最後是政府支出部份。美國經濟 2009 年從衰退走向復甦，是政府寬鬆的貨幣政策、積極的財政政策以及爲不同行業量身定作的各種紓困措施共同作用的結果。不過，許多經濟學家擔心，由於美國聯邦政府繼續加大赤字很難獲得一致支持，美國經濟刺激計劃中擴大政府開支的部分將於 2010 年結束。各州及地方政府由於稅收收入減少，正設法削減開支。一旦政府開支對美國經濟的支持效果減弱，美國經濟將面臨考驗。故美國景氣回溫，乃至回復至金融海嘯前的水準，仍需等待。

至於美國的景氣復甦究呈 U 型、L 型、V 型或 W 型反彈?美國道富銀行的研究結論認爲 W 與 V 型復甦可能性不高，L 型與 U 型復甦可能性較高，而以 U 型的可能性最高，但 U 型復甦的底部將持續多久目前並沒有定論，而且也不排除出現√型反彈之可能，即股市、債市反彈至高點之後將可能持續震盪相當時日。道富銀行預測 2010 年美國的全年 GDP 成長率約爲 2.2%，其中下半年成長較快，約爲 4%，其原因在於：貨幣政策仍很寬鬆、美元匯率下滑也有利出口、商業不動產已停止修正、舊屋庫存去化完畢，新屋開工已展開，消費信心回升與借貸條件轉鬆等現象。

道富銀行認爲美國失業率在短期內仍可能攀高，通膨問題不大，反可能出現通縮情形。因此 2010 年下半年 Fed 改採緊縮政策的機會不大，通常要等到就業市場好轉以後才會考慮退場機制，但由於通縮的考量，退場機制很可能會延後。

5.3.澳洲市場總覽

澳洲是全球資產管理規模最大的國家之一，目前澳洲的管理資產規模約在澳幣 1.3 兆(1.1 兆美元)左右，其中超過 7 成屬於退休基金所有。澳幣爲全世界交易量第六大的幣別，在亞太地區也是成長最快的貨幣市場，在全球匯兌交易周轉率佔第 7 位。

合計國際發行債券與國內發行債券之數字，澳洲是環亞太地區第二大的債券市場。在亞太地區，澳洲是最多國際債券的市場，也擁有第四大的國內債券市場規模。其中，公司債約澳洲債券市場比重約 41%，政府公債於前幾年呈現衰退現象，最近則開始逐漸增加，近 2、3 年內預計將增加一倍。

澳洲是亞太地區第四大保險市場，也是全球第 12 大保險收入的國家。是全球第 14 大經濟體。澳洲的退休金市場成長相當迅速，在 2001-2007 年間，複合年成長率爲 23.6%，遠高於世界平均 10.3%。

至 98 年底爲止，基礎建設支出對於經濟需求面提供有力支撐，商業投資逐漸強化中；由於銀行放貸標準轉趨嚴苛，過度的融資槓桿已經減少。

在金融海嘯期間，澳洲的經濟成長率只有一季呈負成長，即 97 年第四季，澳洲景順投信預計 2010 年澳洲 GDP 可望成長 1.5%；失業率 33 年最低點將落於 2008 年，爲 -4.1%，2009 年底爲 5.8%，預計最高將可能到達 7%。澳幣幣值一度相對美元大跌，現又回升到 0.9 兌一美元左右；道富銀行經理人預測澳幣將在 2011 年與美元兌換比率爲 1:1。

澳洲房市成長快速，主因是房屋供給不足。澳洲的人口成長快速，年平均成長率達 2.1%，其中 2/3 爲外來人口移入，1/3 爲自然成長率。澳洲房價一度下跌一成，目前亦已回到金融海嘯之前的水準，故雖房價飆升，然短期內並沒有資產泡沫化的問題。

澳洲的股票市場隨著自身與新興市場經濟好轉而快速上漲，目前國際商品原物料價格持穩，而澳洲由於全球持續上升的商品需求(特別是亞洲((尤其是中國))的強勁需求)而穩住經濟發展的腳步，出口也持續暢旺。由於澳洲與中國外貿依存度高，只要中國持續建設及保持對原物料的需求，澳洲經濟便能持續發展，因此對未來出口乃至整體經濟仍可期待。

由於澳洲經濟已快速從谷底翻升，澳洲央行已連續 3 次升息，由 3%升至 3.75%，但澳洲政府仍持續從先前因應金融海嘯祭出的非常救市措施中退場，但因澳洲在全球金融危機中累積的長期債務不容小覷，依然存在嚴重問題，故其退場機制應不致於過於急促。

整體而言，金融海嘯的負面影響已經淡化，澳洲市場相對其他已開發國家而言表現良好，澳洲的銀行體系也較其他先進國家來得健全，澳洲前四大銀行(Commonwealth Bank, Westpac, National Australia Bank, ANZ Bank)轄下資產在全球排名分別為 13、14、23、29 名，故澳洲銀行體系相對全球而言，仍非常有競爭力。Invesco 觀察，此時此刻，國際投資人承受風險的信心正在恢復中，此亦有助於加速澳洲經濟回春。

綜合以上看法，澳洲經濟在未來幾年仍相對看好。但投資澳洲時，Invesco 提醒宜謹慎看待下列數點風險：

7) 房價高漲：雖然中長期而言澳洲房市因房屋供給不足，需求持續成長而不致泡沫化，但因由房價底部上揚速度較快，短期內仍可能震盪。

8) 政府負債增加：為挽救經濟下挫力道，各國政府傾力挹注資金與擴大公共支出，政府負債大增已成為各國政府共通的潛在危機。

9) 短期通膨疑慮：由於澳洲政府寬鬆貨幣政策奏效，促使利率由 7.25%降至 3%，澳洲景氣升溫明顯，故澳洲率先全球調升利率(現回升到 3.5%)，此亦反映澳洲國內短期通膨風險上升的事實。

5.4.澳洲財富管理市場

澳洲退休金(Superannuation Fund)資產約達 1.1 兆澳幣(1 兆美元)，非退休金資產約 3 千億澳幣。一般共同基金(retail)資產約 8 千 5 百億澳幣左右，法人則約佔 5 千 5 百億澳幣，合計澳洲資產管理市場總規模約達 1.4 兆澳幣。

由於金融海嘯的關係，澳洲投資市場產生了許多變化，目前許多基金零售公司(主要是一些大型銀行)開始整併，部份國外業者準備離開澳洲，基金經理人縮減投資策略與商品。由於缺少流動性的緣故，許多房地產基金及抵押貸款基金已遭到凍結，投資人無法贖回投資的資本。表現不佳的基金經理人也開始出現異動。2008 年，約 1200 億澳幣資金流入定存中。當年第 4 季，許多共同基金因澳幣匯率大幅變動而產生損失。但雖然經濟似乎快速變化，但目前已見到投資加速的跡象。

澳洲風險監管局 APRA (Australian Prudential Regulation Authority)要求退休基金要每週公布基金的流動性狀況。由於政府對所有銀行存款提供全額保證，導致資本市場扭曲，市場資金湧入銀行存款中。政府在 2008 年 12 月提供 100 億澳幣的資金挹注，在 2009 年第 2 季更投入高達 400 億澳幣的財政支出刺激方案。

目前澳洲退休金資產中約有九成是固定提撥制，此趨勢預計仍會延續。澳洲整體的財富管理市場投資組合雖然國外資產比重仍將逐步提高，但投資在國內市場的比重仍會相對較高，此仍因投資人對當地經濟發展較熟悉的緣故。

受到金融海嘯的衝擊下，許多人將資金由股票市場中撤出，目前澳洲投資人的投資組合中，股票投資的比重已降至目標區的下緣；另一趨勢是，國內資產仍持續轉向國外股市、債市及房地產等，除分散風險外，亦可進一步低接國外被低估的獲利機會。由於澳洲的基金投資人頻繁轉換的關係，許多基金嚴格控制基金的流動性以備不時之需。至去年底爲止，超過千億澳幣資產仍停泊在定存中。大型的基金所持有的非上市股票資產，如基礎建設投資、房地產投資等等，目前仍接近投資配置上限。另外，從過去經驗看來，由於許多另類投資無法真正達到分散風險的效果，因此目前的趨勢是澳洲投資人將增加投資於相對較單純的投資商品上。有些被過度低估的資產已開始出現投資契機，而受到澳洲各共同基金的重視。此外，新興市場再度成爲投資趨勢，許多基金已將資金撤出美國、英國、歐洲。

綜合而言，澳洲財富管理市場仍蓬勃發展，長期而言澳洲市場仍大有可爲。

5.5.Invesco 固定收益證券商品投資流程

本次參訪行程，Invesco 澳洲分行以其在固定收益證券方面的投資管理方式對我方說明其投資哲學並分享其實務經驗。Invesco 認爲要尋找固定收益證券的投資機會，宜由全球投資團隊來決定，而其成員必須是獨立運作同時亦能互相連繫的投資專家。

Invesco 將商品類別或利益來源區分爲以下數類：貨幣、存續期間、殖利率曲線(Yield Curve)、國家利差(Country Spread)、投資級信用類(Investment Grade Credit)、高收益信用類(High Yield Credit)及發展中國家類(Emerging Markets)。在每類均配有獨立之投資專家(alpha source manager)蒐集資料及提供建議，獨立於投資平台中將各自研究建議上傳，資訊能即時由基金經理人(portfolio manager)取得，以確保投資建議均能充份而獨立地表達。

除了專屬的投資平台(proprietary investment platform)以外，Invesco 尙有另一特點，即 Passport 的設置。Passport 即投資組合的設計階段，爲了配合客戶的需求而採取量身訂做的方式，故並非 Invesco 預設定型化基金供投資人選擇，而是可因應客戶需求而客製化基金種類，目前轄下有 66 個 Passport。

故投資管理流程爲，各領域投資專家透過投資平台上傳個別專業投資建議，再由「一般評等系統」(common rating system)對所有投資建議加以評分(此乃基於各投資專家所建議的歷史績效不同而設，建議有效性較高者，其建議的評比將提高，反之亦然)，以決定各類商品的投資比重應加重、減少或中立。其結果將連結至其投資平台(WWFI Global Investment Technology Platform)中，並因應不同的 passport 調整其內容，傳送至各基金經理人手中，由基金經理人執行實際之交易行爲。最後再由各不同基金經理人所管理之投資組合共同建構出各種絕對報酬與相對報酬的投資組合。

5.6.移轉管理

移轉管理之目的在於執行客戶的投資策略重組計畫時，以「及時」、「成本效益」及「透明」爲考量。「及時」以減少時間所致之風險與成本擴大；著重「成本效益」而非擴大獲利報酬，此與一般委託操作之目標迥異；「透明」則有助委託人事後分析移轉管理所生之成本減少效益究竟有多少。

5.6.1. 移轉管理的交易類型

可概分爲兩類：

1) 雙邊交易：買及賣(交易成本有自然抵消的效果，約有 2 到 5 成的交易可以在內部互抵掉(crossing)，

2) 單邊交易：買或賣(交易成本通常比雙邊交易貴，且成本通常隨時間增加而增加)

其中，主要工作內容可分爲：更換基金經理人、改變投資組合之資產配置、基金經理人合約結束清算、新進資金之投資及不同投資組合之合併等。

通常經理人一轉換，原有之投資組合將立即產生各種成本，如佣金費用、稅負等等，其中最主要的成本爲市場衝擊(Market Impact)，即因龐大的投資組合買賣將導致市場的供給與需求產生改變，致原有的均衡市場價格與實際買賣時產生差異。移轉經理最主要的功效即在減少這方面成本的平白損失。

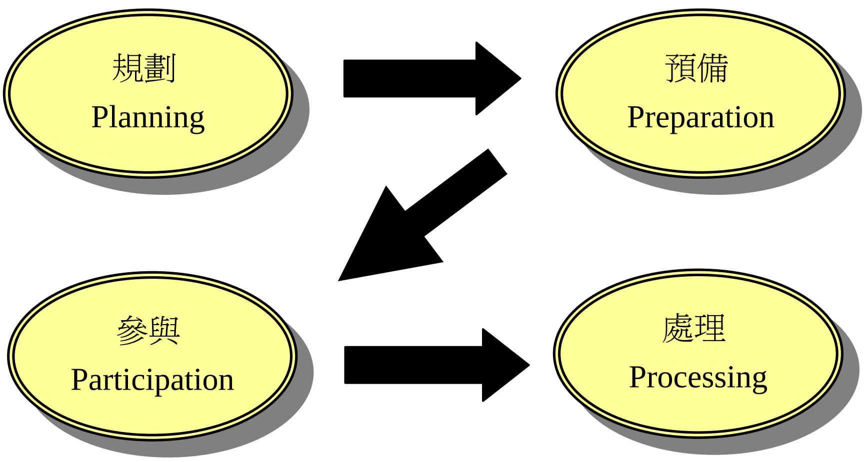
特別值得注意的是，移轉經理並不決定應買賣什麼標的，而是「如何」完成交易(轉換結果)，決定買賣標的是一般基金經理人之工作目標，是爲賺取超額報酬並承擔市場風險下的決定，移轉經理人係完成委託人所託，並減少完成最終投資組合過程所生之成本及風險，因此首要任務是「順利地」完成最終目的。通常的作法是將原有之各投資組合之資產合併處理(pool together)，再分配(branch out)給各經理人，以達到成本及風險降低的效果。

一般基金經理人與移轉經理人之差異比較如下表：

因素	一般基金經理人	移轉經理人
核心能力	管理資產：著重長期選股與投資組合模型適配	管理風險：短期有效地執行投資組合移轉服務
執行	個別投資組合之交易策略	統合式之多投資組合交易策略
時點	獨立的交易策略(將潛在增加客戶的市場衝擊成本與機會成本)	統合式最適執行時程(能減少客戶所有資產的衝擊成本與機會成本)
報告	執行成本與績效混合呈現，無法針對個別成本做分析與表達	將執行成本與績效獨立呈現，能對個別成本分別做交易前與交易後之分析檢討
衡量重點	是否產生超額報酬	是否在移轉過程中有效管理風險與成本

移轉管理流程

移轉管理流程有 4P(Planning、Preparation、Participation、Processing)



1) 在規劃階段，通常要確認最終結果爲何，需要準備移轉的相關文件表格、各方人員合作協調與跨資產的協同調整，此階段所需時間視情況而不同，約在 1 到 3 週左右。

2) 在預備階段，要做好詳細的分析、所有相關成本的預估以及擬訂實際的交易策略，預估所須時間約爲 1 到 3 天。

3) 在參與階段即實際進入市場交易，所涉商品爲股票、債劵、外匯及相關衍生性金融商品，以最迅速、最有效率及成本、風險最小化方式完成佈局，估計所須時間爲 1 到 3 天。

4) 最後在處理階段，進行所有交易的事後交割作業，所有權移轉登記等手續，尚須計算所有交易實際成本並製作交易報告(詳列成本與績效)，須時約一週。

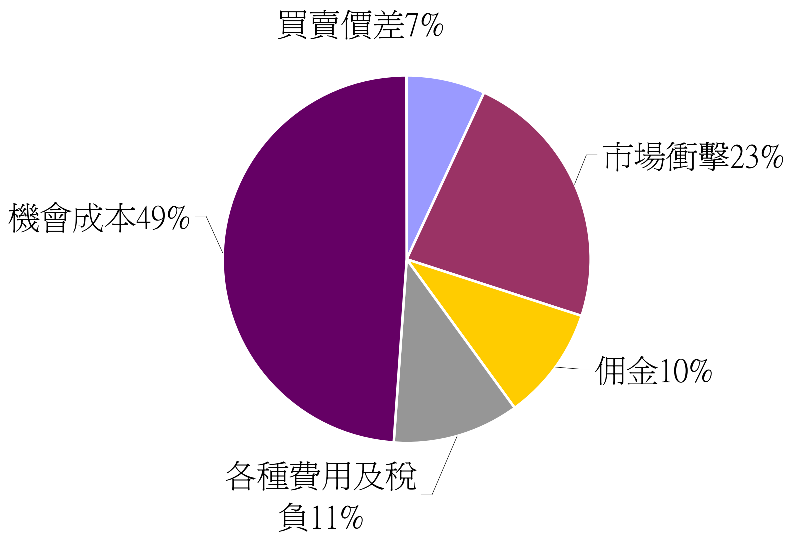
5.6.2. 移轉管理的績效與成本

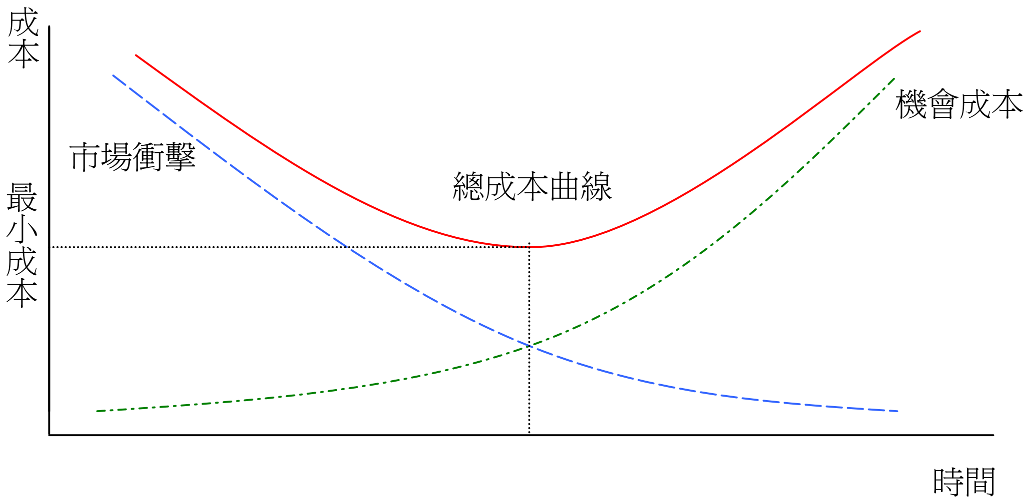
移轉管理的績效衡量爲執行落差(Implementation Shortfall, IM)，IM 是 1988 年由 Andre Perold 所提出的概念，執行落差愈小，移轉管理的績效愈好。執行落差是指實際投資組合的報酬與完美投資組合報酬的差距。所謂完美投資組合是指資產立即全數投入新資產配置當中，以事前所設定的價格轉換，當中未發生任何外顯佣金、稅負或內含的磨擦性交易成本。這在實際狀況中不可能存在，也是移轉管理的終極目標。

IM 爲完美交易下(紙上作業)投資組合的淨值減去實際產生的新投資組合淨值。因實際移轉時必定會產生各種成本，因此 IM 必爲負值，但愈接近 0 愈好。

有關移轉管理的成本方面，摩根大通銀行對透明市場下的純股權投資組合進行成本分析，得到以下結論。由下圖可知，在各種成本中，以機會成本及市場衝擊成本所佔比重最大，兩者合計約達 72%。

移轉管理成本分析





由上圖可知，市場衝擊成本隨著移轉管理的運作時間而降低，但因處理時間延長，將導致新投資組合過晚到位而喪失潛在的報酬，使得機會成本大增，因此總成本曲線最低點即是市場衝擊成本與機會成本總和之極小值，亦即移轉管理必須緊抓住最適移轉時點，使投資組合移轉過程的成本與風險降至最低。

結論：移轉管理的確可減少投資組合內容變動時的成本與風險，透過受託機構內部的資源，可產生自然抵消的效果，且也能透過事前縝密的分析達到減少市場衝擊與

機會成本的效果。然而移轉管理除了須要仰賴受託公司的資源外，股票與固定收益證券的移轉需要非常不同的技巧，因此受託公司是否具備豐富移轉管理經驗與良好的評價相當重要。此外，雖然佣金比重在前述研究中並非重要項目，但許多潛藏成本並非可由外顯的佣金結構中看出，故移轉管理實有必要於比較各公司不同條件後慎選之。

5.7.投資哲學

以下道富銀行所提供之資料及相關說明，擇要闡述其對投資原則、投資流程等之實務看法與經驗。道富銀行認爲，所有中長期投資決策中，以資產配置爲最要。因資產配置因子能解釋基金長期報酬的變異數，因此是基金長期報酬中最大的決定因素。均衡配置的投資組合能供應各種資產類別曝險程度方面專業的監督與管理；但應注意的是選擇標竿(benchmark)時，一定要選擇適當的標竿以免不具比較性，及誤導投資組合的投資方向。

另一個重點是分散風險，爲了因應潛藏負債，退休基金適當地配置部份資產於風險性資產有其必要性，但爲防止風險過大，宜適度分散風險，且分散風險的結果有助於提高風險調節過的報酬率。

第三點是節省成本。由於降低交易與行政相關成本能提高最後的投資報酬率，特別是在低報酬率的環境或商品下，降低成本尤爲重要。

最後是善用加強性及主動管理方式來增加收益。由於被動式管理能使得多數資產的投資成本相對低廉，表現亦能與市場相當。若能輔以主動式管理，在較不具效率的投資市場中，則能獲取高於一般市場表現的報酬。

道富銀行在多重資產類別方案(Multi-Asset Class Solutions)中，使用的投資流程主要分爲兩部份，一是策略性資產配置(Strategic Asset Allocation)，一是戰略性資產配置(Tactical Asset Allocation)。其中策略性資產配置首要爲發展健全的策略性資產配置，並戳力於全球化分散投資，並保留調整的空間，以提供各種風險類別下不同的投資決定。戰略性資產配置則是認爲全球投資市場並不具完全效率性，因此以主動操作方式搭配嚴格的風險控制，以尋求使基金增值的機會。此外，此部份流程係以基本面分析

結合系統化的投資方式進行操作。戰略性的資產配置投資流程分爲三個步驟：評估、建構與執行。其中評估階段是事先確定股票、債券與現金是否具有相對吸引力，確認的方法是結合「由上而下」的總體面經濟研究與「由下而上」的計量分析。在建構階段，必須篩去大量不適合的投資商品，並對於各資產類別，以基本面分析及數量化最適模式篩選適當商品與決定最適比重。在執行階段則運用道富銀行自有的套裝工具，以成本最小化及最具效率的方式執行交易。

以下以圖表方式說明評估階段與建構階段之相關內容：

評估階段：市場/國家選擇評等

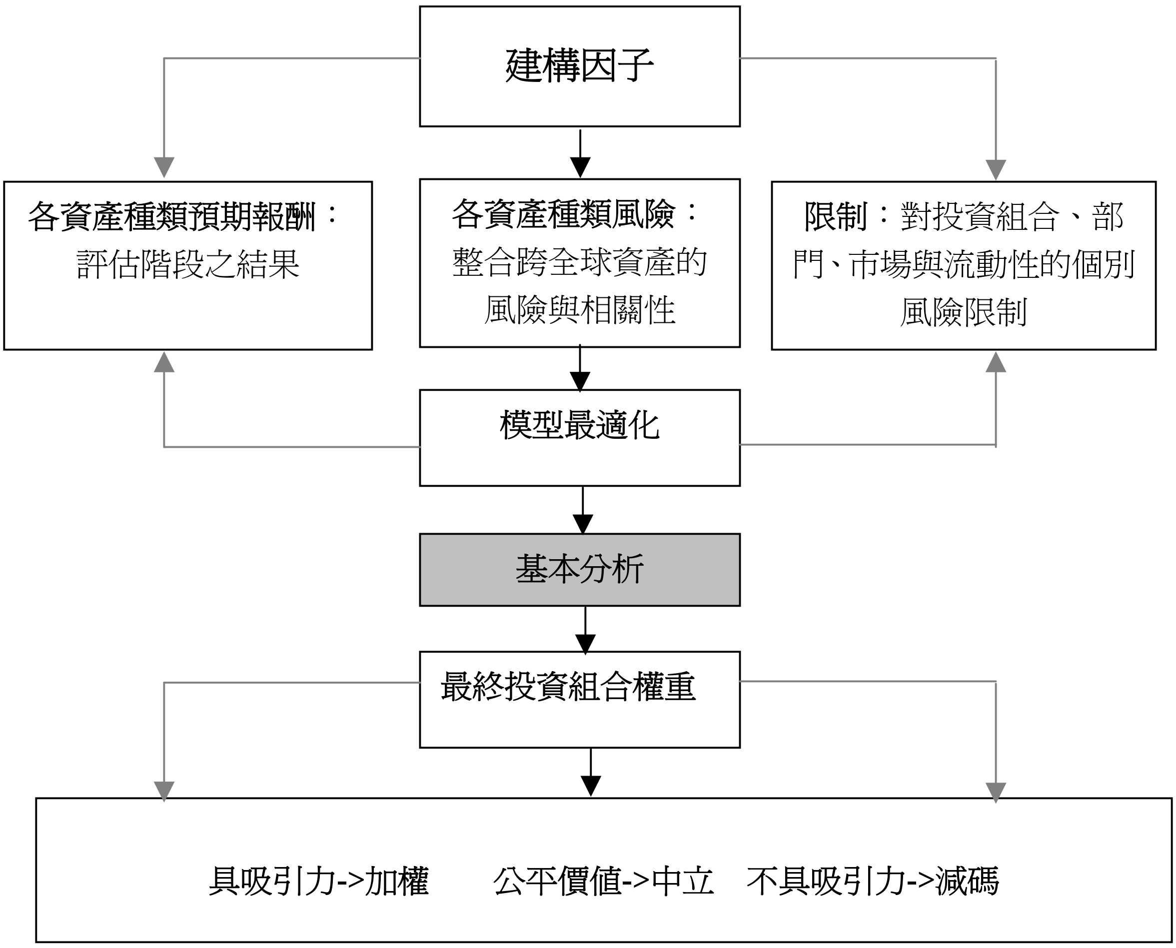
方法	價值：基本分析	動能：價格趨勢分析	情緒：預估修正分析	總體：經濟分析

彙總個別公司資料

模型因子	◦B/P vs. ROE ◦遠期 B/P vs. ROE ◦現金流量折現 ◦遠期 E/P	◦價格動能 ◦前 24 個月加權平均報酬率	◦每股盈餘擴散 (diffusion) ◦銷貨預估擴散 ◦平均銷貨收入變化	◦GDP 成長 ◦經常帳與 GDP

對各市場預期報酬率進行評比

建構階段：最適化與基本面分析



5.8.風險管理

在此次考察中，美國道富銀行對自身風險管理系統及功能有較清楚的說明，故以下即以道富銀行之風險管理概念與體系予以彙整出重要概念。

風險管理的目的，在提供獨立的風險評估方式，以計算資產的投資風險、交易對手風險及作業風險。組織中宜設風險長(Chief Risk Officer, CRO)，並應是重要執行管理團隊(Executive Management Group)的一員，應對董事會或委員會直接報告與負責。風險管理團隊應定期與法規遵循、內部稽核成員聯繫互動，在重要的管理會議中，風險管理人員均應有代表出席。風險管理團隊亦應該與投資團隊充份配合，使風險管理與投資功能互相搭配。

風險管理主要控制的風險類別有三，即投資風險、信用風險與作業風險。說明如下：

1) 投資風險管理是爲確保所轄之各投資組合所產生之風險水準均屬適當，不能高於風險容忍水準，此部份也必須參酌外部機構發展出的風險管理理論。另外，投資風險管理的另一個工作重點是協助公司開發商品，並審視投資過程。

2) 信用風險管理則是監督並減少因市場特殊事件或政策改變所產生的曝險。協助公司建立交易對手策略、建立公司現金管理的信用策略要求、決定衍生性商品的投資策略與投資流程、監督並同意交易對手曝險值，因此所有交易在執行前均須得到風險管理團隊審核同意。

3) 作業風險管理則是減少由外部事件或內部人員組織產生的不當流程所招致的損失。職責是發展主要風險指標並提供相關報告，道富銀行並要求此作業風險管理成員應蒐集趨勢分析的損失資料，並製作風險管理自評(RMSAP, Risk Management Self Assessment & Plan)的企業風險報告。

另再針對投資風險管理延伸說明如下：

此部份的管理流程有三個步驟：風險管理、風險控制及風險評估

在風險管理階段，必須了解風險的正面與負面意義，並試圖極大化風險調整後的報酬。此階段屬於交易實際開始前；在風險控制階段，要確認個別風險的曝險水準，設定風險容忍度，監控風險曝險值與投資集中度，定期出具風險報告，對過度或不必要的風險進行修正或減緩其影響程度。此階段已是交易開始後，故重點在於監控風險水準的發展，及事後的風險呈現。在風險評估階段時，應確認整體投資組合的潛在風險是否存在，並試著評估此類風險的絕對大小。此部份工作主要由投資長(CIO)負責。

有關風險評估方面，雖然目前許多量化風險指標均已開發出來，但道富銀行提醒，量化風險指標可以使主要的風險水準更明顯，但仍有一些風險無法以量化風險指標所涵蓋。使用量化風險指標時應注意多比較不同的指標，因爲不同的計算方法或模型可能產生相當不同的結果。量化指標宜與質化風險管理方式相結合，以產生互補的作用。所謂質化風險管理方式包括風險管理人員與基金經理人的實際經驗，以及符合投資常識的直覺或邏輯。

常用的量化風險指標包括風險值(Value at Risk, VaR)、情境分析(Scenario Analysis)與壓力測試(Stress Testing)。目前道富銀行使用的風險管理系統依商品種類分爲以下數種：

1) 固定收益證券類：Lehman’s POINT Platform、Citigroup’s YieldBook、Proprietary LOGOS Platform、POEMS Platform

2) 現金類：Cash Risk: Portfolio View & Cash View、Credit View

3) 股票類：Barra、Factset、Proprietary SIMPL System

4) 貨幣類：FX 2000、Currency Online

5) 衍生性金融商品：Front Arena

道富銀行準備之風險管理資料，詳列不同資產類別之相關風險管理方式，如股票、固定收益證券、現金、衍生性金融商品等，各有不同計算方式、指標及特別之注意事項等。然因討論時間限制無法於會談中一一解說，故將相關詳細資料附於報告附錄供參。

由道富銀行之解說中可以得知，國外資產管理公司對風險管理相當重視，特別是歷經金融海嘯之後。道富銀行有獨立的風險管理團隊，層級亦高。風險管理團體有明確的工作範圍與目標，此外，亦使用大量的數量化工具協助各種不同商品及不同國家、市場的風險衡量作業。除量化工具外，尙需輔以從業人員的質化判斷以求完善其風險管理業務。即便如此，在金融海嘯時各大型資產管理公司仍會受創，何況未能落實風險管理或相對資源不足的其他機構?

5.9.借券服務

退撫基金得承作之投資範圍包括借券業務，此次考察道富銀行亦特別介紹該公司借券服務，在此簡述借券實務作法及相關重點概念。

爲使資金更有效運用，並承擔最小風險下產生額外收益，以增加基金淨值，將基金持股借貸第三方以收取借券收入爲一可行方法。隨著證券性質不同及地區別不同，道富銀行的經驗顯示，借券收入約可收取 3 至 45 個基本點(basis point)的年化報酬率。愈是自由化國家借券收益愈低，反之新興國家借券則能收取較高之借券費用。此外，股票的借券收入普遍高於固定收益類證券。

金融海嘯期間，道富銀行亦從雷曼兄弟倒閉學到相當珍貴的經驗。由於雷曼兄弟無預警倒閉，道富銀行爲客戶承作借券服務，負有協助客戶全身而退之責，自市場傳聞雷曼兄弟財務有狀況時，道富銀行增加信用管理，要求更高的價差與保證金，甚至要求提供擔保品，在雷曼兄弟倒閉前一週保證金餘額開始下降，道富銀行開始進行違約準備，所有人員就位以備雷曼兄弟萬一真正發生違約之情況。在雷曼兄弟宣布倒閉前 2 天，道富銀行即時動用所有關係要求雷曼兄弟立即償還向道富銀行借的全數證券，兩天內收回 99%的出借證券，成功將損失減到最低。其餘未收回部份仍可由擔保品換回現金(但仍不如全數原券收回爲佳)。雖然借券業務平時風險不高，但遭逢市場巨變時，仍可能爲微利而承擔極大風險。

道富銀行提出第三方借券服務概念，雖然道富非退撫基金保管銀行，但仍可提供相關服務。由於道富銀行是公債組織(Treasury Market Practices Group, TMPG)的會員，可爲客戶承擔萬一借券無法及時交割時所應支付的賠償金。

6. 參訪心得與建議

1) 經濟面：

由於 2008 年下半年全球經濟急速惡化，股市、匯市、勞動市場、商品市場，無論實質面或技術面均呈現明顯衰退與恐慌現象；幸而各國政府全力介入干預，有效減低經濟下滑力道。在 2009 年 3 月份以後各國股市領先大幅彈升，帶領經濟實質面呈現緩步復甦的趨勢。雖然如此，各國政府因財政擴張幅度前所未見，雖有效拯救經濟局勢，然造成各國政府債台高築，部份國家因此被調降信用評等亦或無法支付公務員薪資。又因貨幣政策過於寬鬆，將來通膨一旦出現勢必再採取緊縮性貨幣政策，因此對未來全球經濟景氣持續恢復隱約附加了一層限制。

根據日前國外考察之行，各資產管理公司對未來經濟的共識是，全球股票市場仍將持續上漲，但復甦力道以新興市場爲最強。美國在 2010 年仍會緩步復甦，但其恢復速度不會太快，因其失業率仍居高不下，故景氣復甦曲線以 U 型反轉最爲可能，然亦因失業情形尚未改善且仍未有通膨情形，故政府紓困方額的退場機制可能延後。

澳洲經濟由於基礎建設支出對於經濟需求面提供有力支撐，且澳洲與中國外貿依存度高，只要中國持續建設及保持對原物料的需求，澳洲經濟便能持續發展，因此對未來出口乃至整體經濟發展仍可期待，短期內尚無隱憂。

2) 管理面：

此次考察行程，各資產管理公司提供許多珍貴的實務經驗。首先是移轉管理方面，由於退撫基金常有更換基金經理人及新增資金予代操機構，委託期限屆滿未續約則收回現券與現款，故移轉管理對退撫基金相當重要。移轉管理能有效降低實際交易次數，減少不必要的交易成本浪費及因大筆資金進出影響市場供需狀況而生的市場衝擊(Market Impact)成本，也能兼顧最適進場時點，減少機會成本的損失。

另因考察時點正值金融海嘯過後，各國股市、債市快速回升時期，訪察之資產管理公司均表示出對風險管理的重視。綜合而言，風險管理需要獨立團隊，並賦予高度信任與投資決策之參與權，以方便其遂行風險控制之工作。此外，風險管理團隊尚應

有明確之管理目標與方針，除了宜有經驗豐富的成員外，公司內部亦應備齊各種風險衡量之工具與資料庫，範圍包括各種不同之商品類別及主要市場資訊。在質化與量化風險管理工具互相搭配下，才可能使風險管理業務達到完善的境界。

此外在投資流程方面，道富銀行特別強調資產配置的重要性，道富銀行將資產配置分成策略性與戰略性兩類。在被動式的策略性資產配置以外，輔以主動操作式的戰略性資產配置模式，使管理資產能在隨著市場成長而增值之外，額外賺取超額報酬。除了一般所周知的以基本分析、計量分析交錯運用選擇值得投資的市場與國家外，並利用許多條件篩去多數不適宜的投資商品。值得注意的是，在投資決策階段必須與風險管理相結合，以求取報酬與風險兼顧之均衡點，避免過度追求利益而反遭受損失。

3) 建議

1. 整體而言，各資產管理公司對未來景氣並不看淡，即使歐美市場全面復甦可能尚有困難，但對亞洲、南美、印度等新興市場仍寄予厚望。為獲取長期穩定之獲利以支應廣大軍公教人員退休支出，退撫基金應本著長期投資之精神，在金融海嘯後繼續尋找投資契機，強化自身產經研究能力，積極嘗試提高基金淨值並避免過度暴露於下檔風險之機會。

2. 退撫基金雖係屬中長期退休基金，其決策著眼點係以長期收支平衡為其最終考量，然應仍可比照資產管理公司設定策略性及戰略性投資政策，明確告知參加基金人員，管理者之投資目標、方向與策略為何?甚且製作投資政策說明書，讓投資政策資訊更為公開透明。

3. 退撫基金宜檢討自身風險管理、投資內部流程等運作實務，並增加更多有利投資決策之工具，以更多先進系統工具減少人為判斷誤謬之發生，並酌減同仁業務負擔。若短期內資源難以支應相關工具之取得，則適度減少投資複雜度或委請業界優秀人才代管仍是持續努力的方向。

4. 退撫基金應強化風險管理之量與質，備齊各種風險衡量之工具與資料庫，強化訓練風險管理人才及全員風控之觀念。

5. 儘速完成移轉管理機制之設置及借券業務之評估，務使退撫基金之管理更具完善，以降低市場衝擊所產生之損失及提昇基金之收益。

6. 基金應保持與投資先進國家及國際性資產公司之接觸，以提昇單位內同仁之本職學能。此次考察之行，我們見到國際性資產管理公司挾人才與資源之優勢，運用各種先進系統，於世界各處蒐集最新投資資訊，故基金同仁亦應增廣投資領域之新視野，努力提昇專業學養，以期與國內外業界接軌，使退撫基金運作日益完善，與時俱進。

7. 參考資料

7.1. 中文部份：

1. 「金融海嘯下的損失」，理財周刊第 456 期，2009 年 5 月 20 日
2. 柯專員輝芳、陳稽察員豐隆，「澳洲及新加坡退休基金制度及管理實務考察報告」，公務人員退撫基金監理會 96 年度出國報告，民國 96 年 12 月 10 日
3. 中華民國證券投資信託暨顧問商業同業公會，「澳洲退休金(Superannuation)制度介紹」，座談會-澳洲退休金制度介紹資料，民國 96 年 6 月 30 日。

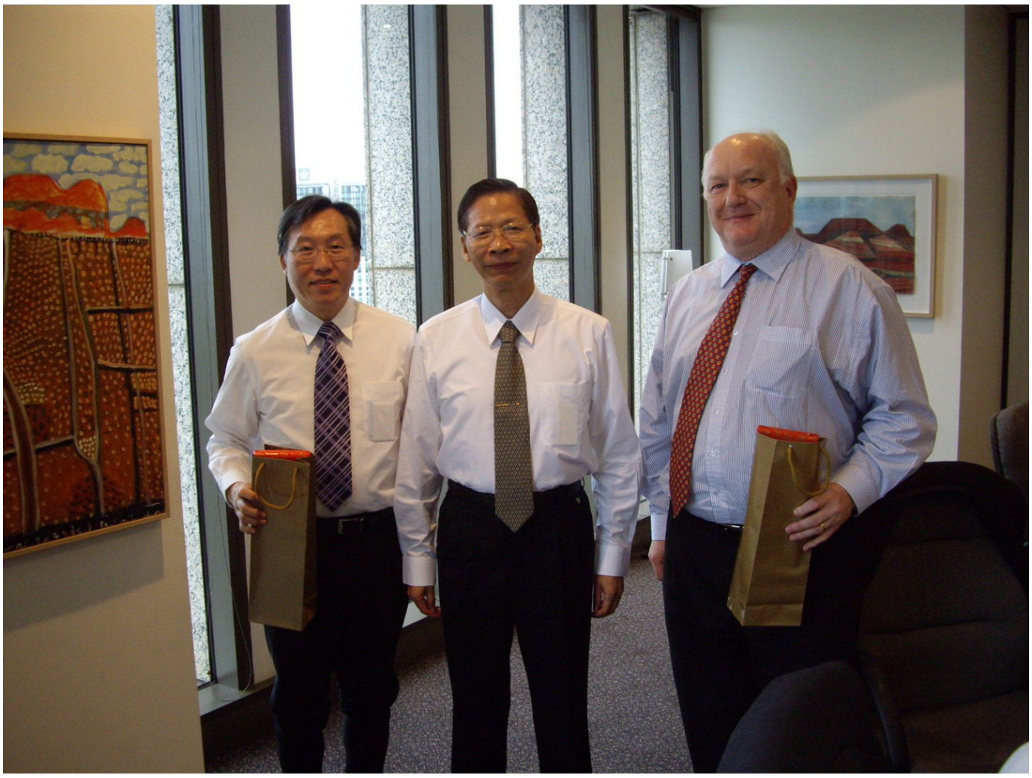
7.2. 英文部份：

1. Craig Slater, Andrea D’Abramo, “Risk Management”, SSgA, Dec. 2009
2. Jason Yip, “Update on Securities Lending”, SSgA, 11th Dec. 2009
3. Christopher J Probyn, “Global and US Economic Prospects in 2010”, SsgA, Dec. 2009
4. SsgA, “Optimizing performance across the portfolio cycle”, Dec. 2009
5. SsgA, “Multi-Asset Class Solutions Team - TAA Expertise”, Dec. 2009
6. Mick O’Brien, Tony Edmonds, Jackson Leung, “Australian Fixed Income”, Invesco Australian, 7 Dec. 2009
7. Mick O’Brien, “Australian Market, Australian Fixed Income and Equity”, Invesco Australian, 7 Dec. 2009
8. Nicole Schnuderl, “Invesco Australian Staff, Process, Australian Market and Product”, Invesco Australian, 7 Dec. 2009

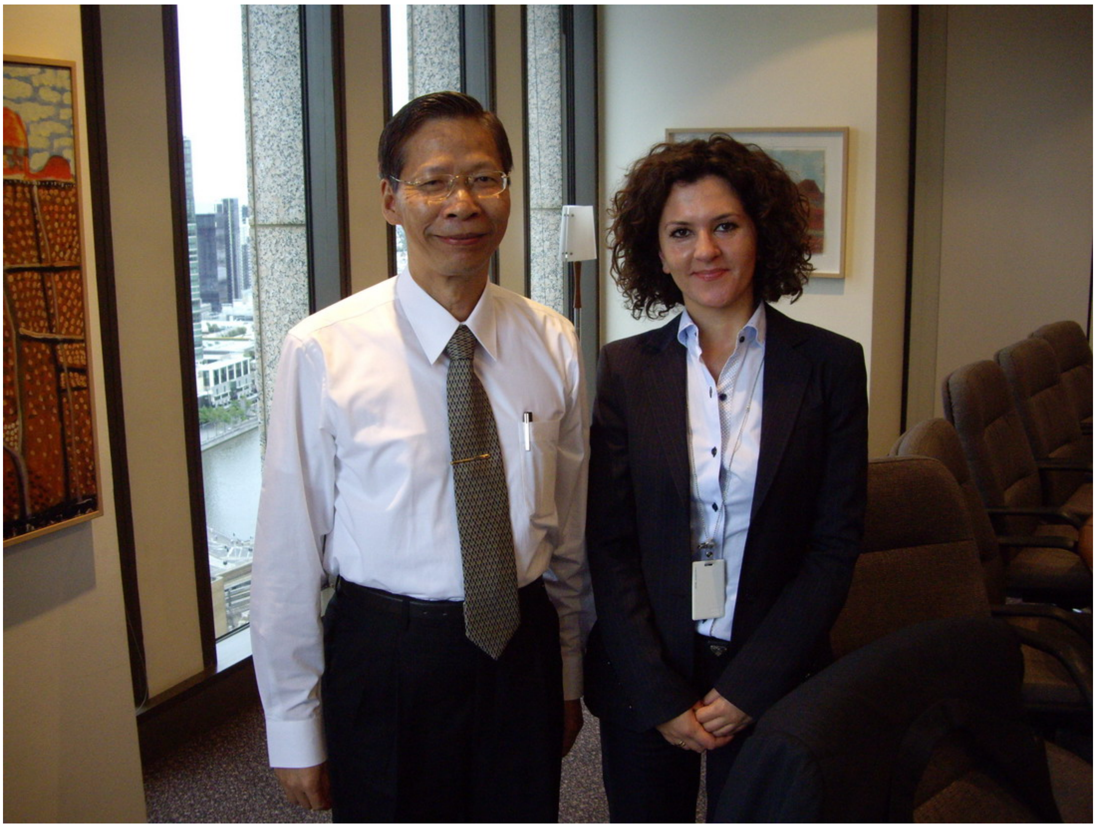
8. 附錄

1)與各參訪公司接待人員合照

劉執行秘書籐與 Invesco Australia CEO, Mick O'Brien 合影留念



劉執行秘書籐與 Invesco Australia, Tony Edmonds(右), Jackson Leung(左)合影留念



劉執行秘書籐與Invesco Australia, Nicole Schnuderl 合影留念

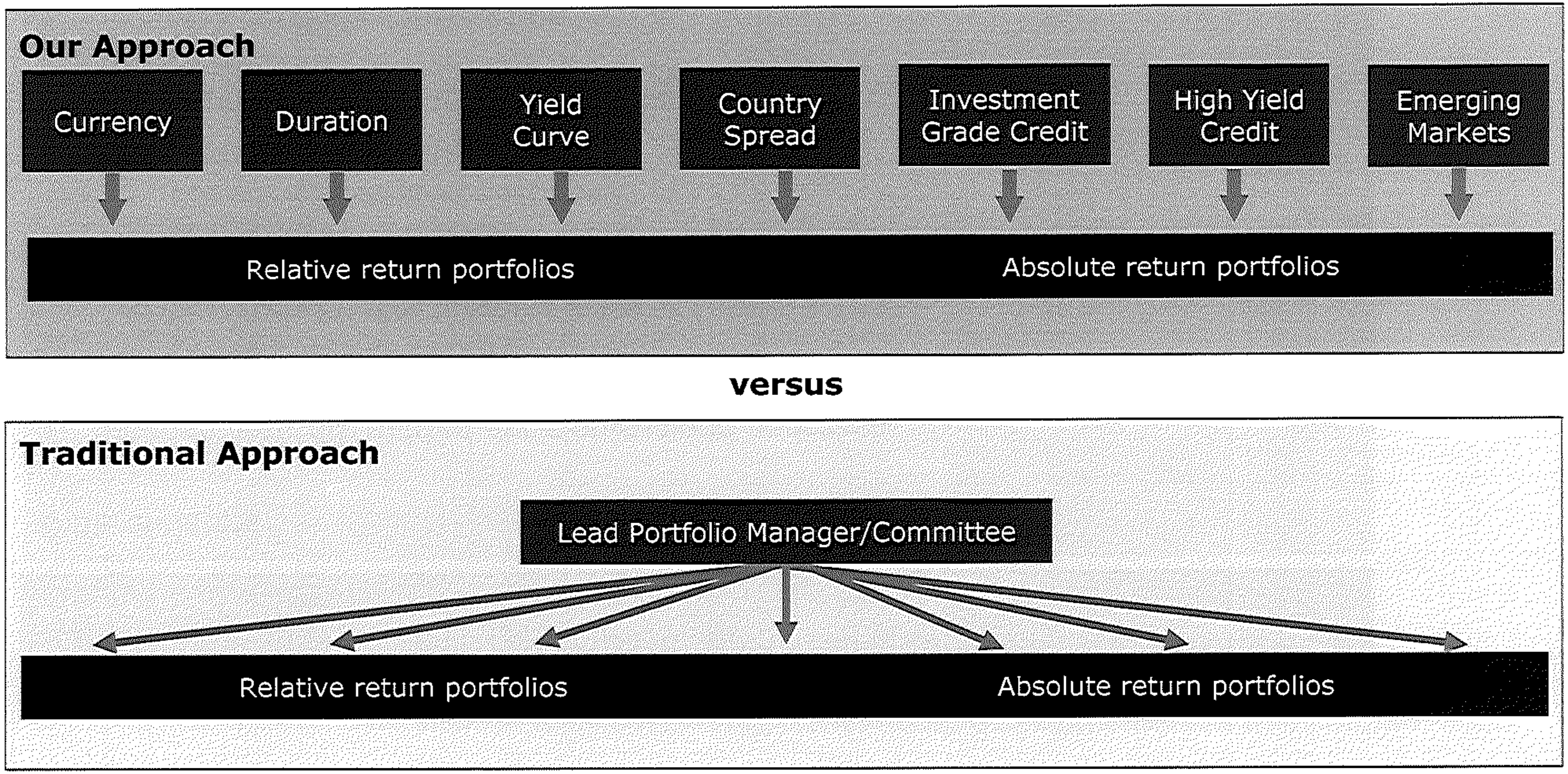
JPMorgan, Keith Fleming(左1), Gemma Sim(右3),劉執行秘書籐(左2),
蔡組長長銘(右1)與陳稽察員豐隆,(右2)合影

State Street, 黃總經理素貞(左 1), Chris Loong(左 3), Ian Martin(右 2)與參訪同仁合影

State Street, Craig Slater (左 3), Andrea D'Abramo (右 2)與參訪同仁合影

2)此次參訪行程攜回之部份重要資料

Invesco Worldwide Fixed Income
Investment process



Invesco

For illustrative purposes only.

Invesco Worldwide Fixed Income

Transparent and disciplined investment process

Decisions made by **alpha source managers (ASM)** and **credit analysts (CA)** on portfolio exposures (macro alpha sources and specific issuer decisions)

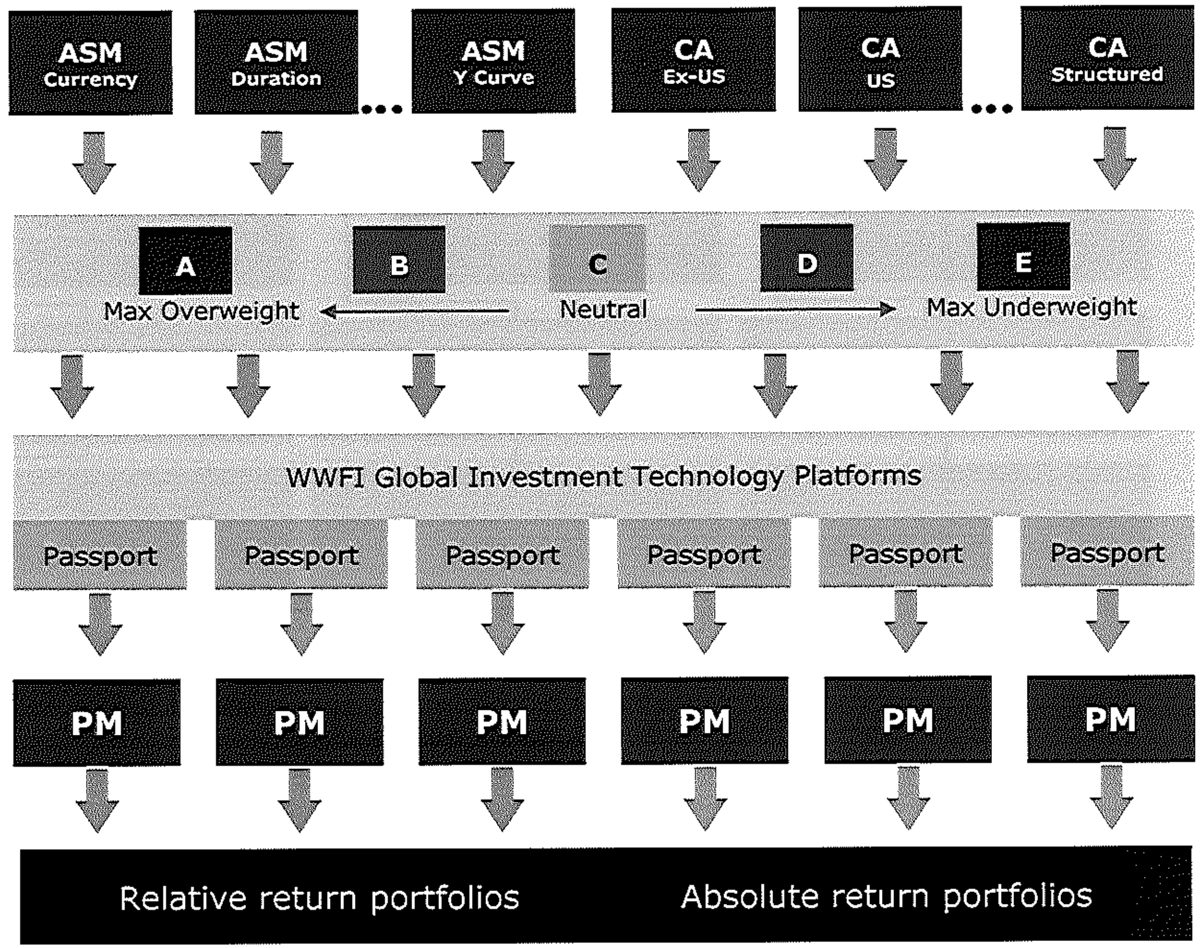
Common rating system for all decisions

Storage, communication and measurement of decisions

Design phase — Passports

Portfolio managers (PM)/traders implement portfolio trades

Portfolios



Note: Passport refers to product design output that specifies permitted investment guidelines. For illustrative purposes only.
Alpha is a risk-adjusted measure of excess returns generated by a portfolio versus a target benchmark. It subtracts the risk-free rate from both manager and benchmark returns.

Invesco

Invesco Worldwide Fixed Income

Risk management process, modular in nature

WWFI Risk Management	What	Tool	Who
Design	Alpha source properties Passport	Alpha source model Passport Calculator	GPM, HoAS, BH GPM, PM, HoPM, BH
Decisions	Decision quality • Macro alpha sources • Assigned weightings • Credit research	 QTech Decision Quality Statistics QTech	 GPM, HoAS, BH GPM, HoAS, BH BH, HoIGCR
Portfolio Construction	Fund restrictions Design (Passport)	PIT Pre-trade Compliance Drift report, VaR (UCITS III)	PM, HoPM HoPM, PM
WWFI Oversight	Fund performance Arbitration of conflicts within investment process	GPMR, QTech reports	GIPC GIPC
Invesco Ltd. Oversight	Performance/style drift Operational and business risk		IVZ, Fund Boards GPMR CRMC Compliance & Internal Audit
External Oversight			Auditors Rating Agencies

Key: **HoPM** = Head of Portfolio Management. **HoAS** = Head of Alpha Source Management. **GPM** = Global Process Management. **GIPC** = Global Investment Policy Committee. **BH** = Business Head. **PM** = Portfolio Managers. **GPMR** = Global Performance Measurement & Risk. **CRMC** = Corporate Risk Management Committee. **HoIGCR** = Head of Investment Grade Credit Research.

Invesco

Invesco Worldwide Fixed Income

Credit issuer alpha sources – transparent, disciplined investment process

1. Research

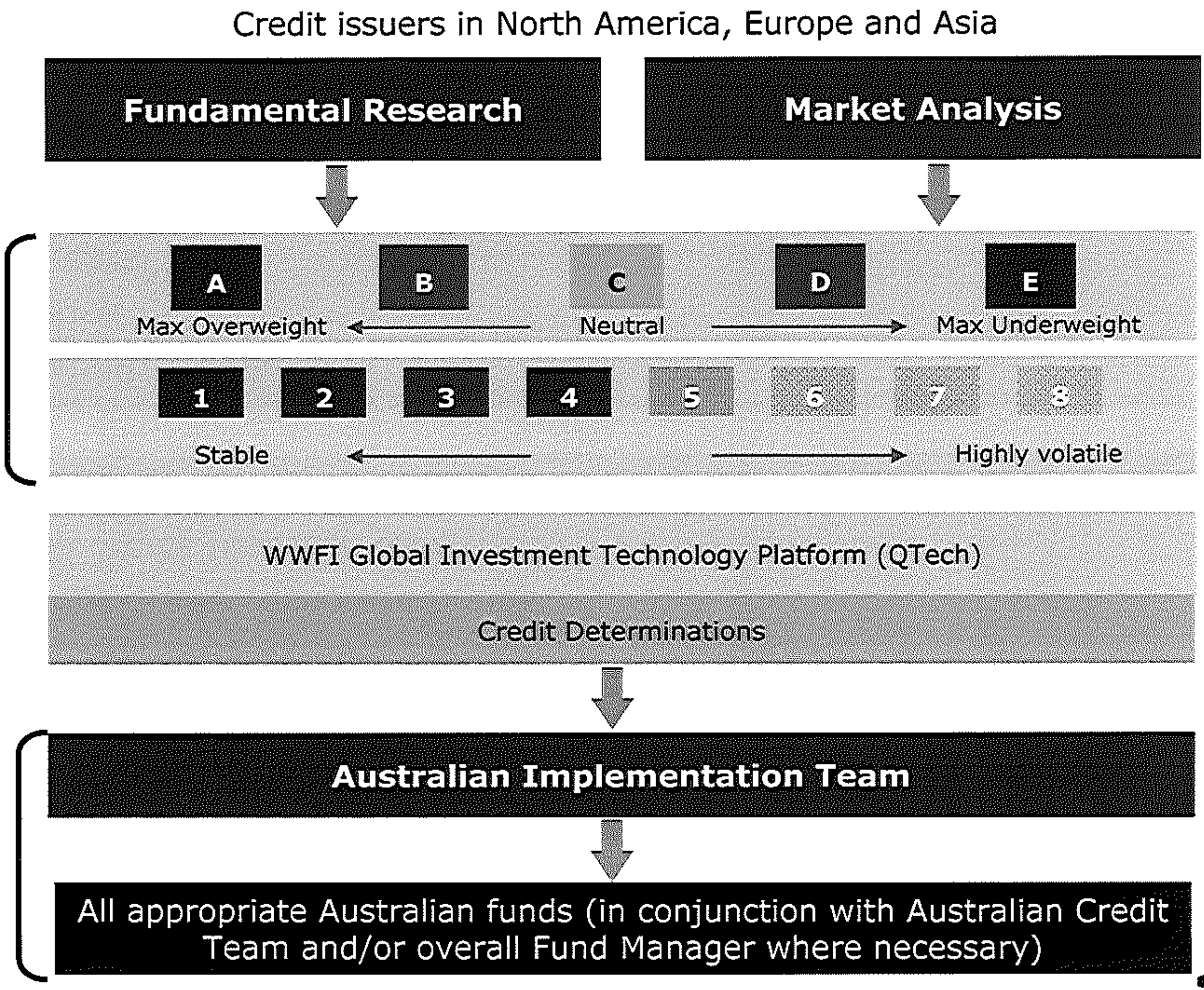
2. Decision

Credit Assessment (A-E)

Risk Assessment (1-5)

3. Communication

4. Implementation



Invesco

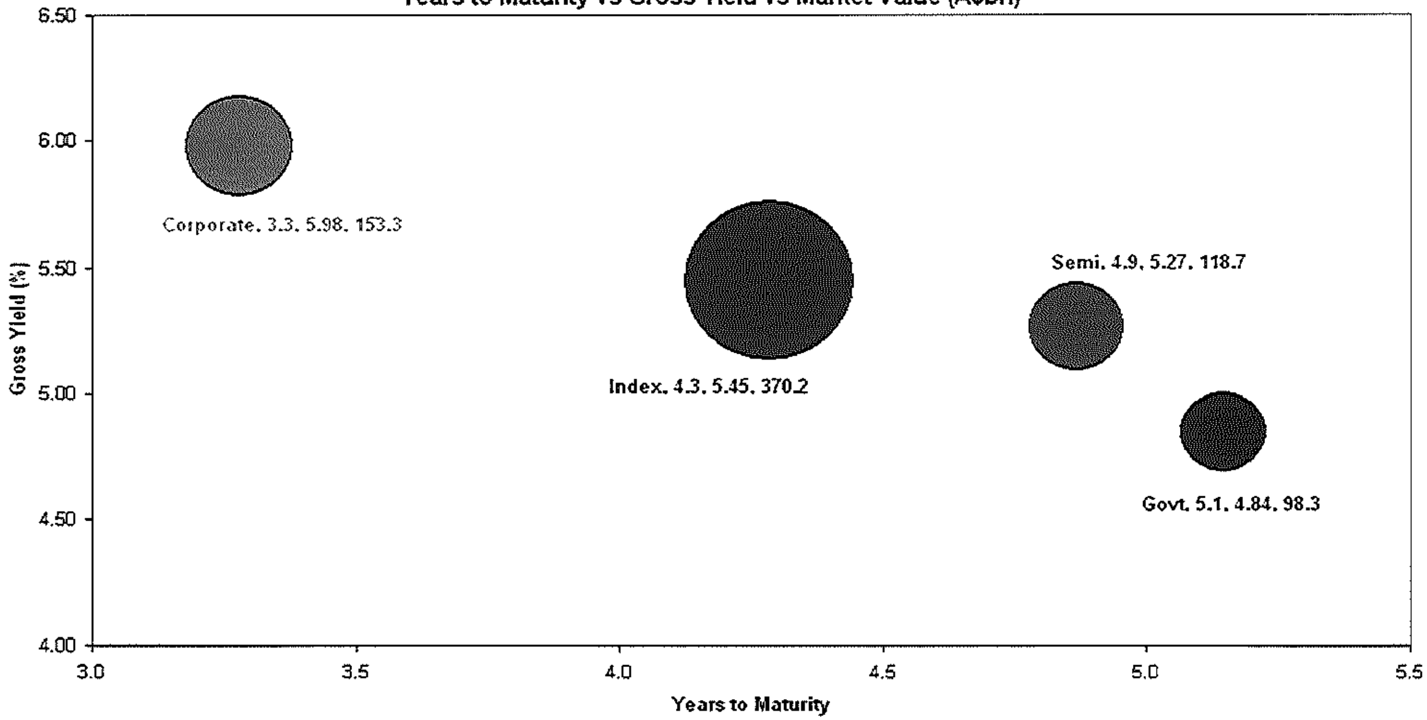
Note: Passport refers to product design output that specifies permitted investment guidelines. For illustrative purposes only.

Invesco Worldwide Fixed Income

Australian investment grade fixed income - an A$370 billion market

- Corporate sector (incl. supranationals & government guaranteed bank debt) currently 41% of total market; but
- Government sector expected to double in size over next two-to-three years

UBSA Composite Bond Index by Sector - as at 30th November 2009
Years to Maturity vs Gross Yield vs Market Value (A$bn)



Source: UBSA, Bloomberg

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Invesco Worldwide Fixed Income

Overview of Australian investment grade fixed income market

- Highly liquid Australian Commonwealth Government Bond (ACGB) market
  - growing again after many years of reduced public sector borrowing
- Government-related market also liquid
  - State borrowing agencies
  - Government guaranteed bank paper
  - Supranationals
- Investment grade credit market liquidity varies, but
  - highly-rated (A+/AA-)
  - relatively short duration (~3.3yrs) 38
  - banks and other financial issuers comprise xx% of credit index
- ABS/RMBS markets slowly reopening after the Global Financial Crisis (GFC)
  - high quality Australian RMBS
  - AOFM eligible RMBS purchase facility
- Bank liquidity/willingness to support issuer activity also improving since the GFC
  - Access to government guarantee schemes
  - RMBS now repo-eligible at Reserve Bank

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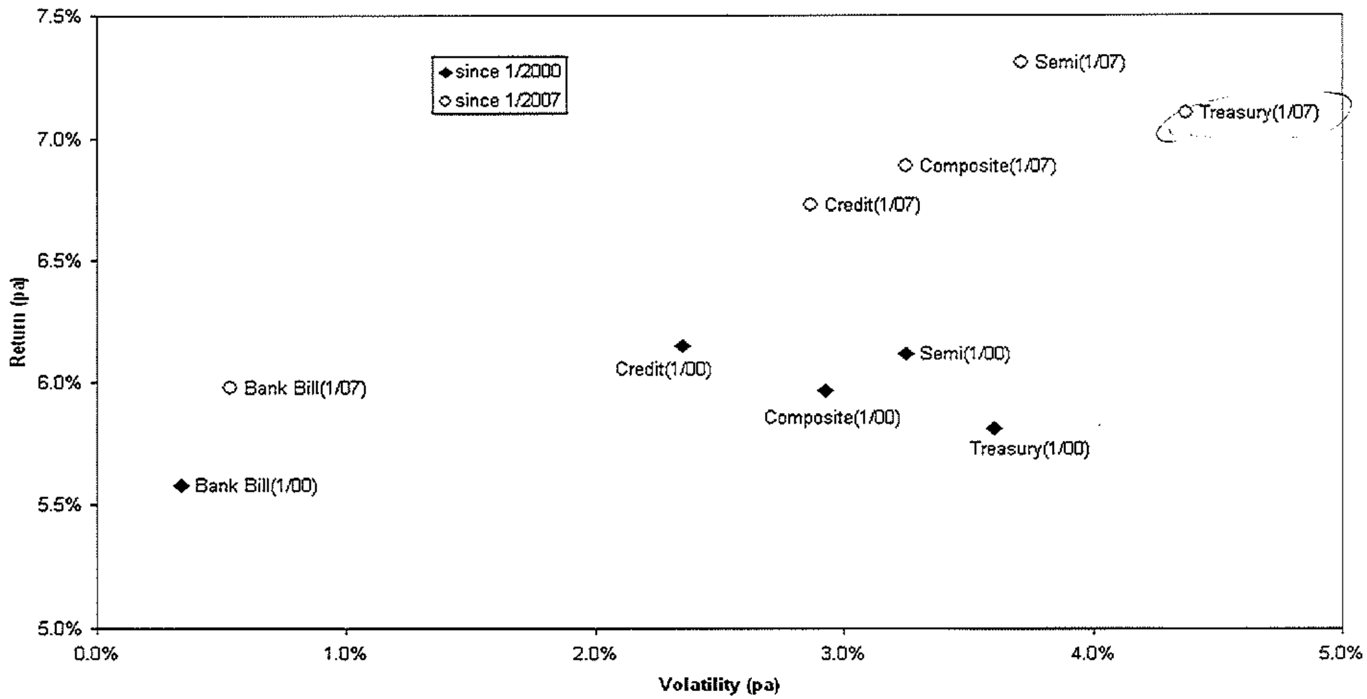
Invesco Worldwide Fixed Income

Australian investment grade fixed income risk and return opportunities

- Risk and return varies across sectors and across time
- Active sector and issuer management can therefore add value
- Important to tailor a portfolio that meets your own risk/return objectives

Risk and Return Analysis



Source: UBSA, Bloomberg

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Invesco Worldwide Fixed Income

Australian fixed income market – structural and regulatory changes

- The GFC affected some sectors of the Australian FI market more than others
  - High yield
  - Asset backed
  - Mortgage funds
- Greater public sector borrowing driven by quantitative easing
  - Expands liquid government and government-related sectors
  - Places pressure on private sector borrowing costs
- APRA, the Australian bank regulator, is reviewing bank capital requirements. Depending on the extent of change, this may
  - Constrain new bank lending, slow the economy
  - Raise borrowers' funding costs
  - Encourage more corporate bond issuance

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Australian economy strong by world standards

- Economy experienced only one quarter of negative growth during the GFC
  - last 6 quarters +0.6%, (Jun 09), 0.3%, -0.5%, 0.1%, 0.3%, 0.7%
- GDP is expected to grow by 1.5% in 2010
- High population growth @ 2.1%, has helped underpin growth
- Entered the GFC in excellent shape
  - Unemployment was at 33 year low in 2008 of 4.1%, now 5.8%; expect peak of 7%
  - Core underlying inflation running at 3.5% to Sept 09
  - Monetary policy eased sharply from 7.25% (Sept 08) to 3.0% but now tightening to 3.5%
  - Government now projecting fiscal deficit, from base of strong surpluses
    - May08 +$20bn, May09 Budget -$60bn
- Commodity prices firm
- Housing values down only ~10% and now back to pre GFC levels
- Banking sector in very strong position versus global peers
  - domestic focus, oligopolistic positioning, diversified financial services, only isolated credit problems
- AUD remains volatile but currently strong at 0.90 USD

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Australian market

- Australian economy has defied the global trend
  - banking sector strength will be provide sound base for growth
  - Stimulus package has been aggressive and effective
  - Chinese growth has underpinned demand for commodities
- Consolidation of financial services providers will add to strength
- Unclear how other Government policy will impact
- Significant liquidity remains to be invested
- Australian equity market has performed strongly, but still not current pricing levels remain below long term averages
- Risks remain
  - Housing prices still high
  - Increased Government debt may moderate long term growth rate 60 billion
  - Outlook for inflation is unclear in the short term

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Australian wealth management market

	Retail	Institutional	Total
Super	• Retail Pooled $370Bn • Self Managed Funds $287Bn	• Corporate $52Bn • Industry $197Bn • Government $178Bn	$1,100Bn
Non-Super	• Retail Unit Trusts $235Bn	• Life Office $64Bn	$300Bn
Total	$800 – 900Bn	$500 – 600Bn	

Fund of Funds $150Bn

Source: Investor Supermarket 30 September 2008.
APRA Annual Superannuation Bulletin June 2007.

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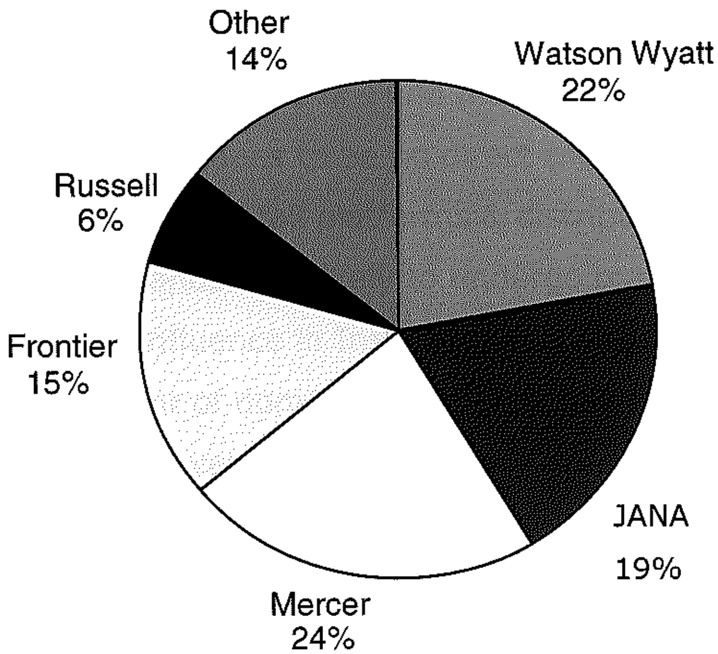
Consultants & researchers continue to exert control

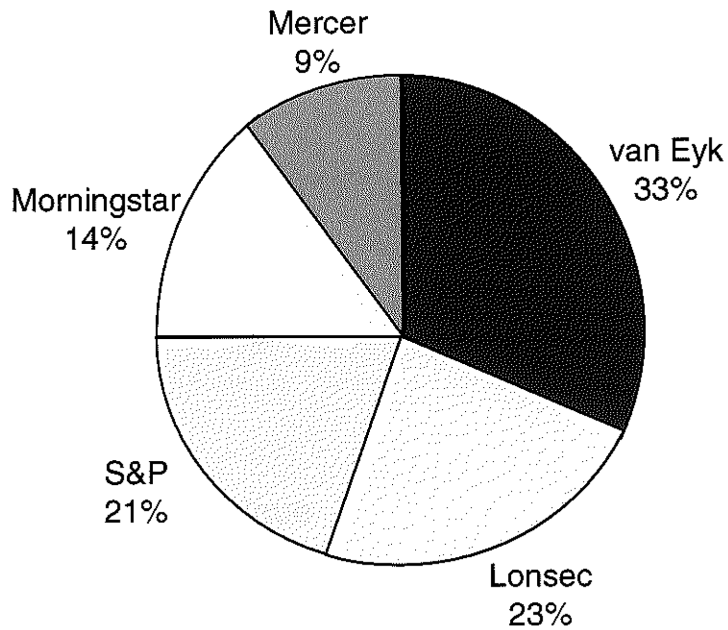
Consultants



AUM = A$570bn

Source: Investor Supermarket, 31 March 2009

Research Houses



AUM = A$450bn

Source: Money Management Magazine, June 2009

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Australian wealth management market trends

- **Market Segments**
  - Industry funds experiencing strong growth, but dealing with high exposure to unlisted assets.
  - Corporate Superannuation market will continue to decline.....Government funds growing
  - Self Managed Fund market continues to grow via accountants and is largest segment
  - Retail Fund-of-Fund market growing rapidly
  - Continues to be no direct (non-advised) retail market
- Consolidation of retail platforms & distribution is accelerating
- Regulatory landscape likely to undergo major changes
- Consultant influence in Institutional & Retail markets remains strong.
- Establishment of domestic boutiques has subsided
- Fee levels not yet under pressure
- Well established trend to defined contribution ~90%, will only continue
- Majority of assets in accumulation phase ~85%
- Continue to see increasing allocation to global asset classes, but home town bias remains
- Trend towards less complex products as many alternatives failed to deliver diversification
- Replication type strategies by largest investment funds and consultants increasing
- Research for largest funds continues to become more sophisticated and in-house

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Market activity

- Consolidation of retailers has accelerated
  - CBA acquired Bank West for A$2bn
  - Westpac (including BT) acquired St George Bank (including Asgard & Securitor) forming largest wealth mgmt. company in Australia, > A$100bn AUM
  - AXA acquired Genysis, increasing advisor numbers from 1100 to 1500
  - Merger of AWM and IOOF and then subsequent acquisition of Skandia/Intech
  - A number of retail advice businesses have failed
- Some global players looking to exit the Australian market
- Fund Managers narrowing strategies – markets and products
- Many property funds and mortgage funds are frozen due to lack of liquidity
  - > A$40bn AUM currently frozen. Includes many of the largest brands
- Starting to see manager change of underperforming managers (Bernstein, BGI, Acadian etc)
- Large inflows into Term Deposits, A$120bn in 2008 calendar year
- Most funds have had to carefully manage cash to meet significant currency losses in Q4 2008
- Investment activity is showing signs of acceleration

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Government and regulatory activity

- APRA have instigated weekly reporting of liquidity within Super funds
- All bank deposits guaranteed by Government – caused market distortion
- Government providing an optional priced guarantee for all wholesale bank lending
- Government provided A$10bn fiscal stimulus in Dec 08 & A$40bn in Q2 2009
- Government has provided minimal support to industries and particular companies
- Self imposed limit of $200bn in Government borrowings
- A number of government strategic task forces now running
  - ASIC, IFSA and the FPA are all considering the issue of commissions & conflicts
  - Tax Review is also prompting a review of Australia's retirement income system
  - Expect regulation to allow easier product rationalisation
  - Announcements regarding easier use of off-shore funds

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Investment strategies

- Equity allocations still down marginally on targeted range
- Transition of domestic assets to global is continuing in equities, fixed income and property
- Funds reviewing Strategic Asset Allocations
- Many funds managing liquidity closely to handle member switches
- Property funds & mortgage funds remain frozen due to lack of liquidity ~ A$40bn
- Large amount of AUM remains in Cash Term Deposits, >A$100bn
- Larger funds still near their upper limits for unlisted investments
- Starting to see manager change of underperforming managers
- Alternative strategies not provided expected diversification benefits
- Some opportunistic allocations to bargain assets
- Trend to emerging markets, or away from US, Euro, UK

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Our philosophy and its application

- Investment Insights
  - Combination of fundamental insights with a systematic application
  - Insights are based on experience and judgment
  - Quantitative methods are used to validate and apply our insights
- Information Processing
  - Global optimisation
  - Scaling with specific risk and Gaussian Normalisation
  - Ability to tailor portfolios specifically as required
- Risks Control
  - Risks are taken where we expect to be rewarded
  - Risk levels are scaleable

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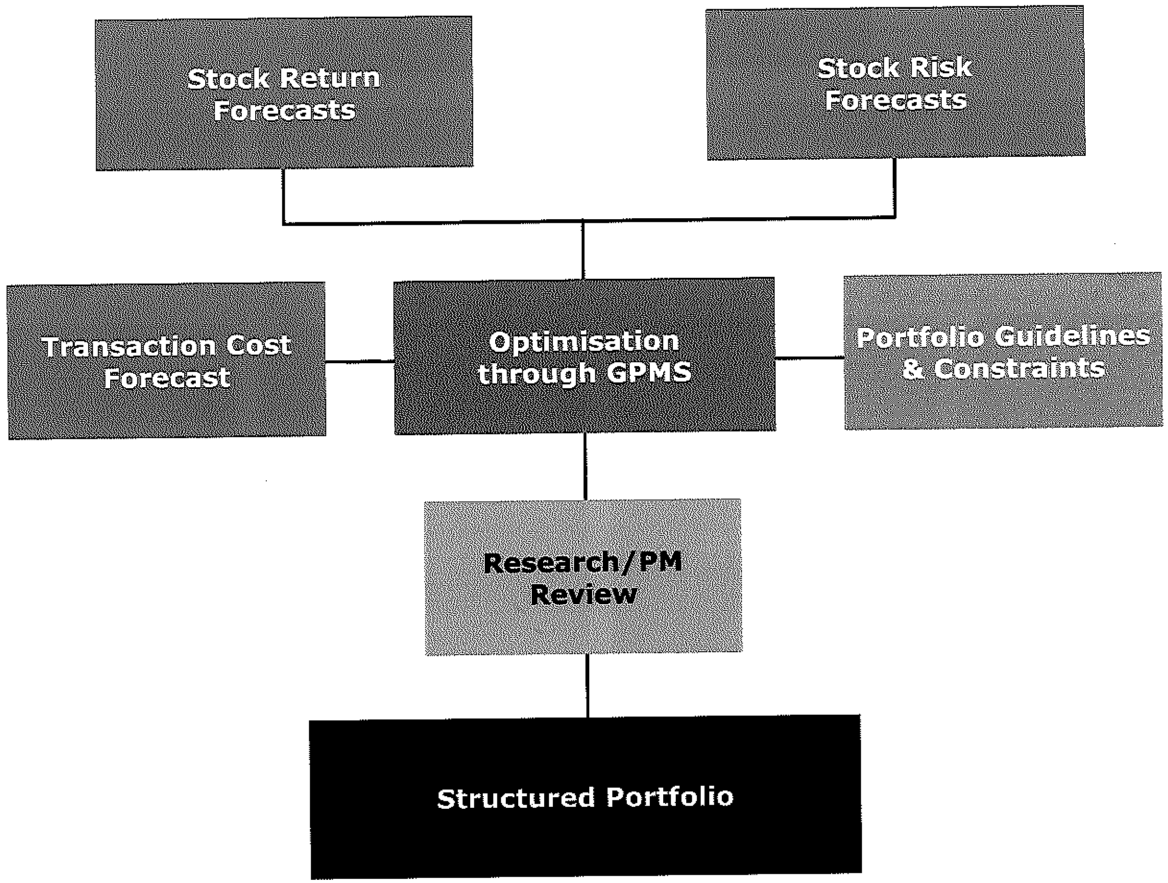
Integrated Investment Process



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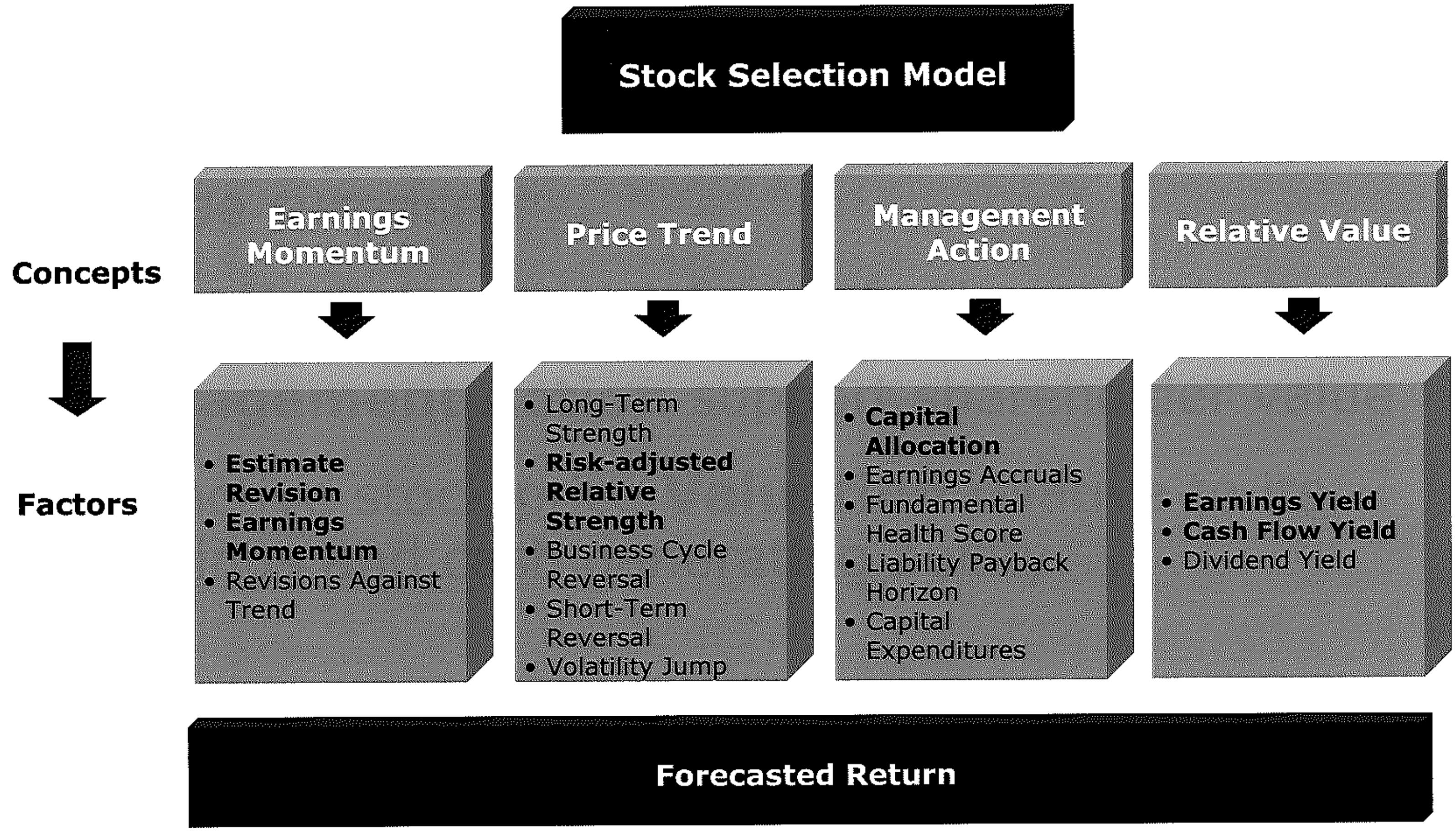
Stock Selection Model



For illustrative purposes only. Relevance for Australian model highlighted in bold.

What makes an attractive stock?

- Improving **Earnings Momentum** suggest further upside surprises
- **Price Trend** consistent with further upside
- **Management Action** support shareholder value
- Attractive stock price **Valuation** relative to its earnings and cash generating ability

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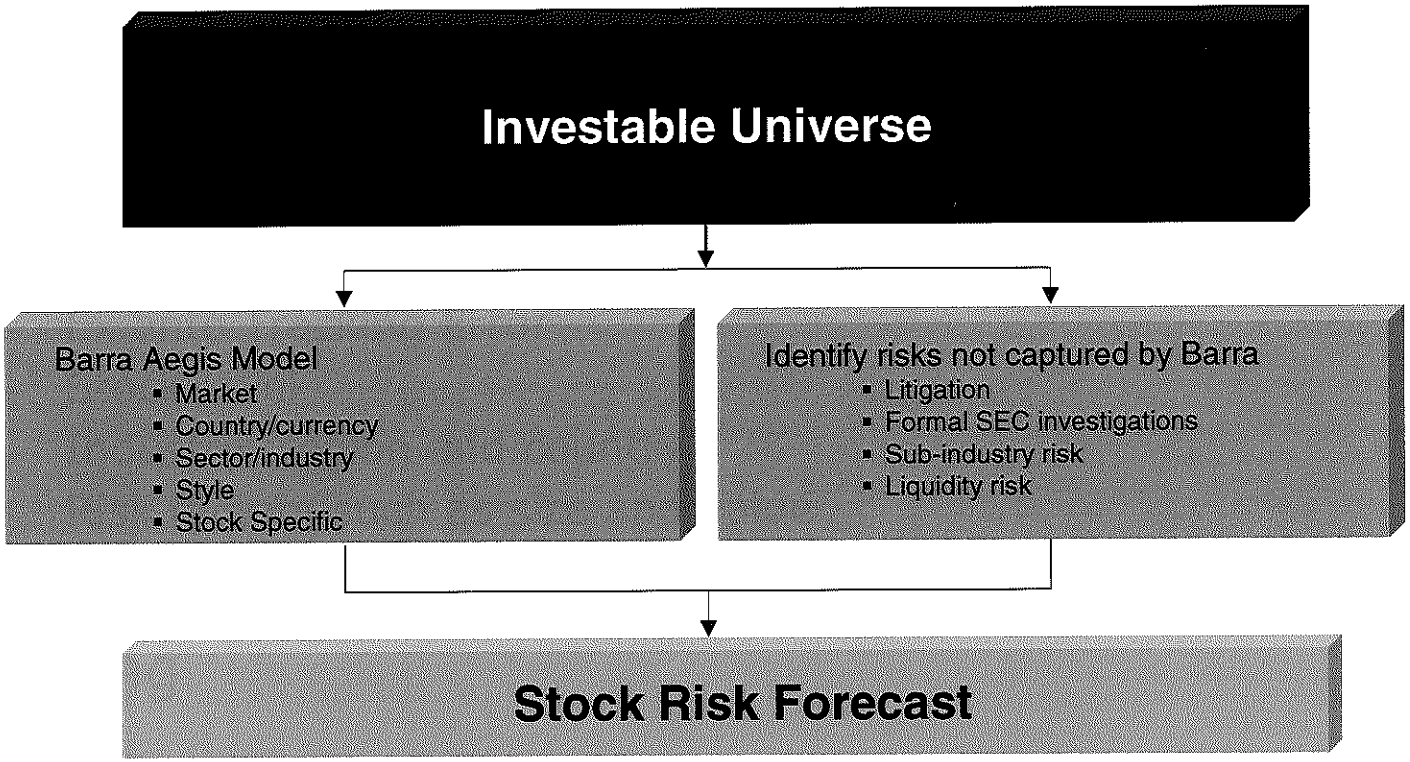
We develop a risk forecast for every Stock



For illustrative purposes only.

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Risk Management

- Global Portfolio Management System
- Risk levels are scalable
- Management of constraints
  - Ex ante Tracking Error
  - Stock level
  - Industry, region and country
  - Risk factors such as size and value
  - Liquidity
- Trading

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Market review
Australia

- Relatively mild downturn compared to the rest of the world
- Gradual recovery as confidence and business conditions improve
- Infrastructure spending provides impetus to demand
- Business investment strengthening
- Leverage reduced due to tighter lending standards
- Share markets outperformed the world YTD
- RBA sees risk of serious economic contraction passed by raising interest rates to 3.75 %*

Source: Reserve Bank of Australia as of 2 December 2009

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Market review
Australia – Banking sector

- Banks' capital ratios well above regulatory requirements
- Major banks' AA credit ratings remained unchanged since crisis unfolded
- Small exposure to US and domestic securitized assets
- Bank sheets heavily weighted towards domestic loans, particular low-risk households
- Depend on household and corporate sector distress
- Less leveraged than in comparable countries
- Policy measures have allowed for liquidity after Lehman collapse
- No material loss expected to Dubai exposure

* Such as wholesale funding guarantees and guarantees on all deposits in October 2008.

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Summary

- The domestic economy has fared well compared to other countries and the effects of the GFC have been limited
- The Australian banking system has survived relatively unscathed compared to other developed countries
- Globally investor risk appetite has been returning
- Equity rally as economic sentiment is picking up
- Continuing high demand for commodities has supported exports
- Commodities demand from Asia has remained strong, therefore providing confidence for future export levels

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Australia's financial sector

- Has one of the largest pools of funds under management in the world, now standing at around A$1.3 trillion (US$1.2 trillion), with more than 70 per cent of this being superannuation (pension) funds.
- Has the largest stock market by free-float market capitalisation in Asia (ex Japan), currently standing at around US$789 billion.
- Has the fastest growing foreign exchange market in the Asia-Pacific and seventh largest market in terms of global turnover. The Australian dollar (A$) is the sixth most traded currency.
- Is the second largest debt securities market in region (ex Japan) in terms of the issuance of both international and domestic debt securities. The country has more international debt securities outstanding than any other Asia-Pacific nation and ranks fourth in the region in terms of domestic debt securities.
- Has the fourth largest insurance market in the Asia-Pacific and the 12th largest in the world in terms of premium income.

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JPMORGAN TRANSITION MANAGEMENT

December 2009

J.P.Morgan

Transition management overview

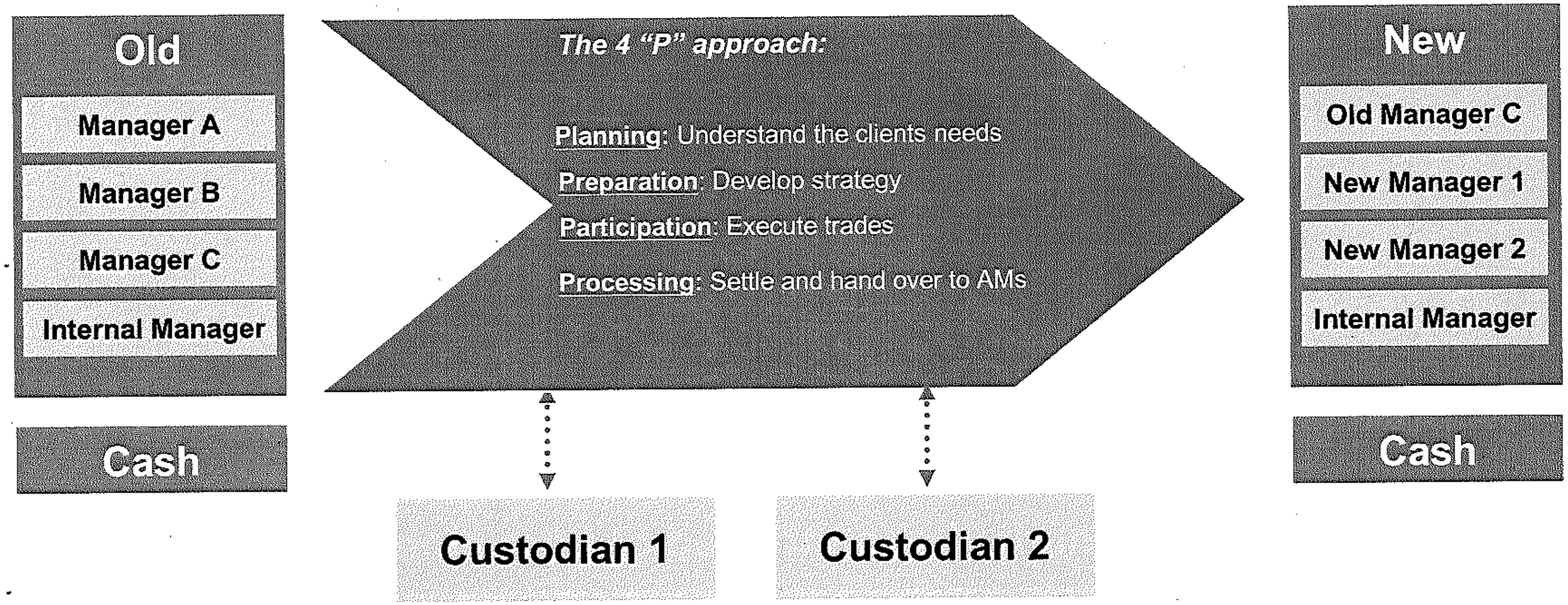
Concept

Implement client investment strategy restructures in a timely, cost effective & transparent manner

Transition Manager coordinates and executes the restructure

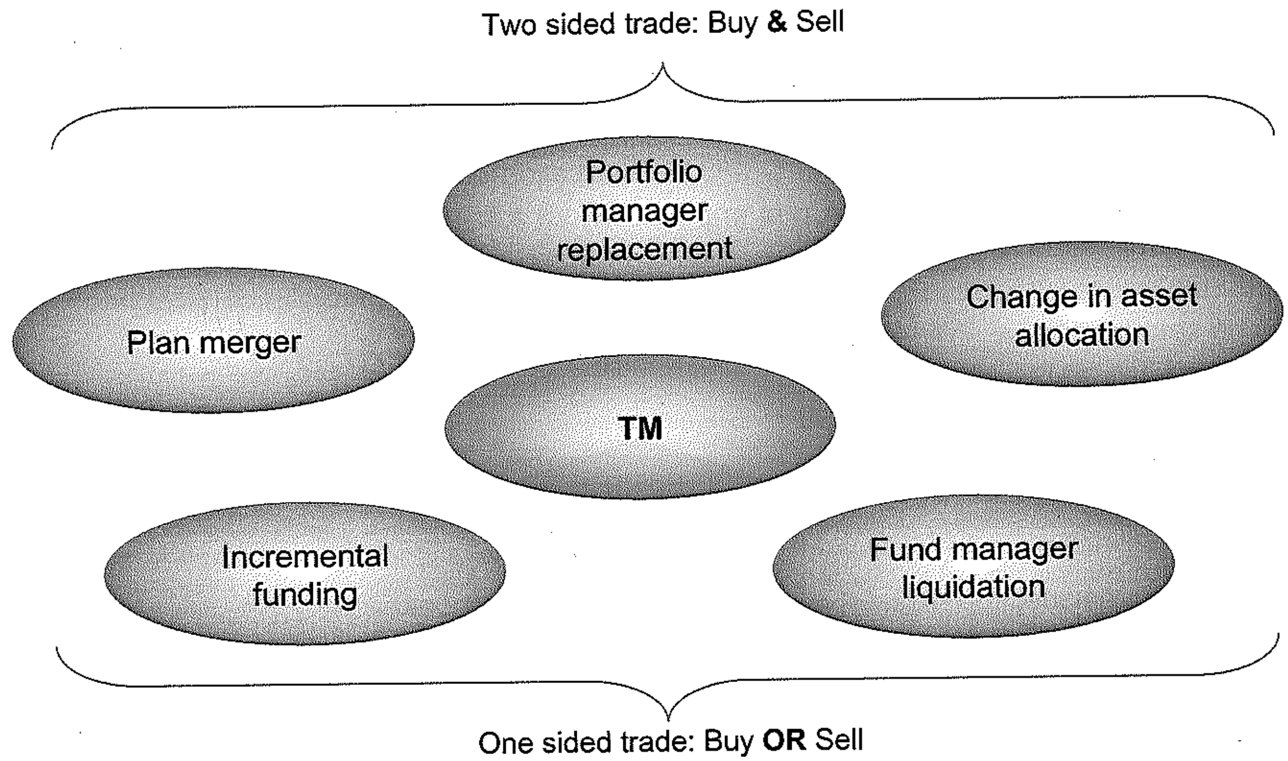
Client

Transition Manager



Costs & risks are directly associated with each investment restructure

Transition Events



One sided events tend to be more costly than two sided events

Transition management key objectives

Minimize cost	Manage risks	Provide operational efficiency
Poorly executed restructuring can result in excessive costs	Asset owners have responsibility to ensure that transitions are executed well	Outsourcing transition management to specialist providers can generate efficiencies
Costs	**Risks**	**Efficiencies**

Costs

- **Explicit costs**
  - Commissions
  - Market fees and taxes
  - Custodial fees
- **Implicit costs**
  - Spread costs
  - Market impact
  - Opportunity cost

Risks

- **Market risk**
  - General market movement
- **Security specific risk**
  - Price movement due to unique portfolio make-up
- **Operational risk**
  - Time delays
  - Errors

Efficiencies

- **Project management**
  - Coordinates custodian, investment managers, consultant and client
- **Trade management**
  - Legacy and target lists, in-kind transfers, cash management, accounting
- **Settlements**
  - Securities, currency, and cash

Difference between fund manager vs. transition manager

Factors	Fund Manager	Transition Manager
Core Competency	**Manage assets: Long-term** stock selection & portfolio modelling	**Manage risk:** Short-term efficient portfolio implementation services
Execution	**Individual** portfolio **trading** strategy Reliance on **3rd parties** (Equities, Fixed Income, FX).	**Consolidated** multi-portfolio trading strategy Centralised execution implementation across all asset classes
Timing	**Uncoordinated independent** trading strategies potentially exposing client to increased market impact & opportunity cost	**Coordinated** optimized execution timeframe to minimise market impact & opportunity cost across all client's **assets**
Reporting	Implementation cost and portfolio performance **co-mingled** Non-transition specific cost analysis and reporting of implementation	**Separate and distinct** implementation cost and portfolio performance **Specific** and **complete** cost analysis supported by detailed pre/post trade reporting
Measurement	Accountable for **alpha generation**	Accountable for **risk and cost management** throughout the transition

Transition managers provide efficient consolidated & coordinated portfolio construction with clearly measured results

Restructuring events in Asia

Activity is accelerating

Asian TM landscape

- Activity: Client transition activity across Asia
- Transition Managers: 6–7 main players in the region
- Asset Consultants: Stronger emphasis from consultants
- Media/ News: Increased product coverage from the media
- Client profiles: Sovereign Wealth Funds, Central Banks, Insurance companies, Government Pensions, University endowments, Asset Management

Implications of unmanaged events

Event type	Client Strategy	Observation
Cash injections	Cash to each manager	Uncoordinated, Crossing at close
Asset Manager change	Assets into cash, Cash to new AM	Out of market, no crossing
Asset Manager change	New manager inherits old portfolio	Performance holiday
Portfolio liquidations	Assets into cash	Uncoordinated risk management

Transition management process: 4 "P"

	Planning 1–3 weeks	Preparation 1–3 days	Participation 1–3 days	Processing 1 week
Transition process	Objectives Documentation Coordination Asset reconciliation	Analytics Cost estimates Trade Strategy	Equities Fixed income Foreign exchange Derivatives	Post trade reconciliation/ settlements Transaction reporting
	Client service			
Key deliverables	▪ Documentation ▪ Market Analysis ▪ Trade management ▪ Detailed project plan	▪ Portfolio review ▪ Pre-trade analysis ▪ Cost and risk estimates ▪ Performance benchmarks	▪ Access to multiple liquidity pools ▪ Integrated execution across asset classes ▪ Online real-time execution monitoring	▪ Comprehensive reporting ▪ Timely settlement of all trades ▪ Performance analysis

JPMorgan capabilities	▪ Excellent organizational and project management skills
	▪ Dedicated TM professionals
	▪ Operational market knowledge
	▪ Multi asset class experience
		▪ Pre-trade analytics
		▪ Quantitative analysis
		▪ Leading risk management expertise
		▪ Strength in research
			▪ Superior execution quality
			▪ Cross asset class product trading expertise
			  ▪ Equities
			  ▪ Fixed income
			  ▪ Foreign exchange
			  ▪ Derivatives
			▪ Willingness to commit capital
				▪ Customized reporting
				▪ Detailed post-trade review
				▪ Superior settlement rate

Trading capabilities

Fixed Income: As Agency and/or as Principal

- Leading liquidity provider in all major markets
- Connectivity to third party providers to access additional liquidity
- Electronic integration with transition management tools provide straight-through processing
- Odd Lot trading specialist

Equities: As Agent and/or as Principal

- Award winning algorithmic trading strategies
- Direct market access in over 50 countries
- Proprietary portfolio analytics to devise trading strategies appropriate for each risk profile
- Unique emerging market expertise

Foreign Exchange: As Principal

- Spot, forwards, options, non-deliverable forwards, cross-currency swaps
- Market-leading economic, fundamental and technical research including value-added strategy recommendations
- Presence in key FX trading centres with 24-hour coverage on all market days
- Proprietary analytic risk management tools to assist clients in their hedging, trading and investment decisions

Single approach across equities and fixed income is NOT a solution

Factors	Equities	Fixed Income
Market	Exchange traded	Over the counter
Price Discovery	Order driven on exchanges	Quote driven by dealers
High volume execution	Efficient : Portfolio trading (algos) or Sales-trader	Inefficient: Traditionally Voice multiple dealers or eChannels
Liquidity	Limited information leakage	Greater information leakage
Crossing	Typically 10-15% MSCI Global	Typically 4–5% Barclays High Grade

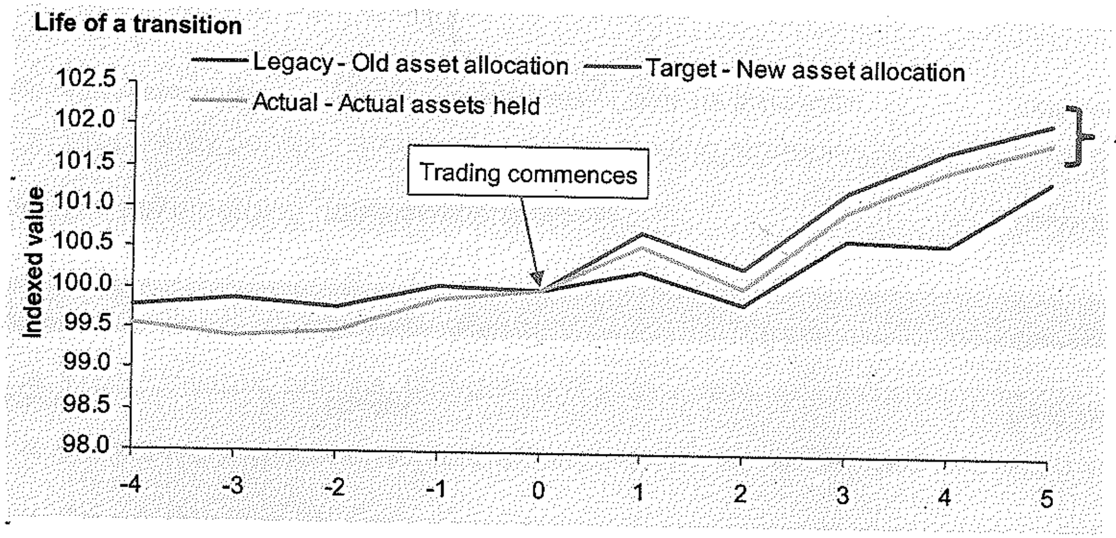
Clients need to be convinced that Transition Managers apply adjust their trading approach to each asset class

Transition management approach to cost

Investment strategy restructure implementations impacts asset value

Implementation Shortfall = Paper Return – Portfolio return (Andre Perold 1988)

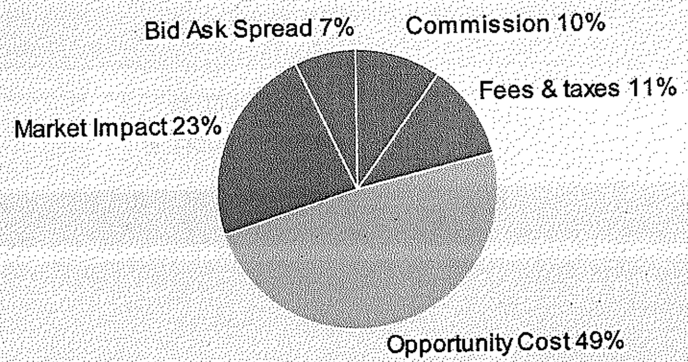
- Perfect transition (paper trade)
  - Portfolio assets Instantaneously fully invested the new allocation, with the same exact value
  - No explicit commissions, taxes, fees or implicit frictional trading costs
  - Perfect transitions only exist on paper. All trading impacts asset values
- Implementation Shortfall for a transition–The difference between the portfolio value after a perfect transition or paper trade and the actual portfolio value after the transition.

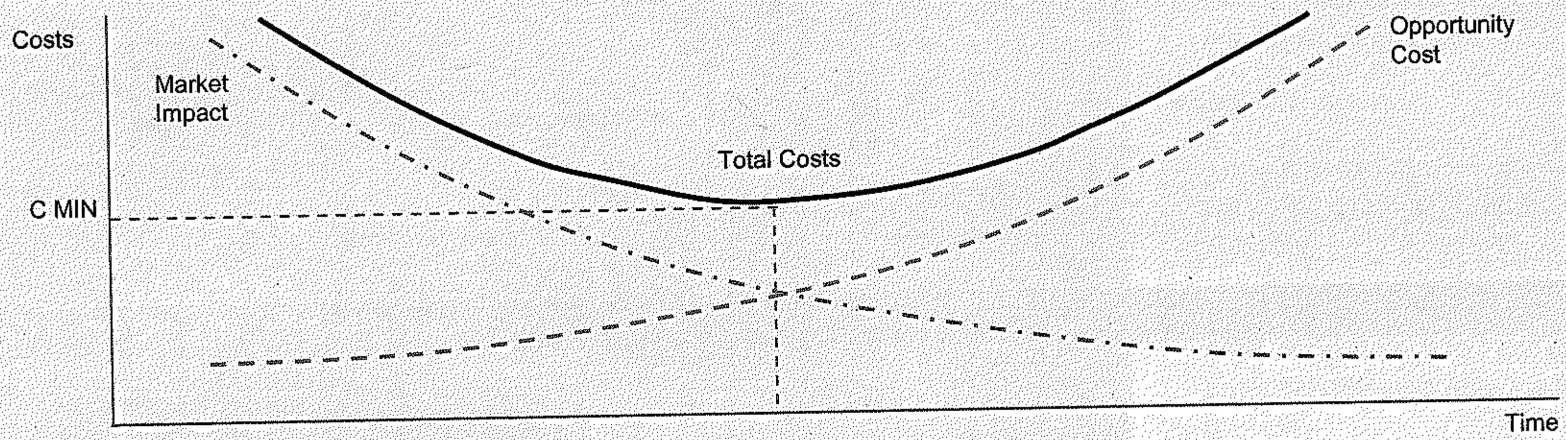


Transition managers seeks to minimise the gap between the actual portfolio value and the notional target value through an optimised trading strategy.

Equity portfolio cost components in a transparent market

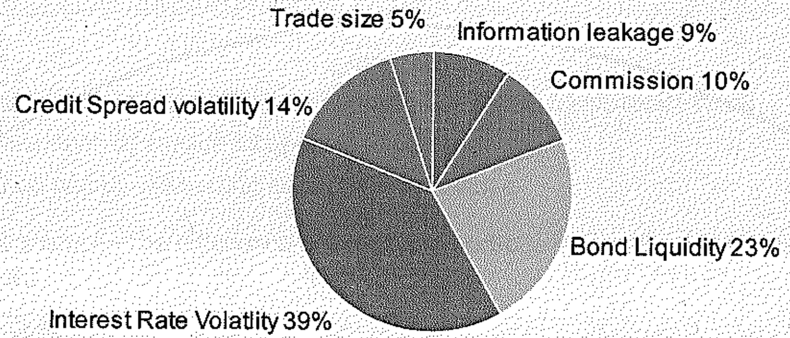
Finding the right balance between the largest cost components: market impact vs opportunity cost





Fixed Income portfolio cost components in an opaque market

All costs are integrated into the bid–offer spread



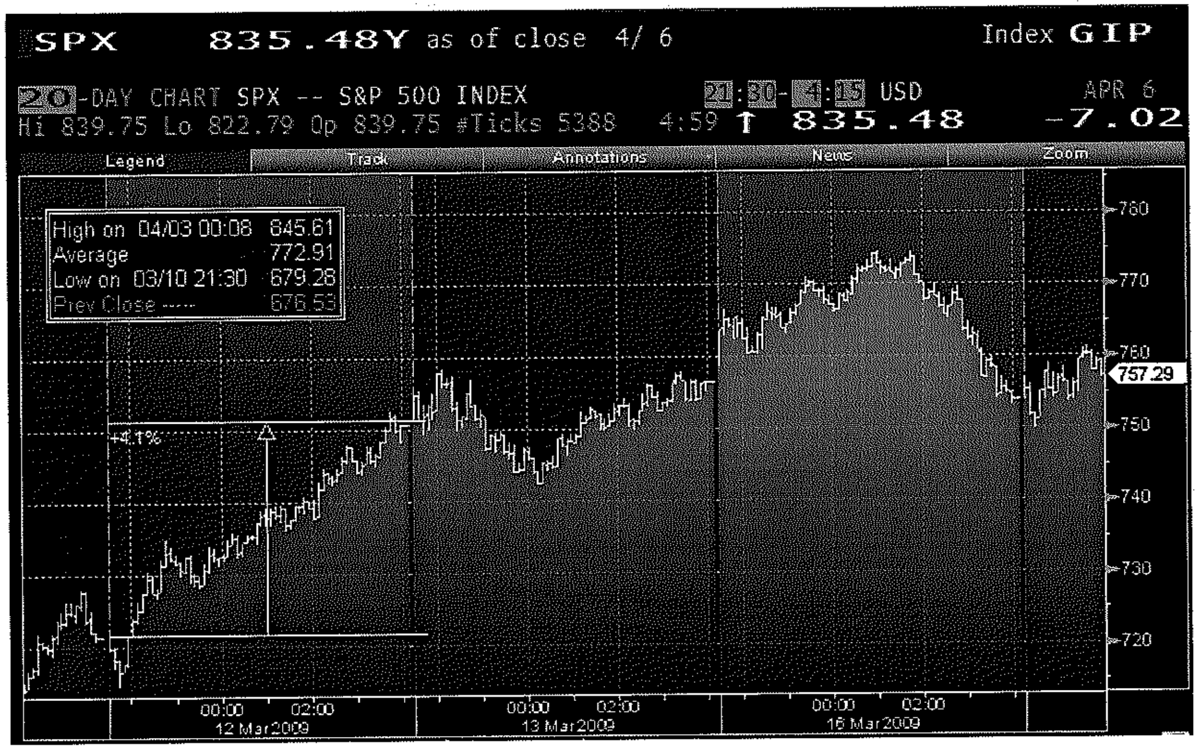
Approaches to minimize costs

- Interest Rate volatility
  - Duration matching
  - Hedge with Futures
- Credit Spread volatility
  - Sector matching
  - iTraxx Europe
  - DJ CDX
  - Single name CDS
- Bond Liquidity
  - New issue
  - Repo market
  - Futures Market (cheapest to deliver)
- Information Leakage
  - In-source ePrices from eChannels
  - Bloomberg Runs and MSG
  - Prior execution trades
- Size traded
  - Relationship with odd lots dealers
  - Reward with liquid flow

Risk Management: Multi-manager cash injection

Fund Manager	Region / Product	Cash Value	Investment Date	Equity Market Performance	Expected NAV - Mar 10th	Actual NAV - Mar 10th	Net variation (in Mil)	Reason
FM 1	Equity - MSCI Global	250	Mar 12th	4.50%	261	249	-12.25	Traded at close
FM 2	Equity - MSCI Global	250	Mar 12th	4.50%	261	249	-12.25	Traded at close
FM 3	Equity - MSCI Global	250	Mar 12th	4.50%	261	258	-3.25	Traded during day
FM 4	Equity - MSCI Global	250	Mar 12th	4.50%	261	252	-9.25	Traded at close and Next day
Total		1,000			1,045	1,008	(37.00)	No benefit of market rally

Risk considerations in a multi-manager cash injection



- One sided events expose clients to the full market volatility
- Client exposed to four uncoordinated trading strategies
- Client is not aware of the actual implementation costs

Asset Managers

- Tend to cross at market close exposing client to intraday volatility
- Wait for custodian to confirm cash deposit prior to trading potential delaying Asia markets by 1 day

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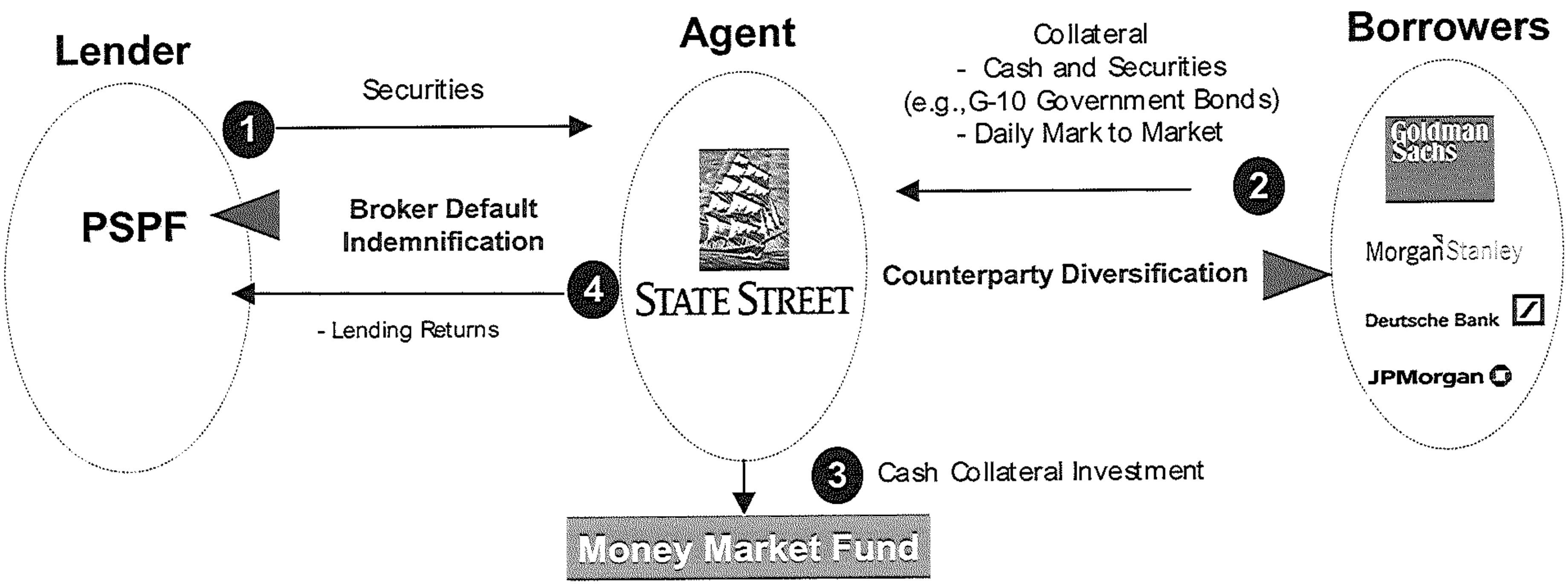
What is Securities Lending?



Why should PSPF lend?

> Put idle assets to work and extract "hidden" value
> Effective manner to generate incremental revenue with minimal risk
> Enhance portfolio value
> Generate cost savings to lower administration, custody, and other expenses

STATE STREET

Indicative Return*

Asset Class/ Benchmark	Portfolio Assets US$'Billion	Total Spread (bp)	Utilization (%)	Total Earnings US$'000 (annualized)	Gross BP Return to Lendable (bp annualized))
US Government Bonds					
US Government Note	1	30	95%	$2,850	28.5
US Agency	1	20	75%	$1,500	15
European Government Bonds					
UK Gilt	1	30	60%	$1,680	18
German Bund	1	25	50%	$1,250	13
France Oat	1	20	40%	$800	8
US Corporate Bonds					
Investment Grade	1	30	10%	$300	3
Non – Investment Grade	1	50	15%	$750	8
European Equity					
UK FTSE	1	30	15%	$450	5
German DAX	1	150	30%	$4,500	45
France CAC	1	100	40%	$4,000	40
US Equities					
MSCI US Equity	1	75	10%	$750	8
Asia Equities					
Hong Kong Equity	1	70	40%	$2,800	28
Japan Equity	1	60	25%	$1,500	15

*** Figures are derived from current lending demand and based on broad parameters. Assumes lending portfolios are able to participate in cross border securities lending activities without adverse legal, regulatory, compliance, and tax implications. Returns may vary according to market conditions, and do not imply that actual performance may be achieved.**

Lehman Brothers Default

> Lehman Brothers, Inc (LBI) and Lehman Brothers International Europe (LBIE) were placed in default in mid-September 2008 under the terms of the borrower agreements

> Subject to the terms of the SLAA (Securities Lending Authorisation Agreement), the following are covered:
- Shortfall between the collateral value and the market value of the replacement securities
- Distribution on the Loaned Securities (e.g., dividends, coupons, etc)

> No unsecured exposure in securities on loan with Lehman Brothers

=> *State Street had more than sufficient collateral to purchase replacement securities*

=> *State Street did not have to exercise our indemnification policy*

SF Risk Preparation – Prior to Default

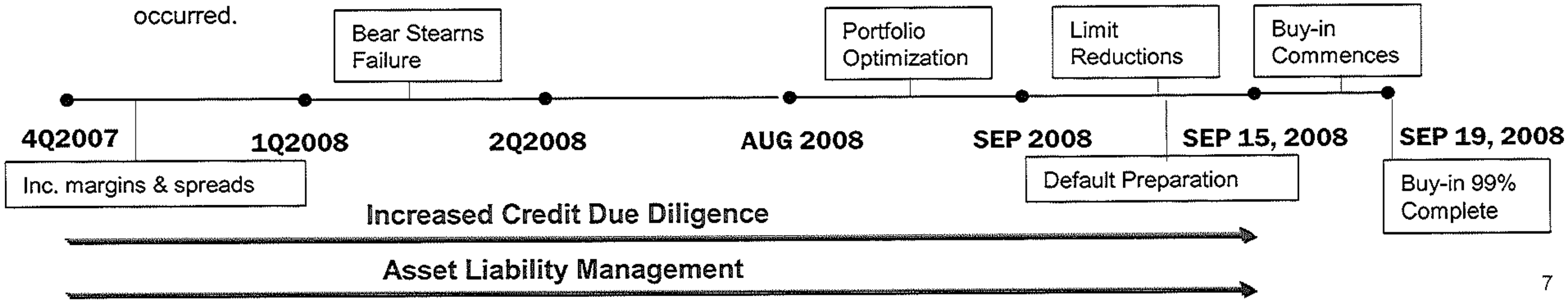
> **Increased Credit Due Diligence**
- SF Risk team increased its level of due diligence including meetings with the CFO and Treasurer of Lehman
- Regular analysis was being performed on Lehman by State Street's credit teams.

> **Increased Spreads and margins**
- In the months leading up to the Lehman default we required a larger spread from Lehman for some product types
- SF Risk increased margin requirements on some non-cash collateral types

> **Reduced Limits**
- SF Risk restricted certain non-cash collateral types in the weeks leading up to the Lehman default.
- Term trades were restricted in the months prior to Lehman's default.
- Balances began to be reduced in the week prior to Lehman's default.

> **Asset / Liability Management**
- In the months prior to Lehman's demise, SF Risk began optimizing Lehman's portfolio so that any collateral on-loan which was considered illiquid could be recalled.
- Loans and collateral were matched to the greatest extent possible.
- Liquidity of the reinvestment pools was maintained at a high level

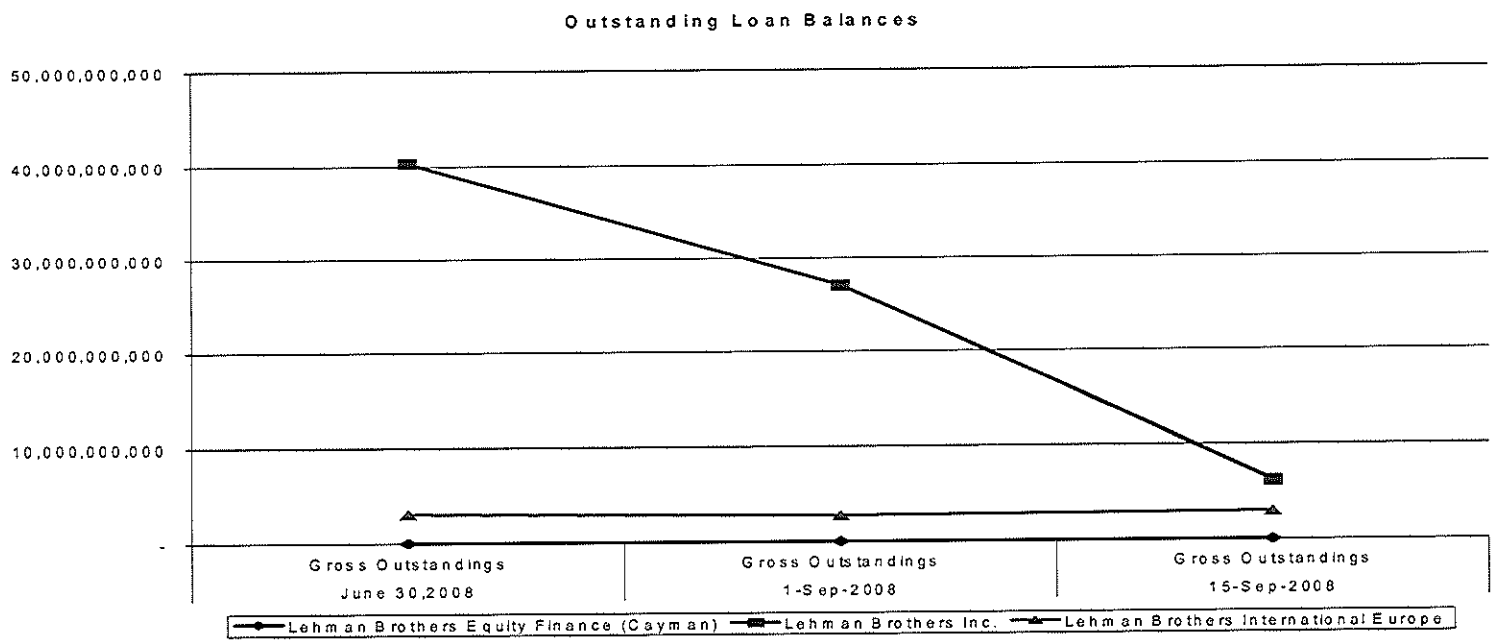
> **Default Preparation**
- The default plan was prepared and distributed in advance of Lehman's default.
- This preparation ensured that all teams were prepared to take action in an appropriate and orderly fashion when the default occurred.



STATE STREET

The management of counterparty risk effectively supported the reduction in reducing outstanding balances with Lehman prior to their default

- June 30 – September 1: $13.6 billion or 31% reduction
- June 30 – September 15: $34.4 billion or 79% reduction
- September 1 – September 15: $20.7 billion or 70%



STATE STREET

Lehman Brothers - Time Line

Sunday September 14	Monday September 15	Tuesday September 16	Wednesday September 17	Thursday September 18	Friday September 19	Continuing Sept. 20 +
Key:						
Lehman Brothers International (Europe) : LBIE	•Bankruptcy declared •Default notice served •Buy in process initiated - $1.3B Intl. Equities - $1.4B Fixed Income	• 96% of buy-ins complete •100% of sovereign debt collateral sells complete	•Small residual trade executions continue – 99% complete	•Essentially complete – very small Japanese Equity odd-lots remain		
Lehman Brothers Inc. : LBI	•All securities recalled •$26.5B of $27B out-standing Fixed Income returned same day	•Recalls continue •Remaining $.5B of Fixed Income returned	•Default notice served late P.M.	• ~$6.3B of buy-ins commenced	•Bankruptcy declared •Buy ins continue significant progress made	•99% complete by early following week <8M remaining at end of September
Lehman Brothers Equity Finance (Cayman) Limited : LBEF	•All securities recalled	•Default notice served •Recalls 100% complete	•Bankruptcy declared			

Exposure:							*Excess Collateral:*
LBIE	$2.7B	$108M	$27M	$0			*$266M*
LBI	$6.8B	$6.3B	$6.3B	$2.8B	$1.5B	$63M	*$125M*
LBEF	$1.3M	$0					*$.6M*

9

STATE STREET

Third Party Lending

Advantages

Third party oversight of lending activity: separation of custodian from lending agent.

Greater flexibility and control: Allows Lender to choose the lending agent.

Potentially better lending revenues: Allows Lender to choose the lending agent with the best performance.

Efficiency: Only need to deal with 1 lending agent.

Disadvantages

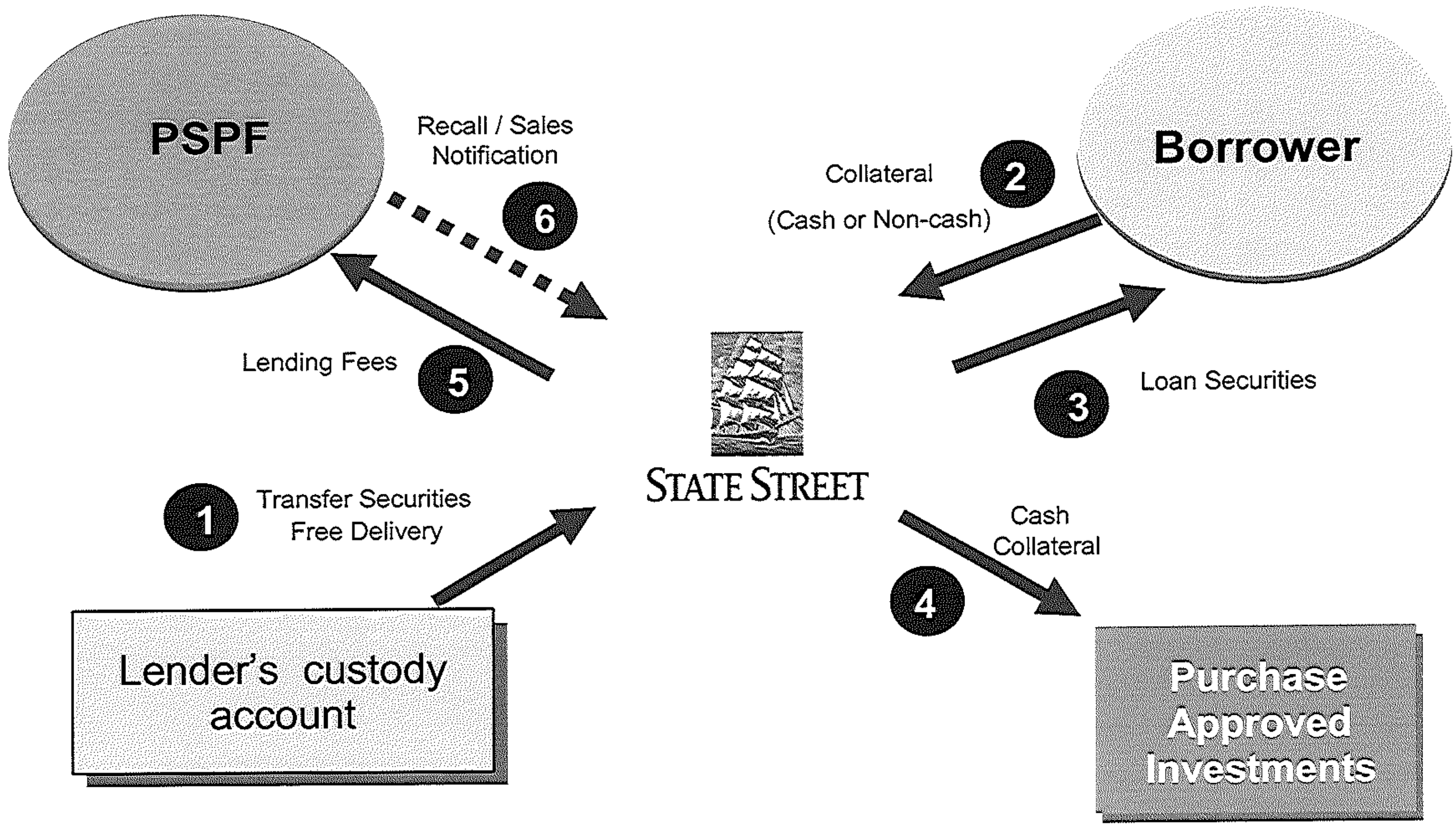
Operations link: Between custodian and lending agent.

Mitigation: Using SWIFT

Indemnification: Not always available from certain lending agents.

Mitigation: Indemnity from State Street

Third Party Lending - Workflow



Treasury Market Practices Group (TMPG)

- Sponsored by Federal Reserve Bank of New York
- Composed of senior business managers and legal and compliance professionals from securities dealers, banks and buy-side firms
- **State Street is one of the members of TMPG**
- Committed to supporting the integrity and efficiency of U.S. Government Treasury market

> TMPG Proposal – Financial charge on fails
- Financial Charge
- Provide incentive to effect timely settlement and mitigate fails
- Only applies to DVP transactions (includes repos and sec lending transactions)
  - No charges on Free Deliveries/Free Receipts
- Charge officially between investor and dealer
- Fee Calculation - greatest of (a) 3% minus the lower limit of fed funds target rate band and (b) zero

> Client Impact
- Sec Finance to cover penalty fee for sell fails caused by late return (up to $50 million block)
- Sec Finance to claim borrowers on clients' behalf for return fails
- Sec Finance will be claimed by borrowers on clients' behalf for loan fails

SSgA's Investment Philosophy

We believe that ...

- **Asset allocation is the most important decision**

  Explains over 90% of the variance in plan returns and is the greatest contributor to a fund's long-term performance results*

  Balanced portfolios provide for professional monitoring and management of asset class exposures

  Select and manage against the appropriate benchmark (cash vs liabilities)

- **Diversification is key**

  Exposure to risky assets helps to satisfy liabilities

  Diversification increases risk-adjusted returns

- **Cost savings translate directly into performance**

  Especially in low return environments

- **Enhanced and active management can play an important role**

  Passive management provides broad exposure at low cost

  Active management plays an incremental role to add value in less efficient markets

* Brinson, Hood, and Beebower, *Determinants of Portfolio Performance*, Financial Analysts Journal, July - August 1986, p.39-44.

MACS Investment Process

Incorporates comprehensive strategic and tactical asset allocation solutions

- **Strategic Asset Allocation**
  - Development of sound strategic asset allocation is key
  - Importance of global diversification
  - Customise options to provide distinct choices across the risk spectrum

- **Tactical Asset Allocation**
  - Seeks to add value by actively managing asset mix with strict risk controls
  - Global markets are not fully efficient
  - Systematic investment process with fundamental review

MACS Tactical Asset Allocation

Disciplined three step investment process

1. Evaluation

Determine the relative attractiveness of stocks, bonds and cash

Employ top-down macroeconomic overview and bottom-up quantitative analysis

2. Construction

Rigorous screening process

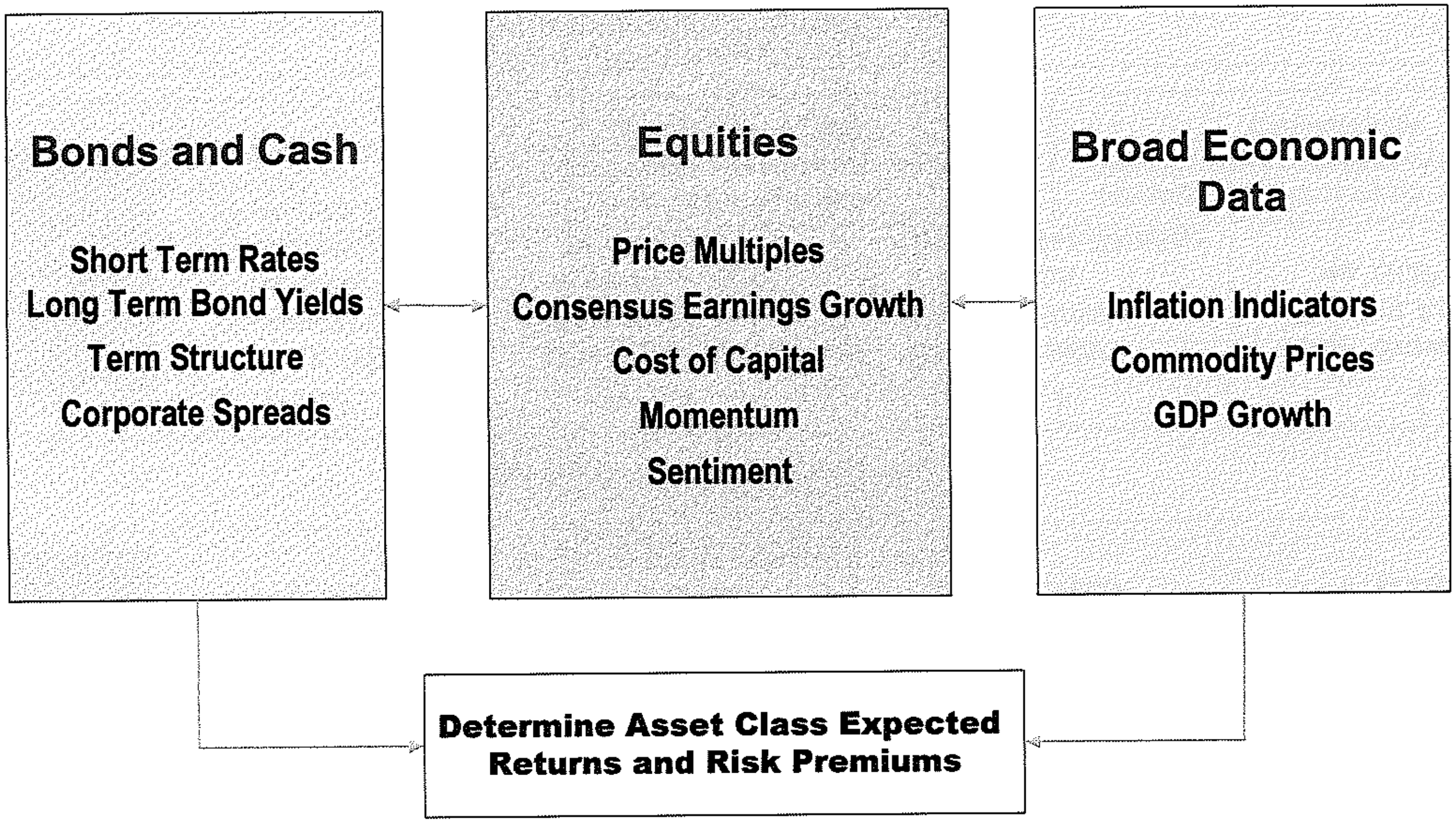
Quantitative optimisation and fundamental review

3. Implementation

SSgA toolkit provides cost effective implementation

Investing involves risk including the risk of loss of principal.

Evaluation: Broad Asset Class Analysis



Source: SSgA

Evaluation: Market/Country Selection Ranking

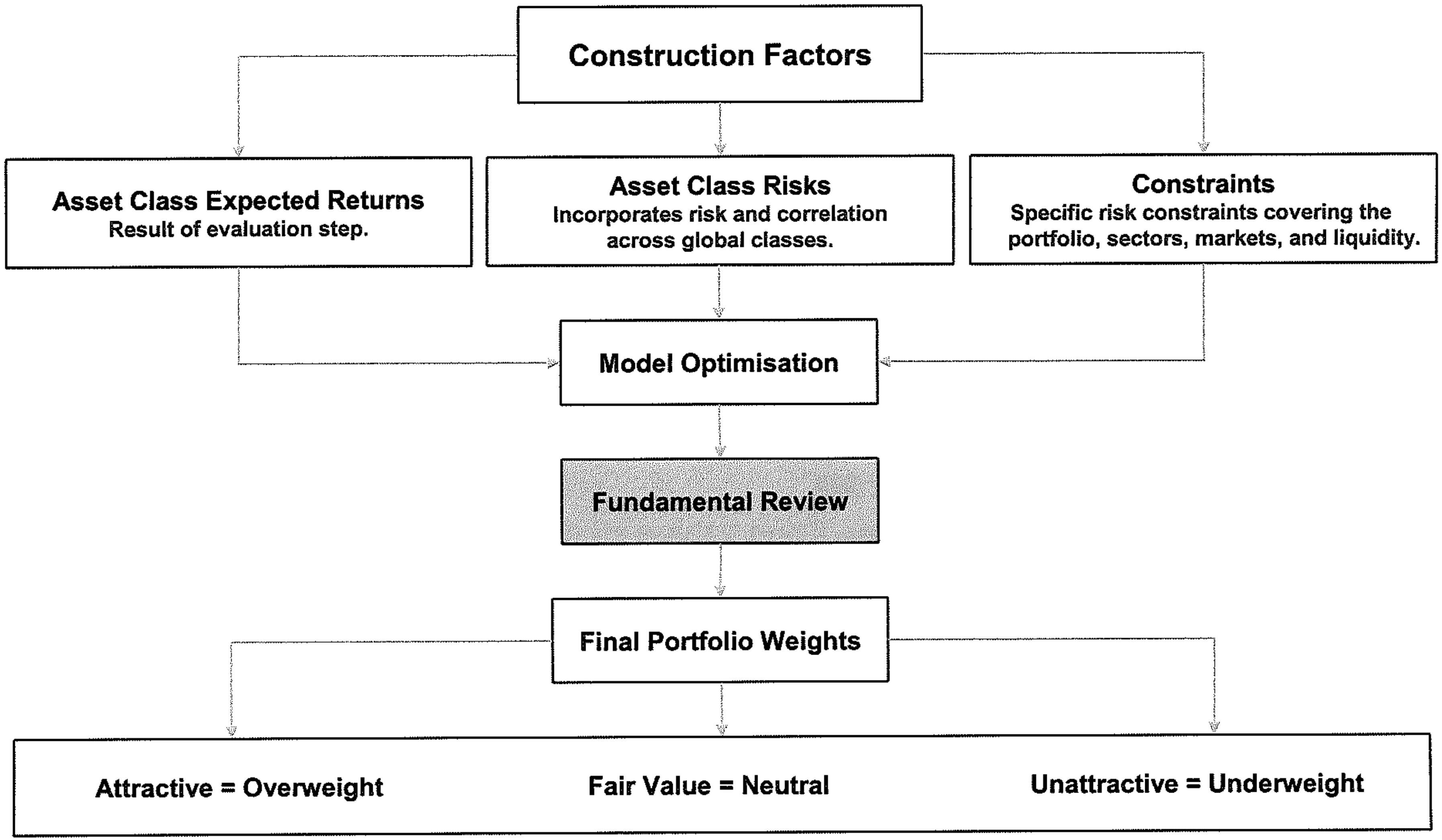
	Value	Momentum	Sentiment	Macro
Methodology	Fundamental analysis	Price Trend analysis	Estimate Revision analysis	Economic analysis
	Aggregation of Company Data			
Model Factors	• B/P vs. ROE* • Forward B/P vs. ROE* • Discounted CF • Forward E/P	• Price Momentum • Weighted Ave. Return of Prior 24 months	• EPS Diffusion • Sales Estimate Diffusion • Mean Sales Change	• GDP Growth • Current Account vs. GDP

Rank Markets' Expected Return

* Price multiples are "sector-adjusted"

Source: SSgA

Construction: Optimisation and Fundamental Review



Source: SSgA

Investment Risk Management for Multi Asset Class Solutions

- **Exposure Analytics**

  Systematic pre and post trade tolerance checks to verify compliance with portfolio guidelines and policy targets/bands

- **Risk Analytics**

  Ex-ante sample portfolio risk metrics generated through the use of internal and external modeling tools reviewed by Portfolio Managers and Senior MACS Management

  Ex-post review of select portfolio risk characteristics relative to benchmark

  Ad hoc risk analysis customised to meet client specifications

- **Monitoring**

  Monthly review of portfolio performance attribution reports by Portfolio Managers

  Monthly MACS Management review of all tactical portfolio positions to ensure consistency with guidelines and constraints

  Regular Portfolio Management team review to monitor and evaluate performance of underlying strategies

  Quarterly reporting to the Investment Committee by MACS CIO

SSgA Risk Management Overview

- **Protect SSgA and its clients by providing an independent assessment framework to evaluate investment, counterparty and operational risk**
- **Chief Risk Officer (CRO) is a member of the EMG (Executive Management Group) reporting directly to SSgA CEO and State Street Corporation CRO**

  Leverage State Street Corporation's Enterprise Risk Management function

Maureen Miskovic, EVP
Chief Risk Officer
State Street Corporation

Scott Powers
President and Chief
Executive Officer, SSgA

Jacques Longerstaey
EVP, Chief Risk Officer
SSgA

- **Regular interaction with Compliance, Legal and Corporate Audit**
- **Risk staff has representation on all major governance committees:**

SSgA Governance Committees			
Investments	**Product**	**Fiduciary**	**Operations & Compliance**
Technical Committee			Global Operations
Derivatives Sub-Committee			Valuation
Credit Risk			Operational Risk
Trade Management Oversight			Data Governance
			IT Steering

Team Objectives

- **Independent team is closely aligned with the Investment function**

about counterparty credit risk belong the risk management dpt.

- **Investment Risk – provide independent analysis to ensure appropriate levels of risk exist across the portfolios**
- **Credit Risk – monitor and reduce exposures as determined by market events or policy**
- **Operational Risk – reduce the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events**

Source: SSgA

Team Objectives

- **Investment Risk — provide independent analysis to ensure appropriate levels of risk exist across the portfolios**
  - Monitors investment risk exposures across investment portfolios for both internal purposes and select regulatory requirements
  - Uses combination of third party and proprietary developed analytics
  - Assists in product development and review process
- **Credit Risk — monitor and reduce exposures as determined by market events or policy**
  - Establishes counterparty policy for SSgA
  - Establishes credit policy requirements for SSgA Cash Management
  - Determines derivative policies and procedures
  - Approves and monitors counterparty exposure
  - Assists Legal to ensure favourable credit terms in ISDA agreements
  - Manages Prime Broker relationships and exposures
- **Operational Risk — reduce the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events**
  - Develops and reports key risk indicators (SSgA and enterprise); escalates issues
  - Collects loss data for trending analysis
  - Prepares enterprise risk reports including Risk Management Self Assessment & Plan (RMSAP)

SSgA Risk Management

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STATE STREET

Maureen Miskovic, EVP
Chief Risk Officer
State Street Corporation

Scott Powers
President and Chief Executive Officer, SSgA

Jacques M Longerstaey
Executive Vice President & Chief Risk Officer

Jim Crumlish
Risk IT
Vice President

Nicole Blundell
Executive Assistant

Investment Risk

- **Patrick K Armstrong**, Vice President
- **Andrea D'Abramo**, Assistant Vice President
- **Craig Slater**, Assistant Vice President
- **Minh Hoa Pham**, Vice President
- **Julia Imboden-Bourne**, Vice President
- **Jonathan Adams**, Assistant Vice President
- **Anthony Sutcliffe**, Assistant Vice President
- **Peter James Gray**, Officer
- **Fredrik Gjerstad**, Vice President
- **Andrea Au**, Vice President
- **Timothy P Corbett**, Vice President
  - **Yi Yi (Richard) Xu**, Vice President
- **Faruk Patel**, Vice President
- **Luis Roman**, Vice President
- **Charles Y Tao**, Assistant Vice President
- **Gary Zhang**, Principal
- **Kyle P Kelly**, Officer

Credit Risk

- **Jeannie Shanahan**, Vice President
- **Jeffrey A Morrissey**, Vice President

Operational Risk

- **Jack A Faer**, Senior Vice President
- **Susan M Armstrong**, Vice President
- **Carole Morin**, Vice President
- **Evelyn Punzalan**, Vice President
- **Edward J Sonier Jr**, Vice President
- **Diane H Doering**, Vice President
- **Ann Malatos**, Vice President
- **Jiao (Tracey) Wang**, Assistant Vice President

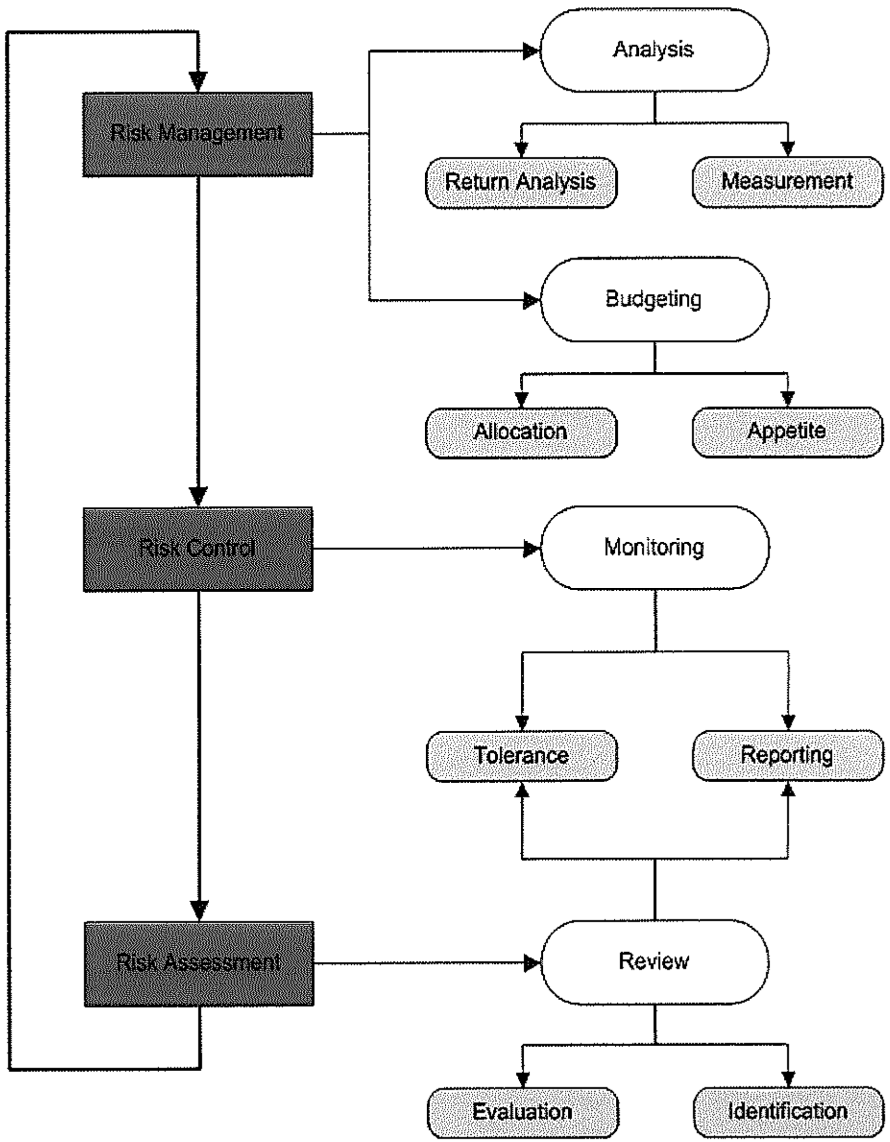
Model Validation

- **Kevin Sheehan**, Vice President
- **Elton A Daal**, Vice President
- **Wenying Jiangli**, Vice President
- **Alice Lee**, Vice President
- **Xiaozhong Liang**, Vice President
- **Fabrice D Rouah**, Vice President
- **Ruichao Ren**, Assistant Vice President

As of September 30, 2009 — SSgA — State Street Corporation

Investment Risk Management

- **Risk Management**
  - Understand both positive and negative aspects of risk
  - Seek to maximise risk-adjusted return
- **Risk Control**
  - Identify specific risk exposures
  - Set risk tolerance levels
  - Monitor risk exposure and concentration
  - Periodic risk reporting
  - Performance attribution
  - Mitigate or correct unwanted exposures
- **Risk Assessment**
  - Identify potential risk and gaps
    - Processes
    - New Products/Strategies
  - Assess, review and evaluate potential risk exposures



Source: SSgA

Risk Assessment Techniques

Quantitative tools can highlight key risks that that might otherwise not be readily apparent, there are also risks they fail to spot.

- **Look at a variety of measures since different risk calculations may provide comparatively different results**

- **Supplement quantitative tools with qualitative methods to further mitigate potential problems**
  - Risk manager and portfolio manager experience
  - Common sense

- **Common risk measures**
  - Comparative Benchmark Comparison
  - Value at Risk (VAR)
  - Scenario Analysis and Stress Testing

- **Common model inputs**
  - Risk Tolerance
  - Horizon
  - Risk Capital
  - Start/End Dates

Risk Management: Exposure and Portfolio Risk Measurement

- **Risk exposure reporting**

  Daily delivery of key risk exposure analytics

  Portfolios are analysed versus their respective benchmarks

  Portfolio Risk is assessed along four main dimensions:

  - Market Risk (Curve and Spread)
  - Currency Risk
  - Idiosyncratic/Name Risk
  - Liquidity Risk (under development)

  Scenario analysis/stress testing (under development)

- **Portfolio and strategy risk**

  Active Risk: Proprietary Risk Budgeting System and POINT

  Portfolio Risk and Active Risk: POINT and YieldBook

- **Scenario analysis/stress testing**
- **Profit/loss management**

  Highlight asymmetry of the return distribution at the portfolio level

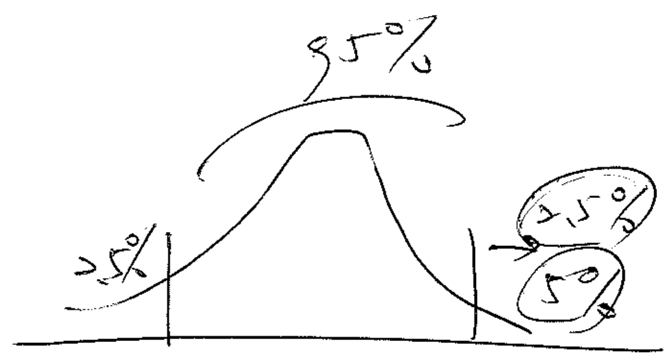
  Loss management, based on VaR or CVaR (usually at 95% confidence)

  Profit management (when to take profit based on analytical measures)

- **Maintain and improve analytics**

  Maintain securities and portfolios in analytics platforms

  Generate risk and attribution reports



Risk Management Systems

- **Fixed Income**
  - Lehman's POINT Platform
  - Citigroup's YieldBook
  - Proprietary LOGOS Platform
  - POEMS Platform
- **Cash**
  - Cash Risk: Portfolio View & Cash View
  - Credit View
- **Equities**
  - Barra
  - Factset
  - Proprietary SIMPL System
- **Currency**
  - FX 2000
  - Currency Online
- **Derivatives**
  - Front Arena

Fixed Income Risk Management: Core Functions

- **Analytics and reporting**
  - Maintain, improve, and operate analytics infrastructure (POINT, YieldBook, LOGOS)
  - Serve the quantitative and analytical needs for all traded products
  - Modeling of Bonds, Derivatives, Trades and Strategies
  - Monitor Exposures, Risk Budget consumption and Returns
  - Design, execution and distribution of reports
  - Performance Attribution
- **Communication**
  - Periodic Exposure Meetings with Portfolio Managers and Senior Management
  - Exception Reporting to Portfolio Managers and Senior Management as needed
  - Provide audit trail of communications
- **Development and construction of proprietary analytics**
  - Risk Budgeting and Analytics Tool
  - Design and build Risk and Portfolio Management Tools for the Investment Area
  - Modeling of Trade Strategies
  - Improve Risk-Return Trade-off of Portfolios

Risk Control

Risk Control: Sources of Risk

- **Currency Rate Exposure**
  - Risk from movements in international interest rates
- **Currency Market Exposure**
  - Risk from volatile international currency values
- **Rating Exposure**
  - Risk from the relative performance of the investment grades
- **Sector Exposure**
  - Risk from deviations in:
    - Sovereign
    - Corporate
    - Collateralised
    - ...
- **Issuer Exposure**
  - Risk from idiosyncratic, issuer-specific performance

Risk control is split into the following categories:

- Beta – ensuring that Beta portfolios are tightly managed and do not show significant active exposures against the benchmark
- Active – monitoring and reporting active positions, ensuring consistent with global market views and clients' risk budget
- Client specific – providing monitoring and reporting tailored to client-specific, or regulatory, requirements

Beta Control

- **Daily Analytics**
  - Provision of accurate daily risk analytics from fully-reconciled sources
  - Retrieve daily analytics and benchmark data from external data providers
- **Weekly Beta Risk Review**
  - Monitor indexed accounts against the benchmark for currency and rate exposures against the benchmark
  - Exposures breaching tolerance are highlighted and the resolutions are communicated to the Senior Investment & Risk Management teams

- **Current Index & Analytic Providers**
  - Citigroup
  - Iboxx
  - Lehman
  - FTSE
  - JP Morgan
  - Barclays
  - Swiss Bond Exchange

Risk Category	Active Exposure Limit
Currency rate exposure	± 0.05 yrs
Curve exposure (KRD)	± 0.15 yrs
Currency Exposure	± 0.15 %

Beta Monthly Portfolio Review

- **Monthly Review with Portfolio Management teams and CIOs**
- **Mandates are also monitored for:**
  - Sector risk
  - Ratings risk
  - Issuer risk
- **On aggregate, ex-ante and ex-poste tracking errors are monitored:**

Mandate Type	Ex Ante Tracking Error Tolerance
Single Currency Gov	5 bps per annum (1.4 bps per month)
Multi-Currency Gov	10 bps per annum (2.9 bps per month)
Corp	30 bps per annum (8.2 bps per month)

Performance Period	Ex poste Tracking Error Tolerance
3-months	+/- 5 bps
12-months	+/- 10 bps

- **All exceptions, and corresponding resolutions, are reported to the CIOs, Senior Investment Managers and the Risk Management Group**

- **Sector, Rating & Issuer Exposure tolerances:**

Source	Measure	Unit	Min	Max
Sector	Active Govt CTD	Yrs	-0.05	0.05
	Active Corp CTD	Yrs	-0.1	0.1
	Active Col/ABS CTD	Yrs	-0.1	0.1
Rating	Active AAA CTD	Yrs	-0.15	0.15
	Active AA CTD	Yrs	-0.12	0.12
	Active A CTD	Yrs	-0.1	0.1
	Active BBB CTD	Yrs	-0.05	0.05
Issuer	Active AAA Issue MW	Bps	-400	200
	Active AA Issue MW	Bps	-350	175
	Active A Issue MW	Bps	-300	150
	Active BBB Issue MW	Bps	-200	100

Risk Control

- **Sources of Risk**
  - Interest rate/Spread Risk
  - Asset class/Sector Risk
  - Issuer/Credit Risk

- **Daily Analytics**
  - Provision of accurate daily risk analytics
  - Daily exposure snaps
  - Daily exception reports

- **Monthly Review with Portfolio Management teams and CIOs**
  - All exceptions, and corresponding resolutions, are reported to the CIOs, Senior Investment Managers and the Risk Management Group

Tolerance Limits

Passive			Contribution to	
Portfolio		Market Value (%)	Duration (Days)	Spread Duration (Yrs)
	Total	**100%**	**60**	**3**
PV Asset Class	ABCP	15%	15	0.05
	ABS	50%	45	2.00
	CD/Euro CD	25%	25	0.05
	Corporate	15%	15	0.60
	CP	25%	25	0.05
	PN	25%	25	0.05
	TD	20%	20	0.05
	XMTN	5%	5	0.20
	Government Bill	100%	90	NA
PV Sector	COLLATERALISED	60%	55	2.40
	ABCP Structured Investment Vehicle	15%	15	0.05
	ABS	50%	45	2.00
	MBS	20%	20	0.80
	BANKS / FINANCE	50%	45	1.00
	BANKS	20%	20	0.40
	FINANCE	30%	25	0.60
	BROKERAGE	10%	10	0.20
	INSURANCE	10%	10	0.20
	INDUSTRIAL	10%	10	0.40
	UTILITY	10%	10	0.40
	GOVERNMENT / AGENCY	100%	90	4.00
Issuer	A-1	80%	70	0.20
	A-2	20%	20	0.05
	AAA	80%	70	3.20
	AA	20%	20	0.80
	A	5%	5	0.20
	BBB	2%	0	0.10
	Bank Name	25%	0	0.00
	Non Bank Name	25%	0	0.00

Source: SSgA

Investment Risk Management for Global Currency

- **Exposure Analytics**

  Daily analytics independently generated across global investment desks. The analytics are used to monitor risk by Investment Risk Management

- **Risk Analytics**

  Internal risk model supported by Investment Risk Management team generates daily risk analytics across portfolios. The analytics are used to monitor risk by Investment Risk Management

- **Monitoring**

  Tolerance constraints monitored daily across all portfolios

  Monthly Portfolio Reviews performed by Investment Risk Management with Senior Global Currency Management

  Quarterly report/update to the Investment Committee by the Global Asset Allocation and Currency CIO

Global Currency – Portfolio Exposure Guidelines and Risk Management Methodologies

The guidelines below are applied in addition to client/portfolio specific investment guidelines/restrictions which may apply and are intended to provide investment thresholds and are not absolute limits.

Passive Currency Mandates Exposure Guidelines Relative to the Benchmark:

1. Global portfolio hedge ratio, hedged relative to total currency exposure
2. Single currency exposures relative to target hedged benchmark

Active Currency Mandates:

1. Single currency exposure limits
2. Risk contribution of each portfolio holding to total portfolio
3. Total risk relative to client specific risk limits or risk limits set forth in governing documents
4. Total nominal exposure to each currency relative to established limits
5. Value at Risk ("VaR"): measures expected maximum loss at a certain confidence level within a given horizon
6. Expected Shortfall: measures the expected loss beyond VaR ("CVaR")

All Currency Mandates:

1. Counterparty exposure levels and limits
2. Performance check for similarity among all like mandates
3. Permitted derivatives use as stated in the investment guidelines and governing portfolio documents
4. Investment leverage is monitored daily and is not employed unless explicitly permitted by client specific guidelines or the governing portfolio documents

Investment Risk Management for Global Asset Allocation

- **Exposure Analytics**
  - Systematic pre and post trade tolerance checks to verify compliance with portfolio guidelines and policy targets/bands

- **Risk Analytics**
  - Ex-post review of select portfolio risk characteristics relative to benchmark
  - Ad Hoc Risk Analysis customised to meet client specifications

- **Monitoring**
  - Monthly review of portfolio performance attribution reports by Portfolio Managers
  - Regular Portfolio Management team review to monitor and evaluate performance of underlying strategies
  - Quarterly reporting to the Investment Committee by GAA CIO

Global Asset Allocation: Passive Rebalance Overlay

- **Objectives**
  - Provide exposures that match benchmark within allowable tolerances
  - Returns that are consistent with the benchmark
  - Risk profile similar to the portfolio benchmark (Implementation stage)

Asset Class	Underlying Strategy	Portfolio Benchmark	Overlay Target	Allowable Ranges
Global Equities	60%	50%	-10 %	48 % - 52 %
Global Fixed Income	15%	25%	10 %	23 % - 25 %
Real Estate	5%	5%	0 %	3 % - 7 %
Commodities	5%	5%	0 %	3 % - 7 %
Alternatives	5%	5%	0 %	3 % - 7 %
Cash and Equivalents	10%	10%	0 %	8 % - 12 %
Total	100%	100%	0 %	

- **Re Balance Policy**
  - Rebalanced to target asset weights, or internal bands, when new data provided or tolerance bands breached

Source: SSgA

Investment Risk Management for Global Equities

- **Exposure Analytics**
  - Daily analytics independently generated across all portfolios and reviewed by Portfolio Managers and Senior Global Equities Management

- **Risk Analytics**
  - Ex-ante portfolio risk metrics generated through the use of internal and external modeling tools and reviewed by Portfolio Managers and Senior Global Equities Management

- **Monitoring**
  - Independent monthly reporting of model portfolios to the Investment Committee by the Investment Risk Management Group
  - Quarterly performance reporting to the Investment Committee by the department head of each Global Equity team

Global Equities – Enhanced Portfolio Exposure Guidelines and Risk Management Methodologies

The guidelines below are applied in addition to client/portfolio specific investment guidelines/restrictions which may apply and are intended to provide investment thresholds and are not absolute limits

Primary Portfolio Exposure Guidelines Relative to the Benchmark:

1) **Stock Level:**

Individual stock level constraints

Minimal cash held in the portfolio

2) **Portfolio Level Constraints:**

Sector exposure

Industry exposure

Region exposure

Currency exposure

Country exposure

No investment leverage will be employed unless explicitly permitted by client-specific guidelines or in the governing documents

Permitted derivatives use as stated in the investment guidelines and governing portfolio documents

3) **Factor Based Risk Methodology :**

Beta Neutral

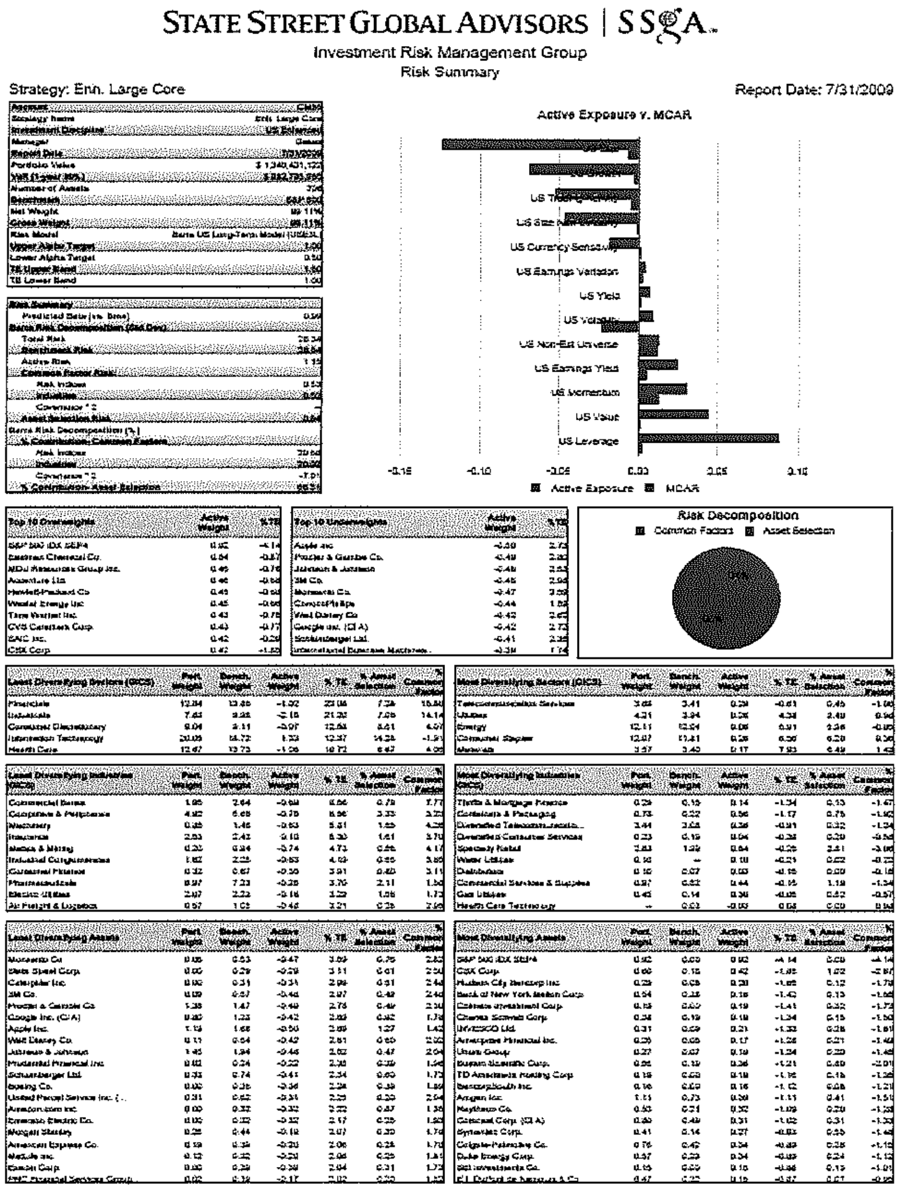
Style constraint

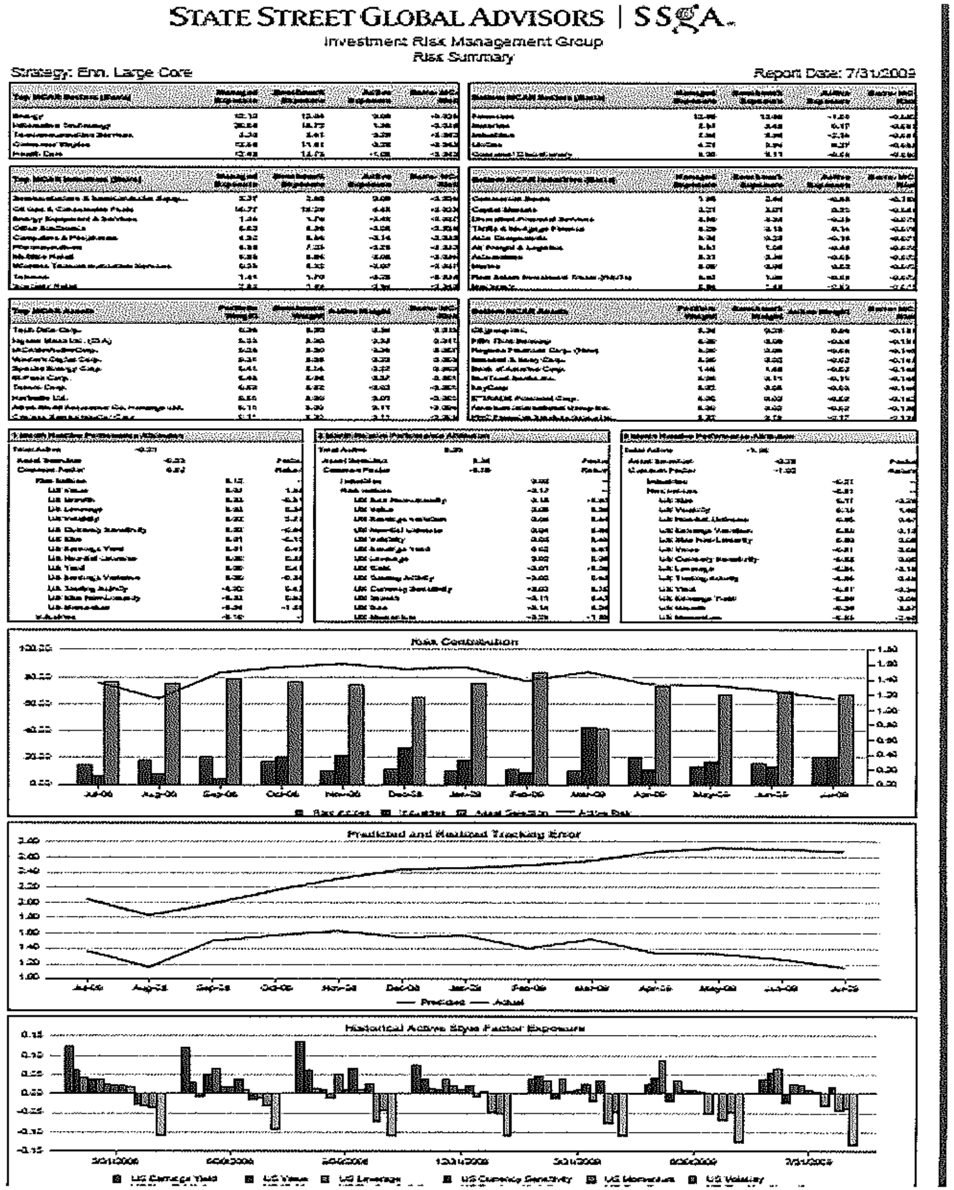
Size constraint

Momentum constraint

Volatility constraint

Global Equities Report Example





Source: SSgA

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Escalation Procedures and Loss Mitigation

- **Notification to relevant parties**
  - Investment managers
  - Finance
  - Legal
  - Compliance
  - Senior management
- **Validation of errors or breaches**
- **Discussions with relevant parties**
  - Determine next steps to resolve current issues and prevent future recurrence
- **Implement resolution**
  - Payment
- **Look at losses to identify trends for potential areas of opportunity**

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Global and US Economic Prospects in 2010

Christopher J Probyn

December 2009

Global

- The global economy probably contracted by 0.8% in 2009
- This is, by far, the worst performance, and the first time that world output has actually fallen since the IMF began collecting the data in 1970
- The contraction reflected two related phenomena:
  - The collapse of US domestic demand, especially consumer spending
  - The collapse of world trade

Global

- While indigenous policy stimulus has cushioned downturns in some countries they are generally too small and too export dependent to act as locomotives of global growth
- The most likely recovery sequence is:
  - US policy stimulus
  - US domestic demand
  - US production
  - US imports – Non-US exports
  - Synchronised global expansion
- We are about half-way through this sequence
- Synchronised expansion likely begins around the middle of next year

US

- The US slipped into recession in early 2008
- The "green shoots" of recovery sprouted in the first half of 2009…
  - Housing construction stabilised
  - Retail sales stabilised
  - Factory orders and shipments stabilised
  - Exports stabilised
  - Unwanted inventories peaked and turned lower
  - Industrial production stabilised
  - The pace of job shedding slowed
- …culminating in a return to positive growth in the third quarter

US

- What shape will the recovery take?
  - W (double dip):
    - Would seem to require a negative exogenous shock
  - L (bounce along the bottom):
    - Too many tailwinds
    - (2002 “L” caused by uncertainty in run-up to Iraq invasion)
  - V (imminent robust rebound):
    - Too many headwinds
    - (But increasingly plausible following the third-quarter GDP print)
  - U (gradual improvement):
    - Tailwinds progressively overcome headwinds
    - (Consensus expectation)

US

- Tailwinds
  - Policy stimulus
  - Inventory rebuild: there is 5.0 percentage points of "stored-up" growth
- Headwinds:
  - Weakness abroad
    - As US leads global recovery, imports pick-up sooner than exports
  - Weakness of domestic private-sector demand:
    - Deteriorating commercial real-estate market
    - No evidence as yet of the pent-up demand for cars and houses, which typically drives a robust recovery…
  - Tight credit standards
  - Weakness in the labour market
    - No sign of imminent labour market turnaround

US

- We project a "U," with GDP advancing just 2.2% next year, but running at a 4.0% pace by the second half as the positives build:
  - Monetary policy remains extremely accommodative
  - Fiscal stimulus increases through the middle of the year
  - The lagged effects of the dollar's decline helps exports
  - Commercial real estate market correction ends
  - Residential construction picks-up as inventories run out
  - Consumers should be more ready to spend based on:
    - Improving confidence & sounder balance sheets
    - Easier credit conditions
- Risks becoming more skewed to the upside:
  - V-shaped recoveries often follow deep recessions

US

- Based on this scenario
    - Unemployment will remain elevated for some time
    - US (core) inflation should decelerate to below the 2003 lows, but stay positive in 2010
    - Deflation could be a threat thereafter
    - The consensus view that tightening begins in the second half of next year seems questionable. Indeed, we believe that the Fed is on hold for a prolonged period:
        - It has taken the first, tentative steps of the exit strategy from quantitative easing, but will advance cautiously
        - It usually begins to tighten when the labor market improves, but may be obliged to delay because of the threat of deflation

Financial Markets

- Financial markets are healing as signs of recovery emerge and risk appetites revive:
  - Equities have rebounded
    - Emerging market equities have outperformed
  - Oil prices have recovered
  - The dollar has sold off
  - Credit spreads have narrowed
  - Sovereign yields are off their lows but have not continued to rise
    - Prospects for further disinflation and a prolonged period of low policy interest rates are mitigating the recovery trade

Financial Markets

- Based on our economic scenario:
  - Barring another shock, equities should continue to improve. The timing seems right and valuations are fair
  - Emerging market outperformance should continue and perhaps even accelerate as signs of global recovery emerge
  - Oil prices should continue to rise. We expect them to get back to $90 within two years, and they could overshoot
  - The dollar should continue to weaken as the flight to quality bid evaporates and investor stretch for yield across the globe
  - Credit spreads should continue to narrow making corporate bonds an attractive asset class
  - If we are right about inflation, namely that it will decelerate to low levels, sovereign bond yields should not continue to rise

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