INTERNATIONAL CENTRE
FOR PENSION MANAGEMENT

ICPM TOTAL PORTFOLIO APPROACH WORKING GROUP

The Total Portfolio Approach

Models and considerations for those embarking on the TPA journey

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The Total Portfolio Approach:
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Executive summary

In the pursuit of enhanced portfolio performance, global pension and sovereign wealth funds are increasingly moving from the well-known Strategic Asset Allocation (SAA) approach to the Total Portfolio Approach (TPA). However, despite the uptake of TPA, there remains a lack of clarity among these funds about what TPA is in practice.

This paper aims to improve the understanding of TPA by leveraging the ICPM global network's experience. By presenting TPA practice through a framework of 'enablers' (essential components) and 'levers' (variable components), we identify several variants of TPA models classified along a spectrum ranging from 'fully integrated' to 'partially integrated' models, with hybrid variations also existing in practice.

- **Fully integrated TPA models** are characterised by integrated 'one team' models, with an emphasis on decision making aligned to the total portfolio by all investment team members (including specialists), collaboration, higher degrees of outsourcing, and incentives that are focused entirely on total portfolio outcomes.
- **Partially integrated TPA models** are characterised by larger specialist team models with large scale internal specialists, a more competitive environment, and a blend of team incentives, with asset class team incentives largely focussed on 'alpha' generation.
- **Hybrid TPA models** combine elements of both (1) the highly collaborative 'one team' element of the fully integrated model, and (2) various forms of delegations and mandates to specialists within the overall structure.

This spectrum is descriptive rather than normative. No single TPA model is presented as universally superior; different models may represent best practice under different organizational and investment contexts.

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To illustrate the three types of TPA models, we present case studies of five funds that vary along the fully integrated to partially integrated spectrum: the Future Fund (Australia), New Zealand Superannuation Fund (New Zealand), Victorian Funds Management Corporation (Australia), OPTrust (Canada), and CPP Investments (Canada).

From the case studies we outline a number of considerations for those funds embarking on a TPA journey. The starting point matters and funds should consider their stakeholder environment, team size and degree of internalization, investment beliefs and regulatory context before deciding which TPA model is most appropriate.

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The views expressed herein shall not be attributed to, or deemed to represent the views, positions or policies of any affiliated organization, pension plan, institution, or ICPM.

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1 — Introduction and Definitions

1.1 Purpose of Paper

To improve understanding of the evolving subject of TPA and assist funds in making informed decisions through:

- sharing insights into TPA implementation
- proposing a spectrum of TPA models from fully integrated to partially integrated, including hybrid approaches
- using case studies from five funds to illustrate the variations in approaches, and
- outlining several considerations for funds embarking on the TPA journey

The paper does not aim to provide a complete overview of TPA, implementation journeys, and estimates of the benefits or costs of TPA relative to SAA.

1.2 About ICPM

The International Centre for Pension Management (ICPM) is a global network of leading pension funds and academic partners dedicated to advancing long-term investment best practices. This paper reflects the work of the ICPM member-led Working Group and represents ICPM's role as a neutral platform: not prescribing one investment approach over another but instead clarifying the characteristics of various TPA models and the important elements of those approaches for funds to consider.

1.3 Context

Over the past twenty years, the Total Portfolio Approach (TPA) has grown from being a practice pursued by a few large institutions into a broadly recognized alternative to the Strategic Asset Allocation (SAA) framework.

Evidence of the increased adoption of TPA includes:

- The Willis Towers Watson Thinking Ahead Institute 2025 Report "What Asset Owners Did Next" - a study of 26 large and sophisticated global asset owners - found that "the number of funds deploying SAA has fallen to half the 2017 level. The trend to TPA is continuing: 35% of Asset Owners have adopted TPA, and 54% are moving in the TPA direction."

- A survey at the ICPM Discussion Forum in Vancouver in October 2025, where approximately one-third of the 38 participating pension and sovereign wealth funds described their investment approach as TPA. Moreover, when asked about the trajectory of their future approach, only one-third of funds responded that they would keep or enhance their SAA approach, while the remaining two-thirds of funds responded that they would either keep or move to a TPA model.

The number of institutional investment articles and papers about TPA has also grown significantly over the past couple of years. A shortlist of recent TPA articles includes "Total Portfolio Approach (TPA)" by the Thinking Ahead Institute (2019), "The Rise of Total Portfolio approach" by CAIA (2024), "Total Portfolio Approach" by Elkamhi and Lee (2025), and "Total Portfolio Approach: A Quant Lens" by AQR (2026).

In 2025, ICPM established a Working Group to better understand the different types of TPA models organizations have implemented. This paper summarizes key findings from the Working Group discussions.

1.4 Definitions – SAA and TPA Contrasted

The widely used SAA approach is universally recognized as an investment management framework with a clearly defined delegation structure. The board approves an asset mix targeting an allocation to individual asset classes. Within each asset class, the investment team aims to maximise performance relative to a pre-determined asset class benchmark.

The SAA model offers a clear and robust framework for governance and delegation. However, it can lead to the implementation of a rigid decision-making process, making it difficult to invest in diverse and potentially value-adding opportunities that don't clearly fit in any particular asset class. SAA has also been criticized for resulting in inefficiency and over-diversification when asset classes are optimized to their individual portfolios rather than their contribution to the overall portfolio's risk and return profile.

TPA emerged in the mid-2000s as an effort to overcome the limitations of the SAA framework. However, unlike SAA there is no straightforward definition of TPA. Some practitioners refer to it as an alternative investment management framework to SAA (Thinking Ahead Institute, 2019) whereas others place emphasis on it being a mindset (Elkamhi and Lee, 2025). The absence of a clear and uniformly applied definition can result in confusion about what TPA is in practice.

Table 1: Characteristics of SAA and TPA as typically described in practice

Element	SAA	TPA
Governance structure	Approval of SAA at a client or board level	CIO delegation; allocation to risk with tolerances approved by client/board
Capital allocation decision	Made to asset classes; diversification focus within each asset class; teams 'compete' for capital	Based on allocating to risk factors; diversification of the portfolio; total portfolio competition for capital
Incentive structures	Reward for exceeding sector benchmarks	Aligned to total portfolio outcomes
Performance measurement	Benchmark relative	Aligned to total portfolio objective
Culture	Asset class focus; autonomy within asset classes; less cross team communication	Emphasis on 'one' portfolio; 'one team'; collective outcomes; greater centralised decision making
Data approach/risk models	Focused on the sectors; e.g. equity factor models	All allocations/exposures real time; Focused on absolute risk, equity, currency etc.
Approach to dynamism	Utilization of SAA ranges set by Board; DAA 'alpha' contribution	Dynamism focuses on best available investments; being 'nimble'

Table 1 above summarizes the key differentiators between SAA and TPA as typically described in practice. TPA focuses on optimizing the total portfolio outcome rather than maximizing individual asset-class performance. Investments are assessed by their marginal contribution to whole-of-portfolio objectives through a competition for capital process. TPA is also characterized by a greater delegation of responsibilities to the management team, collaborative culture around 'total portfolio thinking,' and a 'TPA mindset' that emphasizes operating as one team. Another key differentiator from SAA is the shift in focus from *capital* allocation to *risk* allocation as measured by top-down portfolio level risk factors.

Given the relatively small number of funds that have implemented a TPA model and the short implementation time frame, there is insufficient data to quantify in full the benefits and costs of TPA adoption over the SAA model.

Funds pursuing TPA cite the following advantages: improved opportunity-cost discipline, more efficient risk-budget usage, stronger focus on portfolio resilience and liquidity, deeper understanding of total portfolio risks, more dynamic and timely adjustments to portfolio exposures, and faster capital allocation.

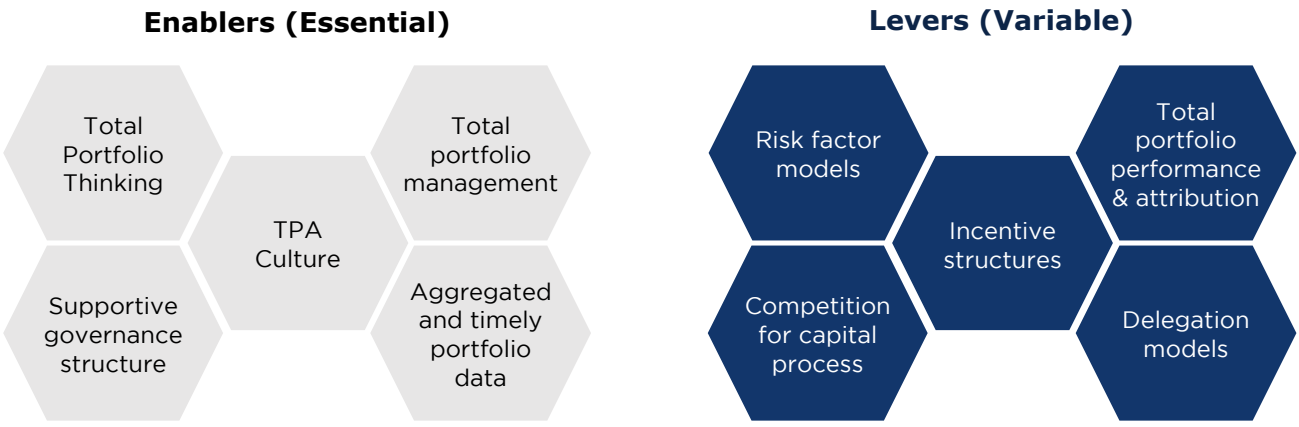
Interest in TPA has materially increased in recent years in response to the fast-changing investment environment. Secular themes and new or hybrid investment opportunities, like AI, do not conform to asset class boundaries and thus raise the potential of being overlooked in the traditional SAA approach. Changing equity-bond correlations and large macro shocks have also raised the need for greater flexibility in asset allocation at the total portfolio level.

2 — TPA Building Blocks

At the start of the ICPM Working Group, TPA was perceived to be a single identifiable framework, as suggested by Table 1 above. However, it rapidly became clear that the TPA models implemented by funds in the ICPM network vary considerably in practice. We found it difficult to place funds along the "SAA-to-TPA spectrum" for two reasons. First, several SAA-adopting organizations exhibit TPA-like characteristics in the way they already consider portfolio risk in their decision-making process. Second, TPA implementations differ significantly across multiple dimensions.

To understand the sources of variation in TPA models, we returned to first principles and adopted a building-block approach to examine each component of TPA. Several components are essential to a TPA framework – we refer to them as **enablers**. Other components vary across TPA organizations – we refer to them as **levers**. In Figure 1, we consider 10 TPA components and classify them as either enablers or levers.

Figure 1: TPA Components as Enablers and Levers



2.1 TPA Enablers

All TPA organizations require the following components.

1. **Total portfolio thinking**

   In a TPA framework, all investment decisions are evaluated in the context of the total portfolio, and decision-making is prioritized through the lens of the contribution to total portfolio risk and return. This is typically expressed as a competition between allocations for a place in the portfolio.

2. **Supportive governance structure**

   TPA governance models require an elevated focus and transparency on total portfolio objectives at the board level, shifting attention from detailed capital allocation and asset-class decisions toward overall portfolio risk and portfolio design.

3. **TPA culture**

   Described by practitioners as an 'essential ingredient', a TPA culture is oriented towards collaboration between investment functions coupled with a mindset and behaviours aligned with total portfolio thinking.

4. **Total portfolio management**

   TPA organizations put greater attention and resources on the management of the total portfolio. Key focus areas include strategy, risk, portfolio design, portfolio resilience, communication and engagement with stakeholders on TPA.

5. **Aggregated and timely portfolio data**

   For total portfolio management to be effective, access to timely and accurate portfolio data, analytics and supporting tools for the whole portfolio is essential.

2.2 TPA Levers

In contrast to the enabling factors presented above, TPA levers represent components that vary across TPA organizations.

1. **Risk factor models**

   Risk factor allocation typically becomes the focus under TPA models, as opposed to capital allocation under SAA. The choice of risk factors at the total portfolio varies across funds. Some funds focus on macro factors while others on market risk factors such as equity, foreign exchange, credit, and term risk. Several funds include multiple factor sets in their models.

2. **Competition for capital process**

   TPA involves the application of a competition-for-capital process, which seeks to establish the relative contribution of each investment to the total portfolio. The specific metrics, approach and degree of dynamism applied vary across funds. Some TPA practitioners use "fundamental" building blocks to estimate the expected return of every asset, where the building blocks include a cash flow yield, valuation change, inflation, and real earnings growth. Some funds evaluate investments along several dimensions such as their contribution to the portfolio's Sharpe ratio, liquidity, drawdown risk, diversification metrics and complexity. These dimensions depend on the funds' mandate, horizon, and institutional constraints.

3. **Total portfolio performance & attribution measurement**

   Portfolio performance metrics differ across TPA organizations depending on their primary objectives. Some funds use a reference portfolio consisting of listed global equities and bonds as a proxy for risk appetite, evaluate a fund's ability to meet its liabilities and in some instances, assess the performance of the total portfolio. Other funds use absolute return targets or scorecards that incorporate multiple metrics such as performance, liquidity, resilience, and sustainability.

4. **Incentive structures**

   Incentive structures differ across TPA organizations. Some link rewards exclusively to total portfolio outcomes, while others compensate specialists based on a mix of total portfolio outcomes and performance within their respective areas of expertise.

5. **Delegation models**

   TPA organizations differ in their delegation models. Some boards delegate investment decision-making to the CIO group, with boards focusing primarily on oversight of overall risk-taking and management performance. Other boards are highly engaged in total portfolio decision-making, demonstrated through frequent meetings and a requirement for strong financial expertise among board members.

   Delegations and the level of engagement on whole-of-portfolio considerations can also vary significantly within management teams. For example, the way TPA mandates are communicated to internal or external investment teams, as well as the degree of mandate alignment to total portfolio goals, varies across organizations.

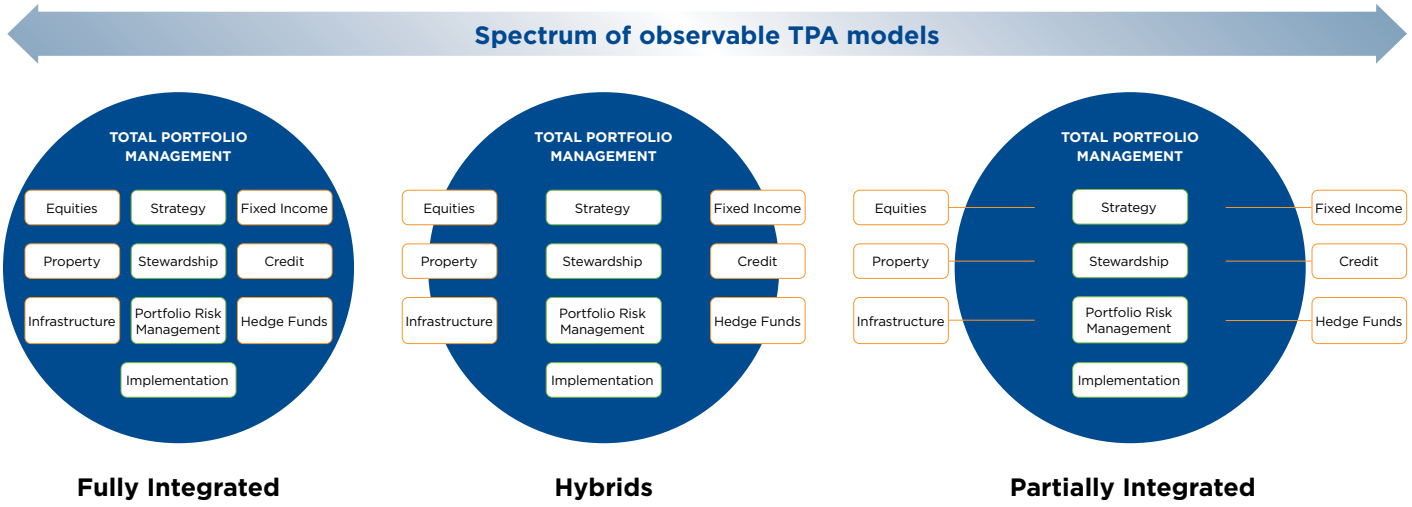
These variable elements demonstrate that a TPA framework contains numerous design levers that can differ substantially across organizations depending on their structure, objectives, and context. Not all TPA organizations rely on a reference portfolio, employ incentive structures entirely tied to total portfolio performance, or delegate all investment decisions to the management team as suggested by Table 1. In the next section, we show that, rather than viewing organizations along a spectrum from SAA to TPA, it is more useful to think of them along a continuum of TPA models ranging from fully integrated to partially integrated.

3 — Spectrum of TPA Models

3.1 From Fully Integrated to Partially Integrated

Combining the individual levers outlined in the previous section, we identify a spectrum of TPA approaches ranging from a fully integrated model to a partially integrated model, with various hybrids in between. The goal of the spectrum is to show model diversity, not establish a ranking. The spectrum of models is depicted in Figure 2.

Figure 2: Spectrum of TPA models



Much of the TPA literature including the description of TPA in Section 1 focuses on the fully integrated TPA model shown on the left of Figure 2. In this model, asset class teams are included in whole-of-portfolio decision-making, as illustrated by the extent of the blue circle. While there is some separation between core investment functions - such as strategy, portfolio construction, and risk management - and asset class teams, the fully integrated model is designed to integrate these functions within a unified whole-of-portfolio approach, mindset, and culture. Functional boundaries are light and flexible, supporting a consistent focus on total portfolio objectives.

The partially integrated model depicted on the right of Figure 2 is also considered a TPA model because it incorporates the essential elements of total portfolio thinking, management, and governance. However, in contrast to the fully integrated model, each asset class team operates with greater autonomy and is less integrated into total portfolio decision-making. This structure allows specialists to focus on their respective asset classes, while a central total portfolio function manages overall portfolio construction and ensures alignment with desired aggregate exposures.

As shown by the hybrid model in the middle of Figure 2, there are many variations along the spectrum between fully integrated and partially integrated approaches, depending on the degree of team integration and the extent to which the investment culture is centered on the total portfolio.

Table 2 briefly summarizes the characteristics of the three TPA models.

Table 2: Comparison of TPA Models

	Fully Integrated	Hybrid	Partially Integrated
Asset class org structure	Asset class heads involved in all portfolio decisions	Strategists to communicate portfolio needs	Each asset class focused on alpha
Total portfolio implementation	One team	Integrated portfolio group	Separate total portfolio group + overlays
Incentives	100% total portfolio outcomes	Emphasis on total portfolio outcomes	Beta (total portfolio) vs. alpha (asset class teams)
Culture	Total portfolio collaboration prioritised across the whole investment team		Total portfolio collaboration focused within the portfolio management function

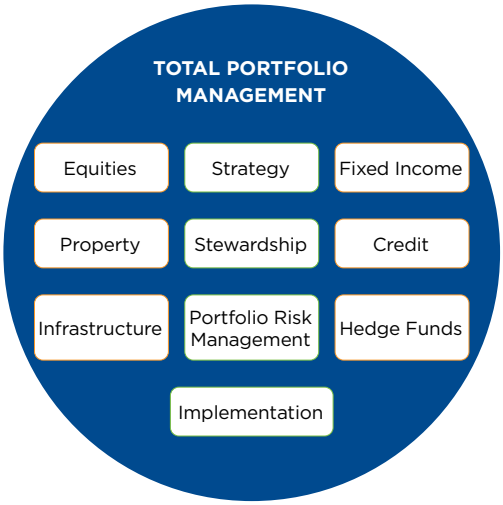
The fully integrated model on the left operates as one collaborative team, with incentives entirely focused on total portfolio outcomes. In contrast, the partially integrated model on the right features greater asset class autonomy and a core group that engages with and allocates capital to each asset class, monitors the risks, and implements whole-of-portfolio trades and overlays to align the total portfolio to the desired risk-return profile. Incentives of asset class teams are less aligned to total portfolio objectives than in the hybrid and fully integrated models. Culture has a different emphasis across models. In the fully integrated model there is a high priority on collaboration across the whole investment team, while in the partially integrated model there is greater emphasis on alpha-beta separation and competition across asset class units.

Across the three TPA models, governance is critical. Clear decision rights, strong alignment, and trust between board and management are foundational.

In the next sections we discuss in detail each TPA model and their respective benefits and challenges. We then provide case studies of five funds to illustrate the models in practice.

3.2 The Fully Integrated TPA Model

Figure 3: The Fully Integrated Model



The **fully integrated** model is identified by:

- Integrated and collaborative focus of the whole investment team to one set of fund goals.
- An investment process and resource model solely focused on total fund objectives.
- An extension of the culture of total portfolio thinking to the "asset class" teams such that those teams are fully integrated with the total portfolio management.
- The pursuit of alignment between all strategies and risk allocations to the total portfolio objective. This may involve complete customisation of traditional indices.
- A governance model that examines every capital and risk allocation through the lens of its contribution to total portfolio outcomes. Asset class teams are part of the decision making across all strategies, requiring specialists who understand other asset classes sufficiently to debate in the competition for capital process.

Benefits — Fully integrated

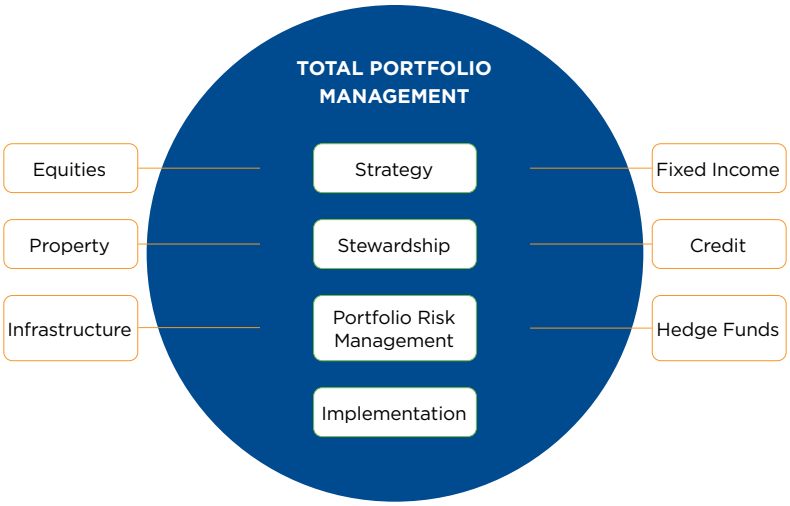
- Greater alignment of the strategies deployed in the portfolio to total portfolio objectives, resulting in less portfolio completion activity, lower costs and greater performance.
- Potentially fewer resources and less complexity in the portfolios than other models due to singular focus on the total portfolio.
- Greater cultural alignment and a one team culture aligned to the total portfolio objectives resulting in stable, engaged investment teams working toward one goal.

Challenges — Fully integrated

- Identifying and retaining the right talent to bring specialist asset class experience and collaborative behaviour to work across the portfolio is difficult.
- Communication and engagement between specialist asset class teams and total portfolio team is critical. This becomes particularly challenging when the team is spread across multiple offices and geographies.
- Asset class teams may find the alignment to the total portfolio a challenge to their autonomy and flexibility.
- Governance around all portfolio decisions can move towards democracy, which may stifle the focus of specialists on the generation of ‘alpha.’

3.3 The Partially Integrated TPA Model

Figure 4: The Partially Integrated Model



The **partially integrated** model is identified by:

- TPA implementation executed principally though the actions undertaken within the blue circle, such as the oversight and analysis of risk exposures, portfolio completion activities through overlays, and the portfolio management team engaging with asset class teams.
- Asset class teams sitting outside the core of total portfolio management (the blue circle) allowing for more specialist focus within asset classes.
- Competition for capital or risk between the individual asset class teams and the use of specialists to compete against the benchmarks established for each team.
- A strong link between the total portfolio management team and other total portfolio functions such as portfolio risk management, strategy, stewardship and implementation, as depicted in Figure 4.

Benefits — Partially integrated

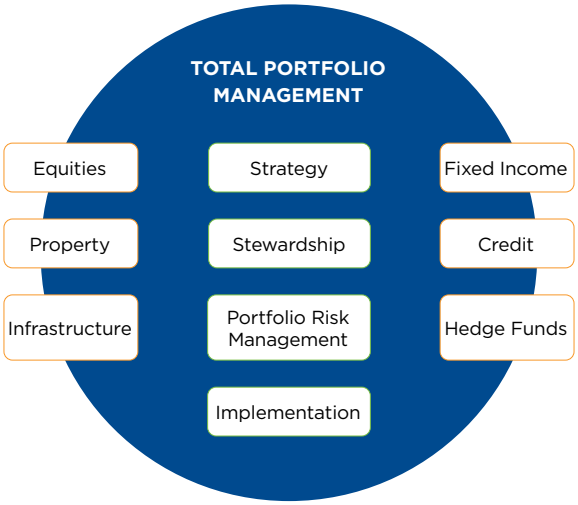
- Total portfolio management obtained without changing the competitive specialist model of asset class deployment.
- Clarity (simplicity) of objective for asset class mandates as they tend to be less customised than those implemented in the fully integrated model.
- Total portfolio culture and thinking is concentrated inside the total portfolio management team, arguably making it easier to manage through a single, smaller team, potentially in one location.
- Relatively simple governance and delegated decision making within the investment team.

Challenges — Partially integrated

- Communication from the total portfolio management team to potentially large internal and geographically disconnected teams can be challenging for investment team and TPA culture.
- Challenges in achieving alignment between asset class team investment activity and the total portfolio needs, particularly if they have no accountability for total portfolio outcomes.
- Total portfolio management may need to override asset class positions that are not aligned to the total portfolio design, which may involve additional costs.
- Overlay activities, where required, can be difficult to implement in the case where private markets teams allocate to risks/opportunities not aligned to the total portfolio needs.

3.4 Hybrid TPA Models

Figure 5: Hybrid Models



Hybrid models exist between the fully integrated and partially integrated models and vary depending on the level of integration of asset class teams into the total portfolio culture, design and decision making. The total portfolio management function still plays an essential role in shaping the portfolio around total portfolio outcomes. However, the integration of the asset class teams varies across asset classes.

Benefits

- Greater alignment of the investment strategies to the total portfolio objectives than in the partially integrated model, resulting in less portfolio completion activity.
- Greater cultural alignment than in the partially integrated model, leading to stable, engaged investment teams working to one goal.
- Allows for some greater degrees of autonomy of specialists within asset class teams under the umbrella of the investment team working to total portfolio goals.

Challenges

- Communication challenges and frictions can arise between specialist asset class teams and total portfolio team due to different perspectives on strategies.
- Asset class teams may find the alignment to the total portfolio a challenge to their autonomy and flexibility.
- Governance around asset class decisions is not as clear as in the partially integrated model.

4 — Case Studies

To illustrate each type of TPA model, we present case studies of five funds and their TPA journeys and models.

4.1 Future Fund, Australia

Fully Integrated

The Future Fund is Australia's sovereign wealth fund. Established in 2006, its investment foundations, governance, processes and mandate were built on the TPA model. It has since carved out an investment identity described as a 'joined up, whole of portfolio approach' and a 'one team' culture.

The Future Fund TPA is an example of the fully integrated model due to the integrated and collaborative focus of the whole investment team, alignment to one set of fund goals, and the extension of total portfolio thinking to the asset class teams. One distinct feature of the Future Fund's approach is the involvement of the heads of asset class teams in decision-making across the entire portfolio, notably outside of their specialist remits. All investors are expected to think outside of their specialist areas and make decisions aligned with total portfolio outcomes.

Another distinct feature of the Future Fund's approach is that it does not use an explicit reference portfolio. Instead, it manages the portfolio to an approved risk budget and overall return objective. While investment decisions are evaluated internally against a notional portfolio of liquid betas, this process allows the actual portfolio to evolve dynamically around the approved risk limits in order to achieve the return objective.

The competition for capital comes to life through debate about capital allocations across every opportunity set at management investment committees, supported by robust portfolio modelling. The board ultimately makes investment decisions.

TPA Attribute	Future Fund Approach
Asset class organization structure	Asset class structure with heads directly involved in portfolio wide decisions. Every asset class team is required to understand the opportunity set for every other asset class and how it competes for capital.
Total portfolio implementation	Fully integrated portfolio management, managing aggregate portfolio risk exposures dynamically on a whole-of-portfolio basis.
Incentive alignment	100% of the investment team are aligned to total portfolio outcomes.

TPA Attribute	Future Fund Approach
Size	Approximately 130 investment team members; total funds managed by the Future Fund Board of Guardians approximately US$235 bn (as of December 31, 2025).
Degree of internalization	Limited by mandate to primarily use externally managed strategies. Internalization has not been a focus.
Risk factor modelling	Whole-of-portfolio focus on return maximisation, illiquidity (flexibility) and drawdown risks. Equity, currency, term, credit and inflation sensitivity also elevated alongside risk-adjusted contribution to total return.
Culture	Recognised as a key enabler. Recruitment is focused heavily on the right people to achieve a collaborative, curious culture centred on a joined up, whole-of-portfolio team.
Total portfolio performance	A reference portfolio is not used, though a 'liquid beta' portfolio representation is used internally to evaluate investment decisions.
Governance	Investment mandate is based on return and risk parameters issued by the government to the board. Broad investment authority delegations to management supported by frequent board and management interaction on decision making.

The strong cultural alignment and centralized decision-making process result in a portfolio that is flexible when necessary but that can also weather short term underperformance in the expectation of future reward.

While TPA is enshrined in the Future Fund model, it is not something the organization takes for granted. The organization works hard to maintain the one team culture, particularly as the investment team has grown in number and across different locations. Additionally, while the collaborative model enhances the quality of decision making, the fund is aware of the need to manage 'over democratisation' creeping into engagement and decision making, particularly when there is a need to be nimble in the market.

The Future Fund investment model is an example of a **fully integrated TPA** model due to the:

- Integrated and collaborative focus of the whole investment team aligned to one set of fund goals with incentives 100% aligned to total portfolio outcomes.
- Extension of the culture of total portfolio thinking to the asset class teams such that those teams are fully integrated with total portfolio management.
- Expectation that professional investors think outside of their specialist areas and make decisions aligned with total portfolio outcomes.

4.2 New Zealand Super Fund, New Zealand

Fully Integrated

The New Zealand Super Fund (NZSF) was established in 2001 to help finance the future cost of providing universal superannuation in New Zealand.

NZSF's TPA journey began in 2010 with the adoption of a reference portfolio. The board took ownership of the reference portfolio and the total active risk budget, while all active management decisions were delegated to management. The approach has evolved since then with the introduction of risk budgeting in 2014. Early in its evolution of TPA, NZSF also implemented a restructuring of the investment team to break down the traditional asset class silos. Now that the TPA culture of collaboration is more firmly embedded, the fund has returned to an asset class-based organization structure to streamline decision-making within asset classes. NZSF has a team of investment strategists who provide a link between top-down portfolio thinking and investing teams.

TPA Attribute	NZSF Approach
Asset class organization structure	The investment team structure is a combination of broad asset class teams and narrow specialist teams, the latter implementing internal strategies.
Total portfolio implementation	Total portfolio discussions involving the heads of each team are conducted at least every quarter. These discussions are supported by a suite of dashboards that enable direct comparisons of the attractiveness of all investments.
Incentive alignment	For all employees, the investment performance component of variable compensation is tied to total portfolio outcomes, not individual team outcomes.
Size	70 investment team members, fund size approximately US$52 bn (as of 31 December 2025)
Degree of internalization	On a funded basis, approximately 35% of investments are internalised (on an active risk basis it is about 50%). The fund's internal strategies include DAA, credit, NZ equities and direct investing in local private equity and real assets.
Risk factor modelling	The fund uses risk factors to calculate risk usage and understand the macroeconomic exposures in its portfolio.

TPA Attribute	NZSF Approach
Culture	The fund's investment approach requires a high degree of collaboration between teams to ensure a total portfolio perspective. To ensure effective collaboration, NZSF invests heavily in its culture, with a focus on constructive criticism and psychological safety.
Total portfolio performance	The fund uses a reference portfolio for setting the risk profile, as a source of funding and benchmarking performance.
Governance	Significant and well-defined delegations from the board to the CEO and co-CIOs.

The largest benefit of pursuing TPA at NZSF is that it has shifted focus away from assessing the merit of investments on a stand-alone basis to considering how they benefit the total portfolio. Additionally, it has provided a flexible framework that enables the fund to be opportunistic in how the portfolio is invested.

NZSF doesn't consider it has reached the optimal end point in its implementation and believes it has further work to do in perfecting its version of TPA. The fund's mandate requires it to maximise return without undue risk and the team believes more can always be done in striving to meet that mandate.

The NZSF investment model is an example of a **fully integrated TPA** model due to the:

- Small size and frameworks that allow it to bring key decision makers from across the fund into making total portfolio decisions.
- Deeply integrated whole-of-fund approach and culture across the investment team.
- Incentives for all employees via the investment performance component of variable compensation being tied to total portfolio outcomes, not individual team outcomes.
- Board focus on governance around the risk allocation and investment process.

4.3 Victorian Funds Management Corporation, Australia

Hybrid

Victorian Funds Management Corporation (VFMC) was established in 1994 as the public authority responsible for investing for the benefit of the people in the state of Victoria, Australia. Its clients include superannuation funds, insurers and other Victorian public authorities.

VFMC's TPA journey began nine years ago. At that time, the investment function operated largely through siloed, asset-class-focused teams, with limited integration and little emphasis on whole-of-portfolio outcomes. Through strategic leadership, a refreshed investment philosophy, and the redesign of key frameworks, reinforced by consistent role modelling, the culture fundamentally shifted. Phase 1 of the evolution unified portfolio strategy, implementation, and risk into a newly formed Portfolio Management Group (PMG). Phase 2 connected the PMG more closely with the asset class teams.

VFMC has an embedded whole-of-portfolio mindset, supported by governance and investment frameworks that enable insights from across the investment teams to be integrated into portfolio-level positioning, although most investments are ultimately made via asset class teams. Since 2020, the team has gained the capability to execute whole-of-portfolio trades outside these asset class structures. For example, credit default swaps have been used at times to control tail risk. More recently, a position in gold has been held as a risk hedge and a meaningful contributor to alpha.

TPA Attribute	VFMC Approach
Asset class organization structure	Partially integrated. The PMG communicates the needs to asset classes. Asset classes can propose whole-of-portfolio trades (defined as active positions outside of asset classes).
Total portfolio implementation	Partially integrated – blend of TPA and management of asset class allocations. Fully integrated Portfolio Execution team coordinates total portfolio liquidity and asset class exposures including unlisted assets.
Incentive alignment	Varies by role. Total portfolio outcomes are the largest component for the PMG team and a lower but still significant component for the asset class teams. Individual key performance indicators include a contribution to the organization and culture has a fixed share for all team members.
Size	< 70 investment team members, fund size approximately US$70bn (as of December 31, 2025).
Degree of internalization	Targeted at approximately 35%.

TPA Attribute	VFMC Approach
Risk factor modelling	Partially integrated – whole-of-portfolio risk modelling integrated into processes; however, risk factors are not the sole drivers of allocation decisions.
Culture	Collaborative culture across PMG and asset class teams. Single location, single floor open plan office space assists in establishing a connected team culture.
Total portfolio performance	Clients specify target real returns, likelihood of meeting those objectives and their tolerance for risk. An SAA is used to express these parameters back to clients and to measure relative returns generated by the investment team.
Governance	Significant and well-defined delegations from the board to the fund's executives and sub-delegations to the CIO and investment team.

A whole-of-portfolio focus at VFMC enables strong connection and collaboration across the investment function, particularly between the PMG and asset class teams. Ideas and insights are actively shared and integrated to enhance portfolio outcomes. This approach also drives stronger alignment to overall client portfolio objectives, reinforcing a culture of shared accountability and collective success across the investment team.

The active asset allocation programs allow VFMC to implement portfolio level alpha-seeking opportunities alongside defensive positions. This approach enhances portfolio resilience and optimises client outcomes.

The VFMC investment model is an example of a **hybrid TPA** model due to the:

- Combination of clearly defined allocations with active asset allocation positions and whole-of-portfolio positions beyond traditional asset classes.
- Asset class teams being partially integrated to the whole-of-portfolio focus across the investment function.
- Asset class teams having separate incentive structures, while retaining some element of total portfolio aligned incentives.

4.4 OPTrust, Canada

Hybrid

The Ontario Public Service Employees' Union Pension Plan Trust Fund (OPTrust) was established in 1994 to manage public-sector pension plan assets in the province of Ontario, Canada.

OPTrust launched its Member-Driven Investment Strategy - its application of TPA - in 2016 by focusing on creating a liability-aware investment culture and by elevating the 'Funded Status' metric. As a mature pension plan, its objective is to increase the likelihood of remaining fully funded over the long term by maximizing returns at an acceptable level of risk.

OPTrust's current portfolio design comprises two portfolios: liquid assets and illiquid assets. To determine the allocation, OPTrust begins by determining the maximum allocation to illiquid assets, which it believes offers the best long-term value creation opportunities by considering the risk, return, and liquidity trade-offs for the total portfolio. Capital is then deployed in liquid assets through the construction of a completion portfolio. The size and risk exposure of the liquid completion portfolio depend on that of the illiquid portfolio and the overall market environment. The liquid allocations serve multiple purposes: liability and FX hedging, funding and liquidity management, and maximizing returns from the residual risk budget by using both internal and external capabilities.

The desired longer-term liquid/illiquid mix and the desired total portfolio factor attributes are determined by the CIO and the senior investment leadership team. Collective decision making is supported by a whole-of-fund culture.

TPA Attribute	OPTrust Approach
Asset class organization structure	The fund has a hybrid approach: both liquid and illiquid heads have their own delegated portfolios to generate value-add for the plan and they also collectively work with the CIO to determine total fund level risk taking, factor exposures, and short- and long-term investment strategy, within the risk appetite and limits approved by the board.
Total portfolio implementation	One Team – OPTrust invests as one integrated team across liquid and illiquid assets, with the Office of the CIO working together to shape, implement and oversee the total portfolio.
Incentive alignment	The fund places higher emphasis on total portfolio outcomes.
Size	< 70 investment team members, fund size approximately US$20bn
Degree of internalization	Approximately 73%

TPA Attribute	OPTrust Approach
Risk factor modelling	Implemented for monitoring purpose, primarily focused on growth (equity) and inflation (interest rates) exposures.
Culture	Collaboration prioritized
Total portfolio performance	The fund uses a reference portfolio along with funded status as multi-dimensional success measures.
Governance	The management team has significant flexibility in investment decision-making through delegated authority within the board-approved risk appetite, success measures, and risk budgets, while the board provides strong oversight of total fund activities to ensure alignment with these parameters.

OPTrust has derived three main benefits from the TPA approach:

1. Improved opportunity-cost awareness: the TPA approach has reinforced that risk, a scarce resource, must be employed purposefully and efficiently. It has forced a clearer assessment of whether the portfolio allocations are adequately compensated for liquidity, complexity, and risk. While noting that the discussions between top down and bottom-up teams can be uncomfortable, the fund believes these discussions help align what the portfolio needs are with the opportunities available bottom-up.
2. Unified investment and liability risk management: the risk budgeting framework provides a common language for evaluating investment opportunities across investments – liquid and illiquid assets. Two key questions are considered: 1) how does the opportunity contribute to the total portfolio outcome, and 2) what does it cost in terms of the risk budget. This approach supports integrated decision-making and helps align capital allocation with the fund's objectives, risk appetite, and funding goals.
3. TPA has built cross-asset judgement: evaluating opportunities against the full portfolio and each other has developed broader investment judgement. This has broadened the lens of the deal teams as they put forward the case for their ideas, not only against other ideas within their portfolio but across all opportunities of the fund.

The OPTrust investment model is an example of a **hybrid TPA** model due to the:

- Use of the liquid portfolio to 'complete' the illiquid portfolio and align the total combined portfolio to the overall objectives.
- TPA approach through top-down driven risk allocations, with a hybrid asset class team structure to support implementation.
- Structural delegation to liquid and illiquid heads who have their own dedicated portfolios to generate value-add for the plan.
- Incentives are primarily anchored to total portfolio outcomes, with weightings that reflect individual team mandates.

4.5 CPP Investments, Canada

Partially Integrated

CPP Investments was established in 1997 to invest pension contributions on behalf of Canadians (excluding the province of Quebec which operates its own fund). Over time, the fund's investment approach has steadily evolved into a strong, macro factor-driven Total Portfolio Approach implemented through the fund's Total Portfolio Investment Framework (TPIF). TPIF moved the fund away from pure asset-class silos toward a single, macro factor-driven total portfolio architecture including centralized liquidity, centralized FX management, an internal capital-markets "balancing" capability and a relative-value process that assesses public and private opportunities on an equal footing. This approach is wholly directed towards delivering the best risk-adjusted returns at the targeted level of risk.

TPA Attribute	CPP Investments Approach
Asset class organization structure	CPP Investments has moved away from pure asset-class alpha silos. Senior asset-class leads operate jointly within the TPIF to deliver overall portfolio objectives but retain autonomy to make alpha-generating decisions within their asset class.
Total portfolio implementation	Implementation uses central teams (capital markets/balancing portfolio, overlays and central liquidity) rather than separate, competing asset-class implementations.
Incentive alignment	Incentives and the investment architecture are oriented to total-fund goals but contain asset class specific elements. Additional levers exist in the incentive framework to incentivise "One Fund" behaviours.
Size	More than 400 investment staff. At US$565bn, CPP Investments is a very large global asset owner with substantial investment capabilities across public and private markets.
Degree of internalization	Significant internalization — the fund builds and relies on strong internal direct investing, capital-markets, portfolio implementation and support capabilities in addition to engaging with external partners.
Risk factor modelling	Deep / integral — macroeconomic and systematic risk factors are the organizing principle for portfolio construction and rebalancing.
Culture	The culture stresses collaboration across teams and a focus on fund-level outcomes rather than single asset-class teams hunting alpha in complete isolation.

TPA Attribute	CPP Investments Approach
Total portfolio performance	The fund uses reference portfolios, known as the market risk targets, to indicate the targeted level of risk for each portion of the plan. Importantly, market risk targets do not reflect compositional guidance. Benchmark portfolios are used to measure relative performance.
Governance	The board retains high-level mandate and limits (e.g. market risk targets) but deliberately delegates implementation authorities to CEO/CIO and management, who in turn employ formal oversight committees and escalation thresholds.

CPP Investments' total portfolio approach has delivered several clear benefits, including:

- Improved dynamism and disciplined flexibility: the fund can reallocate exposures (including across public/private) without triggering destructive forced trades because liquidity, leverage and overlays are centrally governed.
- Better decision-framing and quality: factor-based construction and a relative-value discipline make capital allocation comparisons and alpha/beta decisions explicit.
- Access to a wider opportunity set and potential performance uplift: the framework can accommodate new ideas and strategies that don't fit traditional asset class silos.

The CPP Investments model is an example of a **partially integrated TPA** model due to the:

- Partially integrated approach to deployment of capital to large teams balanced by the portfolio management function utilising factor completion, leverage and centralised liquidity to shape the portfolio to overall objectives
- Significant delegations and capital allocations to separate asset class teams
- Asset class team autonomy to make alpha-generating decisions within their asset class
- Large scale of internalization and resulting size of the investment teams means decentralisation is necessarily part of the organizational design.

5 — Considerations for those embarking on the TPA journey

The five case studies presented above illustrate the diversity of TPA models and shed light on what a TPA process looks like in practice. Drawing insight from the case studies, we outline several considerations for funds embarking on the TPA journey regarding the adoption of TPA model and levers.

1. **Starting point**

   TPA adoption is path-dependent and the starting point matters. A newly established fund may be able to set up a new investment approach with greater ease than a large existing fund with well-established asset classes and specialist teams. The latter fund may find it easier to implement a partially integrated model because it is closest to its existing set-up. Similarly, a fund that has already built technology to support whole-of-fund analysis through a risk factor lens will have fewer hurdles adopting the model of its choice than a fund just embarking on a technology uplift.

2. **Stakeholder structure**

   Organizations differ in their stakeholder structure: some organizations have one central sponsor, while others manage assets on behalf of multiple plans. Funds operating in a multi-stakeholder context may find a fully integrated model harder (and longer) to implement because it involves persuading multiple stakeholders of the need to change and coordinating these stakeholders through the implementation process.

3. **Investment beliefs**

   Investment beliefs shape the organizational structure and choice of TPA model. For example, an organization believing it has an edge to generate alpha in a particular asset class may choose a hybrid model where they allow that asset class to operate more autonomously.

4. **Fund team size and degree of internalization**

   Fully integrated TPA models tend to be utilised in funds that outsource investment management to a high degree and are therefore smaller in absolute headcount, enabling collaboration as an essential part of culture. In contrast, partially integrated TPA models are typically the domain of very large funds with a high degree of specialty expertise within internal asset class teams.

5. **Regulatory context**

   Regulatory requirements may limit model choice. Funds that are less regulated have greater flexibility to implement a fully integrated model. We observe in practice that fully integrated models tend to be the adopted by sovereign funds with less strict regulatory requirements.

6 — Conclusion

Much of the global discussion about TPA lacks a deeper understanding and appreciation for the variety of TPA models that exist in practice. Unlike SAA, TPA does not represent a single investment management framework. There are many ways of approaching TPA and the model chosen is highly dependent on organizational structure, purpose and context.

This paper examines in greater depth the range of existing models, their defining characteristics, the enabling drivers of TPA and the associated implementation levers. The spectrum from fully integrated to partially integrated models is intended to be decision-useful for funds considering a move to TPA, as well as those already on the journey, by clarifying the available design options and supporting considered and informed choices.