

CAN ASSET DIVERSIFICATION & ACCESS TO PRIVATE MARKETS IMPROVE RETIREMENT INCOME OUTCOMES?

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Executive Summary

INTRODUCTION

In the United States, workers have been taking on an increasing amount of responsibility for their financial retirement readiness and well-being. For private sector workers, the availability of traditional defined benefit (DB) pension plans has continued to decline, with most employers today offering defined contribution (DC) plans as their primary, and often only, retirement programs. This shift from DB to DC as the primary form of retirement program is a trend seen not just in the U.S. but also worldwide, with DC assets now exceeding DB assets globally.¹

Because of this change in the design of retirement plans, millions of workers now find themselves responsible for making complex savings and investment decisions. These decisions play a large role in determining how much a worker saves, how those savings will grow, and ultimately what that worker will be able to spend in retirement. In addition to the underlying complexity of investment decision-making, a variety of behavioral factors such as status-quo bias, heuristics/shortcuts, herding, choice overload, confirmation bias, and overconfidence bias also can lead to less optimal outcomes.²

To help workers navigate these challenges, a variety of mechanisms has been introduced in DC plans to facilitate better outcomes for participants. Some of these include plan features such as auto-enrollment and auto-escalation as defaults for participants to help increase participation and contributions. Despite the evolution of these mechanisms, however, DC plans are still not harnessing their full potential because the investment of the contributions is allocated almost exclusively to public stocks, investment-grade bonds, and cash. Because plan participants fully absorb the gains and losses of their accounts, market events can drastically affect their ability to retire.

The need for additional improvements in the design of DC plan investments to support growth, smooth risks, and enhance retirement income outcomes for workers was the basis for the original research conducted by the CRI in 2018 and updated in this report.

PREVIOUS RESEARCH FINDINGS

In 2018, the CRI examined the opportunities, challenges, and benefits of expanding the asset classes used in target date funds (TDFs) in DC plans to incorporate the types of investments more commonly used in long-term investment pools such as DB plans, and doing so without introducing further complexity for the plan participants.³ More than 90% of plans now offer TDFs as a qualified default investment alternative (QDIA) that adjusts the mix of stocks, bonds, and cash along a glide path to the retirement target date.⁴

In the analysis, as much as 30% of a TDF's glide path included alternative assets with allocations to illiquid private assets up to and into retirement. The report modeled different scenarios, injecting each asset class separately and presenting one scenario that included all three asset classes. Every scenario had positive benefits from including alternatives. However, the analysis showed that a more fully "diversified" TDF — one that includes a combination of alternative asset classes — produced a superior distribution of long-term participant outcomes relative to a typical TDF. The amount of annual retirement income that can be generated by converting a participant's DC balance into a stream of income at retirement has the potential to improve by 17% in the expected case (50th percentile) and by 11% in a worst-case or downside outcome scenario (5th percentile).⁵

More than 90% of plans now offer TDFs as a qualified default investment alternative (QDIA) that adjusts the mix of stocks, bonds, and cash along a glide path to the retirement target date.

1. WTW, Thinking Ahead Institute, "Global Pension Asset Study – 2022."

2. A considerable body of research explores how behavior shapes decision-making. For example, see Shlomo Benartzi and Richard H. Thaler, "Heuristics and Biases in Retirement Savings Behavior," *Journal of Economic Perspectives*, November 3, 2007, and Brigitte C. Madrian and Dennis F. Shea, "The Power of Suggestion: Inertia In 401(k) Participation and Savings Behavior," *Quarterly Journal of Economics*, 116(4): 1149–1187.

3. Angela M. Antonelli, "The Evolution of Target Date Funds: Using Alternatives to Improve Retirement Plan Outcomes" (Washington, DC: Georgetown University Center for Retirement Initiatives in conjunction with WTW, 2018).

4. Vanguard, "How America Saves 2022," and WTW, "2020 Defined Contribution Plan Sponsor Survey."

5. Antonelli, "The Evolution of Target Date Funds: Using Alternatives to Improve Retirement Plan Outcomes."

NEW RESEARCH FINDINGS

In this report, the CRI made the following modifications to its 2018 analysis:

- **Modeled the benefits of smaller allocations to alternative assets.** This adjustment was made because many DC plan sponsors seeking to incorporate alternative assets are likely to do so incrementally over time and may not wish to allocate as much of the portfolio to alternatives as is common today in many DB plans. A lower allocation to alternatives in this analysis is intended to reflect a more incremental movement toward the inclusion of alternatives. Today's "typical" TDF (reflecting the TDF industry average of the largest TDF providers) includes very modest allocations to real assets and non-investment grade credit. The analysis tests whether modestly expanding allocations to alternative assets beyond the "typical" TDF, including the introduction of private equity, still has the potential to provide meaningfully improved outcomes net of fees.
- **Changed the alternatives basket of investments modeled by adding private credit and removing hedge funds.** Allocating to private credit can better balance the illiquidity premium — across private equity and private credit. Thus, there is a corresponding reduction to the private equity allocation. Private credit can also generally be accessed at lower fees than hedge funds — an important consideration for DC plans.
- **Broadened the modeled real assets allocation beyond core real estate.** This change creates a more diversified allocation to real assets, consistent with how institutional investors are approaching real asset allocations in DB plans, which include both public and private real estate and infrastructure assets.
- **Tightly managed portfolio risk relative to TDF industry average.** The portfolio construction controls for portfolio risk level adjustments by allocating to alternative assets in a way that does not change the ex-ante (a forward looking estimate) risk level relative to the TDF industry average to provide a better like-for-like comparison.

The analysis evaluates the performance of three types of TDFs, adjusting the asset mix in four dated funds: 40 years to retirement, 20 years to retirement, at the time of retirement, and 10 years into retirement. The percent allocations to alternatives are lower for the 40 years and at retirement (15%), and 10 years into retirement (10%), than for the 20 years to retirement (maximum of 20%).

In the longest-to-retirement dated funds, there is a lower allocation to alternatives to maintain the high expected return of those long-term investments like the TDF industry average. In the shortest-to-retirement dated funds, alternatives are lower to keep the risk level low while maintaining sufficient liquidity to cover potential outflows. In mid-to-retirement dated funds, allocations to alternative assets are higher to maintain higher levels of returns while managing the risk consistent with the TDF industry average.

Ultimately, it is in these more moderate risk portfolios in the mid-to-retirement dated funds where using alternatives provides the greatest advantage over the TDF industry average, because it is possible to maintain expected returns while reducing portfolio risk using alternatives when the more common approach in TDFs is to add significant allocations to lower yield core fixed income during this period.

While maintaining similar market risk across the modeled glide paths, the resulting analysis shows:

- **The Typical TDF produces modest improvement when compared with stock/bond only portfolios net of fees** — Today's typical TDF providers use enhanced portfolio construction techniques and other areas of the bond market, such as high-yield and emerging-market debt, to improve long-term retirement income expectations and worst-case results by approximately 1%.
- **The Expanded TDF shows meaningfully improved results over the Typical TDF net of fees** — An Expanded TDF that includes allocations to private equity, real assets, and private credit further improves upon the Typical TDF long-term retirement income expectations and worst-case results by 8% and 6%, respectively.

Introduction

In the United States, workers have been taking on an increasing amount of responsibility for their own financial retirement readiness and well-being. In the private sector, the prevalence of more-traditional defined benefit (DB) pension plans has continued to diminish with most employers today offering defined contribution (DC) plans as their primary, and often only, retirement programs. A recent WTW survey of U.S. DC plan sponsors showed that approximately 80% of DC plan sponsors also manage a DB plan; however, fewer than 25% of those DB plans were open to new hires.⁶

Of the plans with automatic enrollment, 99% defaulted their participants into a balanced investment strategy in 2021, with 98% choosing a TDF as the default. The prevalence of TDFs and their portfolio, asset allocation, and structure makes them particularly important to examine in the context of U.S. retirement outcomes.

Within DC plans today, target date funds (TDFs) represent one of the most common investments. Since 2007 and the implementation of the Pension Protection Act, the U.S. Department of Labor (DOL) has allowed TDFs to be used as the default investment option for participants who do not select their own investment options when enrolling in a retirement plan. At year-end 2021, 64% of Vanguard plan participants were solely invested in a default investment program compared with 7% at the end of 2004. Of the plans with automatic enrollment, 99% defaulted their participants into a balanced investment strategy in 2021, with 98% choosing a TDF as the default.⁷ The prevalence of TDFs and their portfolio, asset allocation, and structure makes them particularly important to examine in the context of U.S. retirement outcomes.

To improve outcomes for U.S. retirees enrolled in these plans, DC plan fiduciaries are researching strategies to potentially enhance and improve investment returns within TDFs. One area of research and focus for DC plan fiduciaries has been the use of alternative asset classes to further diversify the investment set to reduce risks and improve long-term outcomes. Alternative assets

generally refer to those other than stocks, bonds, and cash. The need for improvements in DC plan investment returns and their direct contributions to provide secure and sustainable retirement income for workers was the basis for the original research conducted in 2018 and a complementary CRI report in February 2020 that specifically addressed implementation challenges and concerns, and how plan fiduciaries can address them.⁸

After the release of the 2018 and 2020 CRI reports, the DOL issued a letter in June 2020 stating, "...a plan fiduciary would not, in the view of the Department, violate the fiduciary's duties under [S]ection 403 and 404 of ERISA solely because the fiduciary offers a professionally managed asset allocation fund with a private equity component as a designated investment alternative for an ERISA[-]covered individual account plan..."⁹ In December 2021, the DOL issued follow-up supplemental guidance. In this guidance, the DOL specifically made mention that "...as with any plan investment, plan fiduciaries must determine that an investment that includes PE [private equity] is, among other things, prudent and made solely in the interest of the plan's participants and beneficiaries."¹⁰ In this context, the DOL made clear that under ERISA, all plan investments must adhere to the same standards.

The results...demonstrate that even a modest increase in the use of alternative assets in TDFs can help drive greater returns and deliver improved retirement outcomes for plan participants.

Because of the continued interest among plan fiduciaries, DOL's recent guidance, and the more recent market volatility only adding to the need for plan sponsors to improve investment returns, the CRI wanted to undertake additional analysis and research to continue to explore the role that alternative assets can play in TDFs in DC plans. The results of this new analysis were consistent with prior analysis and demonstrate that even a modest increase in the use of alternative assets in TDFs can help drive greater returns and deliver improved retirement outcomes for plan participants.

6. WTW, "U.S. DC Pulse Survey 2022."

7. Vanguard, "How America Saves 2022."

8. Michael P. Kreps and Angela M. Antonelli, "Use of Alternative Assets in Target Date Funds: Challenges, Strategies, and Next Steps" (Washington, DC: Georgetown University Center for Retirement Initiatives, 2020).

9. U.S. Department of Labor, Information Letter 06-03-2020.

10. U.S. Department of Labor, Supplemental Statement on Private Equity in Defined Contribution Plan Designated Investment Alternatives, December 21, 2021.

Expanding the Opportunity Set: Including Alternative Assets in TDFs

Alternative assets have a long history of being included in the portfolios of DB plans. A WTW study of the Fortune 1000 Pension Plans in the U.S. found that in the aggregate, alternative assets were 14.1% (almost one-third of growth assets) among larger corporate plans.¹¹ Public pensions allocate even more to alternative investments (approximately 27%), according to the Public Plans Database.¹² While the use of alternative asset classes is well-established in DB plans, DC plans lag in their usage for a variety of reasons, including the differences in the management of assets between fiduciaries and plan participants.

In its February 2020 report, the CRI explained that “TDFs are attractive to consider because they have several attributes that make them a natural entry point for alternatives in DC plans. First, participants invested in TDFs tend to reallocate their asset mixes at a lower rate than participants invested in other DC plan investment options. This means the capital in TDFs tends to be more stable over time. Second, because TDFs are allocated to multiple asset classes, most of a TDF’s assets will still be able to satisfy daily liquidity and fund alternative assets. Third, similar to a DB plan’s investment portfolio, a TDF is designed to be diversified among multiple asset classes that are selected by a plan fiduciary. Therefore, participants would not be allowed to select specific asset class weightings or specific alternative funds. For these reasons, TDFs tend to be a better home for alternative assets, which are generally less liquid, because they require more time to convert to cash than other daily-valued investments common in DC plans.”¹³

The objective of the analysis is to examine the use of alternative assets — assets other than traditional stocks, bonds, and cash — in TDFs as one way to improve long-term retirement income outcomes for DC retirement plan participants. The glide paths and analysis of this paper focused on three primary alternative asset classes: real assets, private equity, and private credit.

Examples of International Experience with Alternative Assets in DC Plans

UNITED KINGDOM

In the United Kingdom (UK), the National Employment Savings Trust (NEST) was set up as part of the government’s workplace pension reforms. NEST is a trust-based defined contribution pension scheme, run by a trustee (Nest Corporation) on a not-for-profit basis. NEST recently started adding private equity into its private markets strategy, which also includes real assets and private credit. Private equity will represent approximately 5% of its default strategy portfolio once fully invested.

Source:
NEST, “Private equity investment now available for millions of UK workers,” May 11, 2022

AUSTRALIA

In Australia, many superannuation funds allocate to illiquid investments, including Australia’s largest, AustralianSuper, which allocates over 20% to private equity and unlisted real assets in its pre-mixed portfolios.* Not only are superannuation funds allocating to illiquid investments, an analysis of the performance data provided to APRA** (the regulator) revealed that funds with allocations of 15% or more to illiquid investments have produced stronger risk-adjusted returns for the seven-year period ending March 31, 2022, than those that do not.

Sources:
*AustralianSuper, “Your PreMixed investment options,” AustralianSuper, September 2022
**Australian Prudential Regulation Authority (APRA), “Quarterly superannuation statistics”

11. WTW, “2020 asset allocations in Fortune 1000 pension plans.”

12. Public Plans Database, “Asset Allocation, 2021.”

13. Kreps and Antonelli, “Use of Alternative Assets in Target Date Funds: Challenges, Strategies, and Next Steps,” pp. 2-3.

REAL ASSETS

Within target date funds, real assets behave like a hybrid between equities and fixed income, providing high inflation-sensitive income and capital appreciation. Thus, real assets provide diversity from equity concentration for the longer-to-retirement dated funds and diversity from core fixed income concentration for the shorter-to-retirement dated funds.

Real assets are the tangible structures and raw materials that support the basic functioning of a productive global economy. They are the properties where people live, work, shop, and store goods; the infrastructure assets that provide power and water or enable transportation and communications; and basic natural resources such as food and heating oil.

Within target date funds, real assets behave like a hybrid between equities and fixed income, providing high inflation-sensitive income and capital appreciation.

Real assets encompass a broad range of categories, such as real estate, infrastructure, natural resources, and commodities. It is important to note that while these categories share certain common characteristics, they represent distinct markets with different drivers of risk and return.

Real assets rely on income as a substantial driver of return. Consistent income provides a “floor” and can smooth the return experience compared with relying on appreciation (e.g., stocks). In addition, real estate lease agreements and infrastructure contracts are frequently long-term agreements and, in certain categories, commonly include explicit or implicit escalators to mitigate inflation risk.

PRIVATE EQUITY

Private equity primarily serves to enhance long-term returns over public market equities and offers access to non-market traded investments made into companies of all sizes. This offers an entry point to fast-growing small and midsize companies that are not listed on exchanges.

Private equity offers different risk-return drivers and higher expected returns than traditional assets over the long term for a variety of reasons, including the information premium, ability to actively improve strategic and operational inefficiencies, and ability to arbitrage pricing between the public and private equity markets. Fewer and fewer companies are choosing to go public to retain more return among their investors, which is facilitated by the increasing availability of private capital to support growth. Many that do go public are already mature large companies by the time they become listed. As a result, public equity investors are missing out on a large portion of the investable universe and the opportunity to benefit from a significant period of growth for those companies by only investing in public assets.

Preqin¹⁴ forecasts global private equity and venture capital assets under management will reach \$11.12 trillion by 2026 from an estimated \$5.33 trillion at the end of 2021, which further highlights the growth of this asset class and its significance to investors.

Private equity primarily serves to enhance long-term returns over public market equities and offers access to non-market traded investments made into companies of all sizes.

14. Preqin, “2022 Preqin Global Private Equity Report: Q1 2022.”

PRIVATE CREDIT

Private credit serves to provide outperformance of listed bonds and securitized credit, primarily through higher yields, while also diversifying the portfolio to reduce overall risk. Private credit includes a diverse array of non-listed bonds and loans that are not traded on public exchanges, such as asset-specific whole loans, specialty finance, and distressed corporate credit. Investors in these markets seek to take advantage of this illiquidity to seek higher returns. However, in contrast to listed bonds, private and distressed bonds often require a more “hands-on” approach to negotiate with borrowers and seek to avoid defaults.

While private equity is looking to generate capital growth, investors seeking yield can also benefit from investing in certain strategies, such as private debt, which can return more than their public or liquid counterparts. This is because lenders often have less competition, can impose higher interest rates, and can demand fees for arranging or changing the terms of a loan. These attributes mean private markets can offer outperformance as well as other positive characteristics, such as diversifying the portfolio to reduce overall risk and delivering yield for cash-flow-needy investors.

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According to Preqin,¹⁵ assets under management in private debt were \$1.22 trillion as of April 2022, up from \$205 billion at year-end December 2007. Preqin forecasts private debt growth will accelerate, propelling it to become the second-largest private capital asset class.

VALUE CREATED THROUGH AN EXPANDED OPPORTUNITY SET

This research does not advocate or argue in favor of one particular asset class. Each asset class plays a part in creating a combined, diversified portfolio using an expanded opportunity set of investments. The expanded portfolio leverages this combination of investments to help drive and deliver improved risk-adjusted returns net of fees and thus better retirement outcomes for DC plan participants.

Previous 2018 Research Findings

Target date funds represent an enormous share of the DC landscape. Between 2017 and 2021, the percentage of plans offering TDFs has grown from 92% to 97%. In addition, 81% of all participants use TDFs and 69% of participants owning TDFs have their entire accounts invested in a single TDF,¹⁶ underscoring their prevalence and importance to workers and plan participants.

In 2018, the CRI examined the challenges and benefits of expanding the asset classes used in DC plans to incorporate the types of investments more commonly used in long-term investment pools such as DB plans — and doing so without introducing further complexity for plan participants. That report concluded that there would be a real opportunity for participants to boost savings and contribute to a more sustainable stream of retirement income.

In the analysis, as much as 30% of a TDF’s glide path included alternative assets with allocations to illiquid private assets up to and into retirement. The report modeled different scenarios, injecting each asset class separately, and one scenario all three of the asset classes. In every scenario, there were positive benefits to including alternatives. However, the analysis showed that a more fully “diversified” TDF — one that includes a combination of alternative asset classes — produced a superior distribution of long-term participant outcomes relative to a typical TDF. The amount of annual retirement income generated by converting a participant’s DC balance into a stream of income at retirement has the potential to improve by 17% in the expected case (50th percentile) and by 11% in a worst-case or downside outcome scenario (5th percentile).¹⁷

Between 2017 and 2021, the percentage of plans offering TDFs has grown from 92% to 97%. In addition, 81% of all participants use TDFs and 69% of participants owning TDFs have their entire accounts invested in a single TDF.

15. Preqin, “Preqin Quarterly Update: Private Debt Q1 2022.”

16. Vanguard, “How America Saves 2022.”

17. Antonelli, “The Evolution of Target Date Funds: Using Alternatives to Improve Retirement Plan Outcomes.”

Differences Between the 2018 and 2022 Study Methods and Analysis

In constructing this new analysis, the CRI made the following changes to its methodology:

- **Modeled the benefits of smaller allocations to alternative assets.** While some plan sponsors can, and potentially will, allocate as much to alternative assets as some DB pension plans do, this adjustment was made because many DC plan sponsors seeking to incorporate alternative assets are likely to do so incrementally over time and may not wish to allocate as much of the portfolio to alternatives that the 2018 paper analyzed. This analysis also serves to highlight how even modest allocations to alternative assets relative to the 2018 analysis still demonstrate meaningfully improved outcomes relative to the TDF industry average.¹⁸
- **Changed the alternatives basket of investments modeled by adding private credit and removing hedge funds.** Allocating to private credit can create a better balance in the illiquidity premium across private equity and private credit. This creates a corresponding reduction in the private equity allocation. Private credit can also generally be accessed at lower fees than hedge funds — an important consideration for DC plans.
- **Broadened the modeled real assets allocation beyond core real estate.** This change creates a more diversified allocation to real assets, consistent with how institutional investors are approaching such allocations, which includes both public and private real estate and infrastructure assets.
- **Tightly managed portfolio risk relative to TDF industry average.** The portfolio construction controls for portfolio risk-level adjustments by allocating to alternative assets in a way that does not change the ex-ante risk level relative to the TDF industry average, to provide a better like-for-like comparison. To accomplish this, private equity was substituted for global public equities, private credit was substituted for core bonds, and real assets were substituted from a combination of public equity and core bonds in the longest-to-retirement funds and sourced solely from core bonds in the shortest-to-retirement fund to reduce concentration risks in those asset classes.

Private equity was substituted for global public equities, private credit was substituted for core bonds, and real assets were substituted from a combination of public equity and core bonds in the longest-to-retirement funds and sourced solely from core bonds in the shortest-to-retirement fund to reduce concentration risks in those asset classes.

In addition, the **Expanded TDF** in 2022 differs from the **Diversified TDF** in 2018 in several ways:

- The percent allocations to alternatives are lower for the longest-dated funds (15%) and shortest-dated funds (10%) than for the medium-dated funds (maximum of 20%).
- In the longest-dated funds, there is a lower allocation to alternatives to maintain the high expected return of those long-term investments, similar to the TDF industry average.
- In the shortest-dated funds, alternatives are lower to keep the risk level low while maintaining sufficient liquidity to cover potential outflows.
- In medium-dated funds, allocations to alternative assets are higher to maintain higher levels of returns while managing the risk consistent with the TDF industry average. Ultimately, these more moderate risk portfolios are where using alternatives provide the greatest advantage over the TDF industry average, because expected returns can be maintained while reducing portfolio risk through using alternatives, whereas the more common approach in TDFs is to add significant allocations to lower-yield core fixed income during this period.

18. Sourced from WTW's target date research glide path survey, updated annually, which is constructed using information from asset managers. The target date fund families include American Century, American Funds, BlackRock, DFA, Fidelity, John Hancock, JPMorgan, Mellon Capital, MFS, Morningstar, PIMCO, Principal, Prudential, Schwab, SSgA, Nuveen, T. Rowe Price, Vanguard, Voya, and Wells Fargo.

New Analysis Shows More Modest TDF Asset Diversification Can Still Generate Improved Income Outcomes

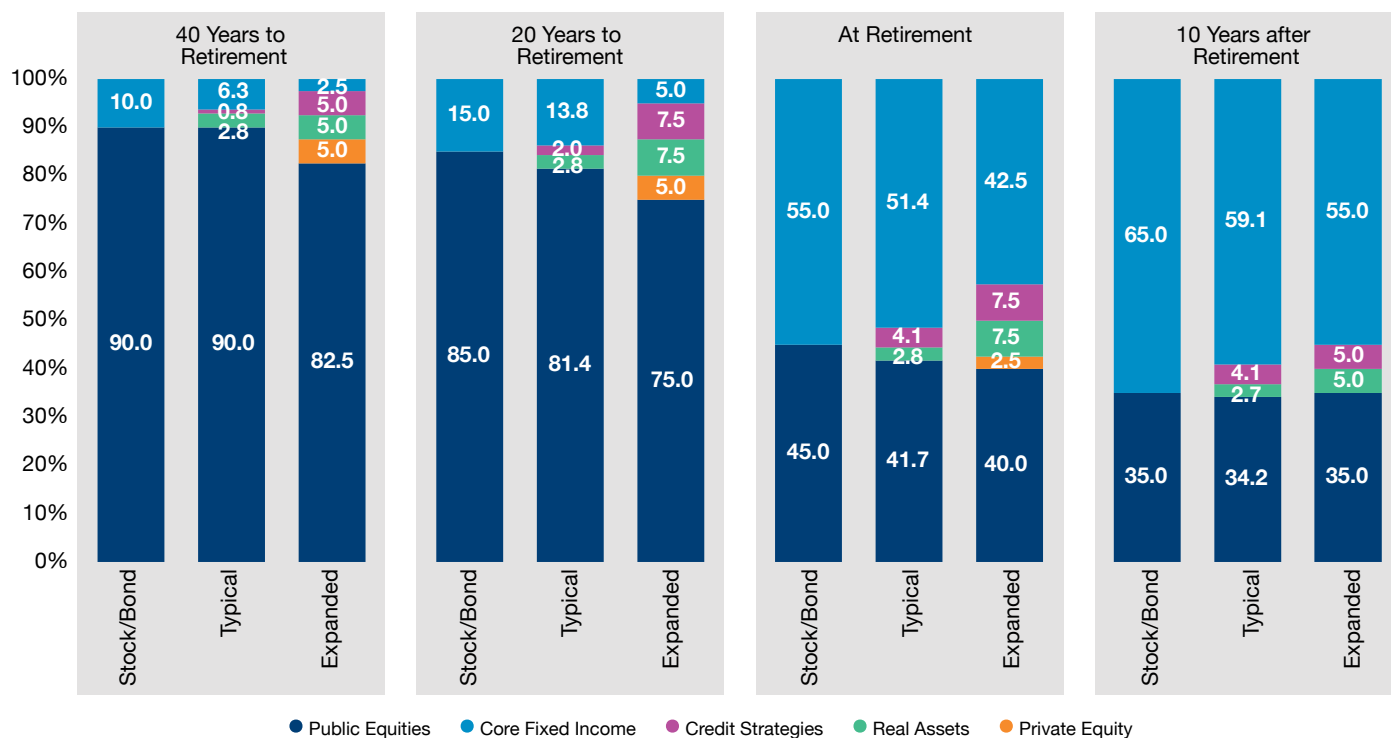
To evaluate the potential investment performance of a Typical TDF portfolio versus an Expanded TDF portfolio that incorporates alternative assets, the analysis models and compares the three glide paths of similar prospective risk:

- 1. Stock/Bond Only** — an allocation mix of global equity and aggregate bonds that matches the risk profile of the Typical TDF
- 2. Typical TDF** (average of largest TDF providers) — an allocation mix that includes very modest amounts of real assets and private credit
- 3. Expanded TDF** — adds private equity, along with real assets and private credit, while increasing the allocations to each of these alternative asset classes

As shown in **Figures 1 and 2**, the Typical TDF does include modest levels of diversification. That diversification of credit and real assets primarily consists of high-yield bonds and public REITs that often have high correlations to public equity markets and thus offer limited diversification from market risk. The Expanded TDF aims to increase portfolio efficiency at a comparable risk level and, even with the more modest allocations to alternatives incorporated into this model relative to the 2018 paper, still does a better job of maintaining expected returns while reducing portfolio risk.

The main takeaway is that there are several risk and return drivers in the marketplace and most TDFs offered today are overly exposed to equity risk as a primary driver, with interest rate and inflation as secondary factors. Diversifying asset exposures and broadening the investment opportunity set allows access to alternate return drivers (e.g., skill, illiquidity, credit) and provides benefits in navigating an uncertain future.

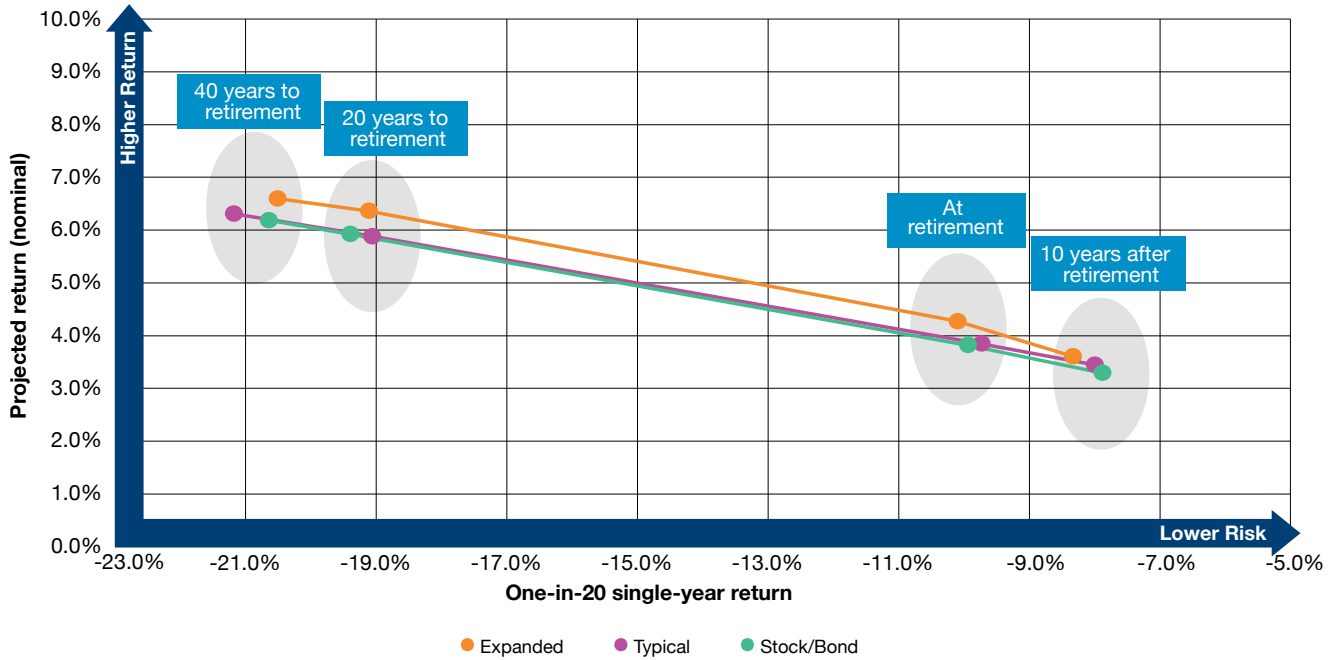
Figure 1 / Proposed Glide Paths — Typical and Expanded TDFs ^{19,20}



19. See the Appendix for the TDF glide path asset allocation data in this chart.

20. Public equities in all three glide paths assumed to be consistent with the approximate global market cap of 50% US large cap, 5% US small cap, 35% developed non-US equities, and 10% emerging market equities.

Figure 2 / Expanded TDF Manages Risk While Delivering Improved Returns



ENHANCING RETIREMENT INCOME

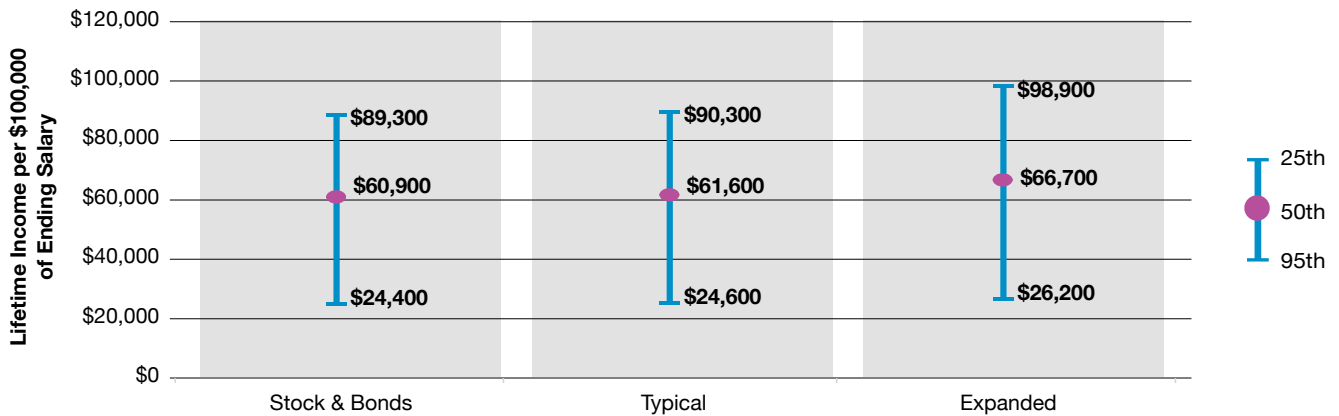
Retirement success is measured as the ability to create a stream of income in retirement through accumulating assets over a working career by converting simulated DC balances at retirement into inflation-adjusted lifetime annuities.

The retirement income projections were developed by simulating a participant’s working life over 5,000 paths. In each path, the full-career employee contributes to the plan and other key variables fluctuate around their expected values, such as salary growth, market returns, and inflation. At retirement, the participant has 5,000 unique ending DC balances, each of which is converted into an annuity amount.

The annuity conversion factor is based on simulated interest rates and assumes a 3% annual cost of living adjustment.

Figure 3 shows the amount of income that can be generated by converting a full-career employee’s DC balance into a stream of income at retirement for each of the three scenarios modeled. (A full-career employee is assumed to participate in a DC plan for 40 years (ages 25 to 65). Savings are assumed to be 5.7% of wages initially, increasing to 8.4% by age 55 with an employer match of 50% on the first 6% of savings. Annual wages are assumed to increase at CPI +2% until age 45, and only with CPI thereafter, broadly consistent with U.S. Census data.)

Figure 3 / Range of Potential Replacement Ratios ²¹



21. Replacement ratio assumes the asset value at retirement is converted into an immediate annuity.

1. Stock/Bond Only: Under adverse scenarios (5th percentile), the DC plan may replace \$24,400 or less per \$100,000 of pre-retirement annual wages; in favorable scenarios (75th percentile), it may replace \$89,300 or more, with the expected outcome (50th percentile) of \$60,900.

2. Typical TDF: Under adverse scenarios (95th percentile), the DC plan may replace \$24,600 or less per \$100,000 of pre-retirement annual wages; in favorable scenarios (25th percentile), it may replace \$90,300 or more, with the expected outcome (50th percentile) of \$61,600, each of which is \$1,000 more than the stock/bond glide path.

3. Expanded TDF: Under adverse scenarios (95th percentile), the DC plan may replace \$26,200 or less per \$100,000 of pre-retirement annual wages; in favorable scenarios (25th percentile), it may replace \$98,900 or more, with the expected outcome (50th percentile) of \$66,700.

These results highlight how expanding the opportunity set to include alternatives can meaningfully improve participant outcomes by thousands of dollars per year in annual income.

Under adverse scenarios (95th percentile), the DC plan may replace \$26,200 or less per \$100,000 of pre-retirement annual wages; in favorable scenarios (25th percentile), it may replace \$98,900 or more, with the expected outcome (50th percentile) of \$66,700.

IMPROVING AND SUPPORTING LONG-TERM SPENDING IN RETIREMENT

More participants are staying in DC plans post-retirement as plan sponsors focus on retirement readiness and the benefits of maintaining scale and institutional buying power for all participants. For this reason, long-term retirement spending metrics were tested to assess how well the alternative glide path constructions support retirement spending.

The analysis used inflation-adjusted spending rules to assess the probability of asset depletion over longer-term retirement spending horizons. Specifically, the assumptions assume that at retirement, a participant takes their accumulated balance and spends a certain percentage in the first year. Each subsequent year, that amount is increased for realized inflation, so the participant's retirement spending profile assumes constant spending in real (inflation-adjusted) terms. A typical retirement spending heuristic is a 4% spending rule, which was reviewed along with a more aggressive 5% spending rule. In each of these scenarios, the spending amount plus inflation serves as a hurdle rate for the investments to avoid erosion of the principal balance over time. The objective is to support lifetime retirement spending, so some erosion of principal over time is acceptable as long as assets remain positive.

As shown in **Figure 4**, at a 4% spending level, each glide path offers high probabilities of success over shorter time horizons, but over 30-year time horizons, the Expanded TDF offered probabilities of success 5% better than the Typical TDF. With a more aggressive 5% spending rate, the Expanded TDF offers a 2% higher probability of success than the Typical TDF over a relatively short 20-year retirement spending horizon. Over the longer 30-year horizon, the Expanded TDF outperforms by 7%.

Figure 4 / Probability of Maintaining Positive Assets in Retirement

	Number of years after retirement	Stock/Bond	Typical	Expanded
4% spending	20 years	93%	94%	94%
	30 years	55%	57%	62%
5% spending	20 years	69%	71%	73%
	30 years	21%	21%	28%

Figure 5 / Summary of key metrics showing improvements from utilizing alternatives in TDFs

	Stock/Bond	Typical	Diversified
Expected retirement income	\$60,900	\$61,600	\$66,800
“Bad scenario” retirement income	\$24,400	\$24,600	\$26,200
Probability of positive assets after 30 years of spending at 4%, adjusted for inflation	55%	57%	62%
Probability of positive assets after 30 years of spending at 5%, adjusted for inflation	21%	21%	28%

TDF portfolio managers spend considerable time and energy determining their glide paths and underlying asset allocations. This effort takes into account extensive investment research, including historical returns and correlations, current market conditions, and forward-looking assessments of risk and return potential. The analysis indicates that the Typical TDF does add value relative to a stock/bond portfolio, although perhaps not as much as one might expect. As the summary results in **Figure 5** highlight, Typical TDFs improve risk-reward characteristics only marginally when compared with the potential improvements that can be made through an Expanded TDF that allocates to alternative assets.

While maintaining similar market risk across the glide path relative to the current TDF industry average, the resulting analysis shows that:

- **The Typical TDF produces modest improvement over stock/bond portfolios net of fees** — TDF providers invest significant time and resources on constructing portfolios that show only a 1% improvement to each of long-term retirement income expectations and worst-case results over portfolios limited to public equity and investment-grade bonds (stock/bond).
- **The Expanded TDF meaningfully improves results over the Typical TDF net of fees** — The Expanded TDF, which includes allocations to private equity, real assets, and private credit, further improves long-term retirement income expectations and worst-case results by 8% and 6%, respectively.

The Expanded TDF, which includes allocations to private equity, real assets, and private credit, further improves long-term retirement income expectations and worst-case results by 8% and 6%, respectively.

An analogy about making dinner may help clarify the results. There are only so many “meals” that can be created out of the same narrow range of “ingredients.” Typical TDF providers that use enhanced portfolio construction techniques and other areas of the bond market, such as high-yield and emerging-market debt, improve long-term retirement income expectations and worst-case results by approximately 1%. Expanding the opportunity set to include private equity, private credit, and real assets provides a richer selection of “ingredients” for building portfolios, which further enhances participant outcomes.

Challenges to Creating an Expanded TDF Portfolio Can Be Addressed

In its 2018 and 2020 reports, the CRI explored the reasons why there has not been greater adoption of alternative assets in today's DC retirement plan TDF investment options. The biggest obstacle is fear. Plan sponsors are constantly worried that any changes would be viewed as creating fiduciary risks and leave them open to litigation. However, such fiduciary obligations can be managed through a careful and prudent process focused on enhancing potential outcomes for participants.

Broadly speaking, there are four key challenges that must be navigated.

LIQUIDITY

Participants in TDFs require the ability to withdraw some, or all, of their balances from the fund on any given day. The liquidity needs of the participants in a TDF are broad and diverse; one participant may not touch their balance for several years, another may be taking the required minimum distributions under the IRS tax code, another may need to make a large withdrawal to make a large purchase, and another may decide to withdraw their entire balance and exit the plan completely.

While it is not a common behavior in practice for participants to pull the entirety of their balances out of the fund, these potential situations create a daily need for some amount of liquidity to allow for these types of transactions. Alternative asset classes are not as easily transacted or liquidated as a more traditional stock/bond portfolio. To accommodate the daily liquidity needs within the TDF, 80%-90% of the Expanded TDF portfolio is held in public equities and investment-grade fixed income throughout the glide path.

In practice, plan participants in TDFs rarely reallocate their DC investments. This is partly because TDFs serve as the option into which participants who fail to elect an investment option are defaulted. This passive participation results in stable inflows and stable outflows that mirror other institutional asset pools and facilitate TDFs to be managed similarly.

PRICING

Using alternative assets may create an additional hurdle in determining the daily market pricing of a particular TDF. It is imperative that plan participants can readily determine the market value of their balances to plan properly for their financial needs.

The challenge of pricing can be navigated within a TDF structure by using an unbiased proxy to estimate daily pricing. The use of proxies to estimate daily pricing has already been a practice in place for securities that may not have seen transactions in the last day, week, or even month. In these situations, where funds have allocations to such securities, daily pricing is estimated through proxies in between formal appraisals to determine a fair value for the funds to transact.

These proxies aim to be without bias and as accurate as possible to help prevent investors from being at a particular advantage or disadvantage relative to other investors. Within the proposed Expanded TDF, the allocations to illiquid assets are small enough that the valuation differences from using this proxy approach are likely to be negligible in terms of the impact on the total fund. For example, if the proxy for the private equity portfolio was as much as 5% off from its "true market value," the resulting impact on the total portfolio would be no further off than 0.375%. Such an impact is less than the daily swings in the equity market that typically occur.

Figure 6 / Three-Prong Benchmarking for Target Date Funds

Time Horizon	Benchmark Description & Objective
Long Term (5+ Years)	Cumulative performance toward participant income replacement goals assuming an x% withdrawal rate. Purpose is to measure progress toward income replacement goal over time.
Medium Term (3-5 Years)	Reference portfolio for each respective vintage. Benchmarks designed to measure the strategic asset allocation decisions relative to a simple passive alternative of equal risk.
Short Term (0<3 Years)	Passively implemented portfolio constructed via a weighted average of market benchmarks to match the funds' strategic asset allocation. Purpose is to measure value added by manager selection and deviations from the strategic asset allocation.

BENCHMARKING

From an investment benchmarking perspective, a three-prong approach can be used to evaluate the fund's differing purposes over varied horizons, as outlined in **Figure 6**. Underlying manager performance and deviations from the strategic benchmark can be measured over short time horizons. Over medium-term horizons, using a reference portfolio of comparable risk level provides a basis for evaluation of the portfolio construction and implementation efficacy. Long-term results can be measured using the entire reference glide path to assess the strategy's progress toward the income replacement goal.

FEES

The DC industry has been heavily focused on fees, and this focus has given way to a "race-to-the-bottom" mentality for some plan sponsors in aiming to steer clear of potential litigation. According to Morningstar,²² TDF share classes in the cheapest quintile took in \$59 billion in inflows in 2021. The three more expensive quintiles shed more than \$38 billion in aggregate.

While this type of behavior may help lower investment management fees for participants, the reduction in fees may come at a cost of worse investment performance for plan participants due to limiting plan investments only to those that can be purchased at the lowest price.

There is no fiduciary requirement for sponsors to implement the lowest cost option available, and it is not particularly controversial to state that participant outcomes are improved as long as the net-of-fee value proposition is positive. As noted in CRI's 2020 report, "most importantly, a participant's retirement outcome will not be based on fees alone, but rather will contemplate the potential for alternative investment to deliver returns net of fees. Therefore, a fiduciary's ultimate determination should be based on the potential of alternative investments to increase a TDF's performance net of fees. This determination forms part of a prudent process, including consideration of potential investment performance, fees, and fund managers' experience."²³

Rather than adopting a race-to-the-bottom mentality, an "all-in" fee budget can create a more effective way to be mindful of headline fees while maintaining access to a variety of investment options. This fee target allows for plan sponsors to set a budget to guide the portfolio construction and fund selection process within those budgetary constraints.

22. Morningstar, "2022 Target-Date Strategy Landscape Survey."

23. Kreps and Antonelli, "Use of Alternative Assets in Target Date Funds: Challenges, Strategies, and Next Steps," pp. 7-8.

Conclusion

DC plans will continue to expand in their role as the primary retirement vehicle for millions of U.S. workers. Within those plans, TDFs are poised to also continue to serve as the primary form of fund used by most of those workers. However, despite this ever-increasing importance in the role TDFs play, the portfolios in those funds are lagging behind their DB counterparts in asset diversification. In the same way that a wide variety of “nutrition” options is necessary for healthy, productive development, a wider and more diverse selection of asset classes within DC plans can also help foster better development and growth for the retirement assets within those retirement accounts. Alternative asset classes represent some of these expanded options that can help drive and deliver those improved results.

As demonstrated in the original 2018 research, the 2020 policy report, and the updated research for this paper, greater diversification and the inclusion of alternative assets in DC portfolios can help drive greater returns and deliver improved retirement outcomes for the millions of U.S. workers who rely on them.

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Appendix: WTW Capital Market Assumptions as of January 1, 2022

Figure 7 / WTW Capital Market Assumptions (as of January 1, 2022)

	1st Year Arithmetic Mean	10th Year Arithmetic Mean	10-year Geometric Returns	Annual Standard Deviation
Global Equities – Unhedged	5.9	7.5	5.0	18.3
Private Equity	10.5	12.1	8.5	23.3
REITs	4.7	6.2	4.2	15.9
Infrastructure	4.5	6.1	4.2	15.0
Real Estate	3.4	5.0	3.7	9.9
Real Assets*	4.4	5.9	4.6	10.4
Commodities	2.3	3.8	2.0	14.8
Hedge Funds	N/A	N/A	N/A	N/A
High Yield	3.3	4.0	3.2	10.0
Emerging Market Debt	3.1	3.3	2.6	8.6
Bank Loans	2.1	3.7	2.7	7.8
Private Credit	3.5	4.6	3.7	7.9
Aggregate Bonds	1.8	1.5	1.4	4.1
TIPS	2.9	1.3	1.6	5.8
Cash	0.4	2.0	1.2	2.1

All asset class assumptions assume net-of-fee performance for large institutional investors. The asset class assumptions assume passive implementation, where possible. For asset classes where passive implementation is not possible, assumptions represent median net-of-fee results. According to Preqin data for all private equity funds, the average annual spread over public equity from 2006 to 2021 was 4.3%. Private Credit assumptions use public high yield and bank loans adjusted to account for downgrade and defaults not prevalent for private market debt issuance. Global equities represents the approximate global market cap of 50% US large cap, 5% US small cap, 35% developed non-US equities, and 10% emerging market equities.

*Equal weights of REITs, Infrastructure, Direct Real Estate, and Direct Infrastructure

Figure 8 / TDF Glide Path Asset Allocations: Stock/Bond | Typical | Expanded

	40 Years to Retirement			20 Years to Retirement			At Retirement			10 Years after Retirement		
	Stock/Bond	Typical	Expanded	Stock/Bond	Typical	Expanded	Stock/Bond	Typical	Expanded	Stock/Bond	Typical	Expanded
Public Equities	90.0%	90.0%	82.5%	85.0%	81.4%	75.0%	45.0%	41.7%	40.0%	35.0%	34.2%	35.0%
Private Equities	0.0%	0.0%	5.0%	0.0%	0.0%	5.0%	0.0%	0.0%	2.5%	0.0%	0.0%	0.0%
Real Assets	0.0%	2.8%	5.0%	0.0%	2.8%	7.5%	0.0%	2.8%	7.5%	0.0%	2.7%	5.0%
Hedge Funds	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Credit Strategies	0.0%	0.8%	5.0%	0.0%	2.0%	7.5%	0.0%	4.1%	7.5%	0.0%	4.1%	5.0%
Core Fixed Income	10.0%	6.3%	2.5%	15.0%	13.8%	5.0%	55.0%	51.4%	42.5%	65.0%	59.1%	55.0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



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