Should defined contribution plans include private equity investments?[1]

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Abstract

This paper evaluates the pros and cons of including private equity fund investments in defined contribution plans. Potential benefits include higher returns and improved diversification as well as a relatively safe method for accessing investments previously only available to institutions and the very wealthy. Despite these enticing benefits, they need to be weighed against potential challenges and costs that may arise from creating this broader access to private funds. The complicated structure and uncertainty around the mechanism to provide required liquidity backstops may bring increased fees or even disrupt the private fund model. Consequently, whether access to private investments provide a net benefit for DC plan participants will depend both on how private fund investments perform in the future as well as how institutional features around plan participation evolve.

1. Introduction

Investors want access to the best performing assets for their portfolios. Driven by the strong performance of private investment funds in recent decades, many providers of defined-contribution (DC) investment services have advocated for broader access to private investments in these plans, such as 401(k)s. Inclusion of private funds in DC plans could potentially provide better investment portfolios for investors and at the same time benefits for providers (e.g., potential for additional management fees). But, can access to private funds really occur given operating and regulatory/legal constraints? Perhaps more importantly, should this happen? Or more specifically, what is the evidence suggesting that gains from investing in private funds are likely to accrue to retail investors? In this analysis we draw on existing research to shed light on these questions. While a wide range of private

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investment strategies could be included in DC plans, we will focus primarily on investments in private equity (PE) buyout funds.

Recently, the prospects for investments in private funds by retail investors through U.S. DC plans were boosted by an 'Information Letter' written by the Department of Labor (DOL) that effectively provided a clear path for DC plans to invest in private funds. On June 3, 2020, the DOL sent a public response letter that evaluates whether a proposed investment structure by Pantheon Ventures (U.S.) L.P. and Partners Group (USA), Inc., which allows the inclusion of private equity investments in individual account plans, would be compliant under ERISA.[2] The letter was not a simple question of yes or no on the inclusion, but rather provided a detailed outline of how to create such an investment. First, plans must offer the PE investment as part of a multi-asset class vehicle with the structure of a custom target date, target risk, or balanced fund. The target date was proposed as the most likely structure and would be created in a separately managed account with an investment committee that would maintain responsibility. Alternatively, a plan could utilize a fund-of-funds structure with one underlying fund being primarily PE. Second, these multi-asset class vehicles would be required to have sufficient exposure to other assets and the proportion allocated to PE must remain below a specified threshold. Third, plans must maintain a level of liquidity, in the form of investments in public securities or other relatively liquid assets, in order to handle the necessary capital calls as well as distributions. In addition, PE funds would not to be available for direct investment by plan participants.

The DOL suggested that there are differences when deciding to include PE in a defined benefit plan and when PE investments are offered as part of a participant directed plan that a fiduciary must consider. Furthermore, the DOL outlined the following concepts a fiduciary should examine when making such a consideration. First, a fiduciary must be convinced that adding a PE component would provide a more diversified investment opportunity with an appropriate net return once considering risk and fees. Second, it must determine if an appropriate plan fiduciary with the required knowledge and skill to understand the PE investment will manage the fund. Third, a fiduciary must ensure that the fund has limited exposure to PE and has established a method of responding to liquidity events.

Ultimately, the DOL concluded that an offering that falls in line with the structure outlined above would not violate Title I of ERISA. Also, a fiduciary who takes the recommended considerations would not be in violation of a fiduciary's duties in sections 403 and 404 of ERISA for solely including a PE portion in an offering. The DOL finished the letter by stating the recommendation that, "in making such a selection for an individual account plan, the fiduciary must engage in an objective, thorough, and analytical process that compares the asset allocation fund with appropriate alternative funds that do not include a private equity component, anticipated opportunities for investment diversification and enhanced investment returns, as well as the complexities associated with the private equity component."

The guidelines provided by the DOL letter are critically important. First, the letter outlines the mechanism that would allow retail investors exposure to private funds. Specifically, providers would utilize a fund-of-funds with one of the underlying funds being primarily PE or providers would create a target date fund with a separately managed account and an investment committee that would maintain responsibility. Additionally, the letter provides plan providers an outline of how to avoid

[2] https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/resource-center/information-letters/06-03-2020

financial liability. As noted already, the DOL does not say plan providers cannot be sued, however it can be argued that with these guidelines there is now some method to avoid losing a litigation battle. This is a vital component for plan providers given the extensive legal action against plan fiduciaries around high fees or risky assets, but also specifically related to private investments such as in cases brought against Verizon and Intel. Earlier this year the Supreme Court allowed continuation of a lawsuit against Intel by a former employee who claimed that Intel's company retirement plan was over-allocated to hedge funds and private equity and therefore created a breach of their fiduciary duties.[3] The crux of the argument was that even though employees were informed via email with links to the documents, this was not enough for the plan participants to have "actual knowledge" around the investments. As evidenced from this example, the guidelines provided by the DOL letter for how to avoid litigation in the future is of substantial importance.

Reactions to the DOL letter have been generally positive. An article in the Wall Street Journal noted that this could change the landscape for retail investors by removing barriers and could potentially give PE firms access to a portion of the $6.2 trillion in 401(k) plan assets. [4] A Bloomberg article stated that while this is a welcomed development, careful due diligence and caution were needed.[5] While another Bloomberg article pointed out that additional consideration is needed as litigation protection is not guaranteed by the DOL letter and as such brings a new level of uncertainty to investors and plan providers. [6]

With more and more of the capital of our economy being allocated to private markets we want to better understand the impact of allowing private funds in defined-contribution plans. As highlighted by a recent Bloomberg opinion piece, the merits of inclusion of PE investments in DC plans are not easily understood and are open to much speculation and interpretation.[7] In this analysis, we contrast the desire to allow equal access to investment opportunities with the need to protect unsophisticated investors with regulated "seatbelts and airbags" to keep them from harm. We also consider the need to educate investors of the possibility of lower-than-expected returns.

In addition to the DOL letter, in August 2020 the SEC provided an update on the definition of an accredited investor.[8] This rule change on who qualifies for PE investments provides additional evidence of the changing landscape for private investments. "Today's amendments are the product of years of effort by the Commission and its staff to consider and analyze approaches to revising the accredited investor definition," said Chairman Jay Clayton. "For the first time, individuals will be permitted to participate in our private capital markets not only based on their income or net worth, but also based on established, clear measures of financial sophistication." As mentioned by the Chairman, this "modernizing" of the definition of who is an accredited investor now includes some measure of financial sophistication, which was lacking before. This means that people who are deemed to understand the characteristics of a private market investment will now be allowed to participate.

[3] https://www.reuters.com/article/us-usa-court-intel/u-s-supreme-court-allows-retirement-plan-lawsuit-against-intel-idUSKCN20K2B1
[4] https://www.wsj.com/articles/u-s-labor-department-allows-private-equity-in-401-k-plans-11591229396
[5] https://news.bloombergtax.com/daily-tax-report/insight-dols-private-equity-investment-information-letter-what-it-means-for-401k-plans
[6] https://news.bloomberglaw.com/employee-benefits/private-equity-options-for-401ks-bring-litigation-uncertainty
[7] https://www.bloomberg.com/opinion/articles/2020-09-16/does-private-equity-warrant-a-spot-in-retirement-accounts
[8] https://www.sec.gov/news/press-release/2020-191

For example, this includes people holding stockbroker certifications (Series 7, 65 and 82), "knowledgeable employees" of a private fund, and LLCs and "family offices" with $5 million in assets. Although this rule change may not bring a large wave of new capital to private markets, it widens the door of public availability to the private market.

Given these recent developments, it is clear that the landscape is shifting to allow private fund exposure for a wider set of individual investors. This change has the potential to impact the return on savings for tens of millions of individuals in the U.S. Our analysis seeks to understand and document the pros and cons of including PE in defined contribution plans so that both plan providers and consumers can make better decisions. We draw on the growing empirical academic literature to inform this discussion.

Arguments in favor of PE in defined contributions point to historically superior risk-adjusted returns as well as a need for the general public to participate more in financial markets, not less. Numerous studies have shown that households that invest in equities end up with more wealth than those that sit on the sidelines.[9] Private equity might be one way to increase participation. To the extent that retail investors earn higher returns in PE or may feel more comfortable investing in certain companies that might not be publicly traded, this may increase their overall financial well-being. The arguments against PE rely on the illiquid and relatively opaque nature of the asset class and that future returns may not be superior to public market returns. Additionally, it is not clear how to take into account the generally higher fees and risks retail investors would be exposed to.

2. Potential Benefits of Access to Private Equity Funds

A necessary condition for including private funds in DC plans is that participants should reasonably expect to obtain overall portfolios with better returns, lower risk, or both. Given developments in the marketplace and research examining historical trends, there is good reason to believe that DC plan participants could benefit.

Changing composition of investment opportunities

We start by analyzing why this seems to be an issue of growing importance and specifically the changing nature of financial markets. In particular, over the last two decades there has been a substantial decline in the number of publicly-listed stocks in the U.S. and massive growth of private funds. The growth in private funds has occurred globally but is concentrated in developed markets like the U.S. Data from Burgiss shows that the cumulative capitalization of private capital funds has grown to $7.4 trillion as of the end of March 2020. The largest portion of the market is PE, accounting for over 60% of value, or over $4.5 trillion. The level of PE fundraising activity has risen substantially over the past two decades despite dips around the dot-com bust and the Global Financial Crisis (GFC). Buyout funds claim the largest share of PE capital with about $3 trillion in commitments representing about 64% of PE capital.

As the private fund market has been growing, the number of publicly-listed companies has been declining. Kahle and Stulz (2017) show that there are fewer public companies now than 40 years ago

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[9] See, Fermand, Kuhnen, Li, Ben-David, 2020, Expectations Uncertainty and Household Economic Behavior (SSRN working paper 3293399), and citations therein.

and that current listings are on average much larger and older than 20 years ago.[10] The decline in U.S. listings has effectively resulted in a drastic decline in the number of small-cap stocks and especially small-cap value stocks. Of course, many portfolio companies held by private equity buyout funds would be characterized as small-cap value stocks if they were publicly listed, so the decline in public listings and growth of PE over the last two decades represent an important shift in the investment opportunity set of retail investors (rather than a change in the composition of all companies in the economy). This change in opportunity set for retail investors has (at least) two important components: the effect on investible portfolio returns and the effect on portfolio diversification and risk. We consider these in turn.

Access to better returning investments

Of all the potential benefits of the inclusion of PE investments in a DC plan, the most fundamental is access to higher returning assets. As noted already, the two-decade decline in publicly-listed small-cap value stocks suggests retail investors may have lost the opportunity to invest in what has been the highest returning segment of the U.S. stock market historically.[11] In fact, at the same time that public markets were shrinking, the returns to private equity funds consistently exceeded returns on major public market indices.

Using data from Burgiss, Harris, Jenkinson, and Kaplan (2014) show that buyout funds raised from 1984 to 2008 provided higher returns net of fees than the S&P 500 by 3-4% per year on average.[12] Using an independent data set, Robinson and Sensoy (2016) also find that for vintage years 1984 to 2010, buyout funds outperformed public markets by around 3% on average.[13] More recently, Brown and Kaplan (2019) using data through mid-2018 document that U.S. buyouts have outperformed the S&P 500 by around 3.5% and find only a modest decrease in this outperformance when considering only vintage years 2009-2014.[14] Here we update performance statistics through December 2019 and provide the results in Table 1. Values reported are annual direct alphas (see Gredil, Griffiths, and Stucke, 2014) based on all buyout funds with a North American focus (first row) and all global buyout funds including North American funds (second row). These alphas measure net-of-fee performance over and above public market benchmarks. The benchmark for North American funds is the Russell 3000 index and the benchmark for global funds is the MSCI All Country World Index (ACWI). Figure 1 plots performance by vintage year through December 2019.[15] The results show that while there is variation in performance based on geographic focus, time horizon, and vintage year, buyout funds have outperformed broad public benchmarks by about 3% or more on average.

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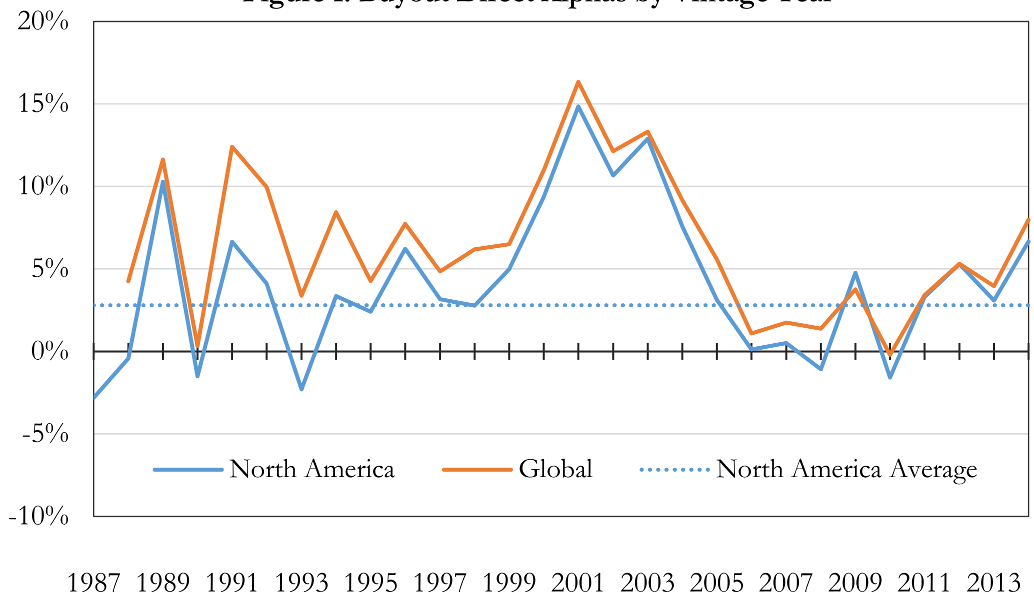
[10] Kahle, Kathleen M., and René M. Stulz, 2017, Is the U.S. Public Corporation in Trouble?, *Journal of Economic Perspectives*, 31(3), 67-88.
[11] See, for example Fama, Eugene F., and Kenneth R. French, 1993, Common Risk Factors in the Returns on Stocks and Bonds, *Journal of Financial Economics* 33, 3-56.
[12] Harris, Robert, Tim Jenkinson, and Steven Kaplan, 2014, Private Equity Performance: What Do We Know?, *The Journal of Finance*, 69(5), 1851-1882.
[13] Robinson, David and Berk Sensoy, 2016, Cyclicality, Performance Measurement, and Cash Flow Liquidity in Private Equity, Journal of Financial Economics 122(3), 521-543.
[14] Brown, Gregory and Steven Kaplan, 2019, Have Private Equity Returns Really Declined?, *Journal of Private Equity* 22(4), 11-18.
[15] While we report up-to-date performance data in Table 1 and Figure 1 we do not include funds with vintages after 2014 because most of these funds are still in their investment periods and have made few distributions.

Table 1. Buyout Composite Direct Alphas through December 2019

	5-year	10-year	15-year	20-year	Since Inception
North America (vs. Russell 3000)	3.1%	1.2%	3.7%	3.9%	2.8%
Global (vs. MSCI-ACWI)	3.9%	3.2%	4.7%	5.7%	6.5%

Source: Burgiss.

Figure 1. Buyout Direct Alphas by Vintage Year



Source: Burgiss, data through December 2019.

These updated performance results are important because the validity of buyout fund outperformance has been a hotly contested issue both in the media as well as in academia recently. For example, in a recent paper Phalippou (2020) finds that for vintage years 2006-2015 buyout funds performed about the same as the S&P 500.[16] However, as shown in Table 1 and Figure 1, the lower performance appears to be tied to relatively weak performance for buyout vintages around the GFC. Ilmanen, Chandra, and McQuinn also suggest that net of fees PE investments no longer offer an attractive risk-adjusted return, but these conclusions rely at least partially on stale performance data now more than 5 years old.[17]

[16] Phalippou, Ludovic, 2020, An Inconvenient Fact: Private Equity Returns & The Billionaire Factory, SSRN working paper #3623820.
[17] Antii Ilmanen, Swati Chandra, and Nicholas McQuinn, 2019, Demystifying Illiquid Assets: Expected Returns for Private Equity, *The Journal of Alternative Investments* 22(3), 8-22.

Better portfolio diversification

The trend away from public markets toward private markets also suggests that access to private markets is increasingly important for diversification by retail investors. A potential benefit to the inclusion of PE funds in DC plans is access to otherwise unavailable companies with risk profiles different than those of publicly-traded companies. While the decline of small-cap value companies has already been discussed, retail investors would likely gain access to a wide range of growth companies, as well as firms in industries such as innovative technology and health care that yield higher returns for investors willing to have exposure to higher risks. While these were traditionally the realm of venture capital funds, increasingly buyout funds and "growth equity" funds are investing in these sectors.[18]

A major consideration is that even if the PE investments only offer a fair return per unit of total risk (*ex ante*), there are potential diversification benefits to a portfolio. Risks unique to the private fund investments would be mitigated in a portfolio that also holds a broadly diversified set of stocks and bonds. A recent analysis by Goetzmann, Gourier, and Phalippou (2019) decomposes private fund returns into a set of risk factors and finds substantial diversification benefits from private funds.[19] The authors note, "Perhaps some assets perform better, or more true to their underlying factor exposures, when held by private capital. … private markets provide exposures that public markets do not, thereby offering an additional source of factor risk premia. This may help to understand why institutional investors regard private markets as a source of diversification." Another recent study by Brown, Kuhn, and Hu (2019) creates simulated diversified portfolios with an allocation to buyout funds for the years 1987-2017.[20] They find that the inclusion of PE investments into the portfolio increases average returns, reduces portfolio standard deviation (after adjusting for serial correlation in returns), and thus improves portfolio Sharpe ratios. These findings suggest that the inclusion of PE funds in DC plans has the potential to give plan participants a more diversified investment with a better risk-return reward.

Other potential benefits

In addition to an increase in risk-adjusted returns, there are other potential benefits. Expanding the set of investors with the ability to invest in private capital will likely expand the pool of capital available for private fund investments. Given that many of the fastest growing and innovative companies are increasingly preferring to stay private longer, the increase in capital supply should expand access to capital for these companies. The increase in supply could potentially lead to more business investment and broad economic gains benefiting even those without direct exposure to investment returns. DC plan investors may also benefit from the self-imposed discipline of investing in private markets, precisely because private funds are illiquid, institutional restrictions on portfolio redemptions could prevent some investors from panic selling during a market downturn.

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[18] See Brown et al. (2020), Private Equity Portfolio Companies: A First Look at Burgiss Holdings Data. SSRN working paper # 3532444.

[19] Goetzmann, William, Elise Gourier, and Ludo Phalippou, 2019, How Alternative Are Private Markets? Yale School of Management working paper.

[20] Brown, Greg, Bert-Klemens Kuhn, and Wendy Hu, 2019, Why Defined Contribution Plans Need Private Investments, Institute for Private Capital white paper.

It is also possible that target date funds in DC plans will be better positioned as limited partners (LP) in PE and thus able to garner superior returns even within the private fund space.[21] To the extent that these target date funds could be less subject to severe liquidity shocks (e.g., retail investors infrequently reallocate assets in their retirement portfolios), DC plan providers may get beneficial access or allocations to top-performing general partners (GPs) who want to avoid liquidity shocks as they craft strategies for how to deploy capital. As we discuss later in the paper, however, there are access arguments that also cut the other way. The inclusion of PE funds in DC plans could also have a positive impact on liquidity in the rapidly growing secondary market for PE funds that would benefit all market participants. As documented in a paper by Nadauld et al. (2019) transactions in the secondary PE markets come with significant price discounts.[22] Thus, an increase in activity in the secondary fund market from investors in DC plans could help alleviate this price discount. At a fundamental level, research suggests that the private ownership model can allow for value-creation through improved governance in ways not attainable for public companies.[23] In such cases, an investor in a DC plan with access to private equity may own a public company that is taken private and then own the company in the private portfolio (benefiting from value created in the process). Without access to private equity the investor would miss out on the excess returns after the take-private transaction.

Finally, there is a fundamental question of equity -- is it fair to restrict access to the highest returning investments? This is an especially poignant question given trends toward higher wealth and income inequality in the U.S. If proper fiduciary conduct is enforced, it seems unethical to categorically exclude investors from substantial and still growing opportunities in private investment funds that are afforded to all types of institutional investors and wealthy individuals.

3. Potential Drawbacks of Access to Private Equity Funds

While there are clearly potential benefits to providing access to private funds in DC plans, there are also potential disadvantages. For one, the exact structure for the implementation of such a plan is still to be determined and there is uncertainty around which method will prove to be best. Beyond just being complicated, the precise mechanism that should be created for liquidity backstops provides additional concern. Ultimately it is the responsibility of the fiduciary to handle concerns of liquidity needs, however there may be pressure on PE funds to assist.

Fees will be higher than in public equity

By the nature of the investment, fees are likely to be higher for plans that include private equity sleeves. Private investments require additional due diligence as well as more complex monitoring and internal accounting. While these costs may be effectively outsourced to a specialized manager or fund-of-funds (FoFs), they ultimately must still be borne by investors. It is not guaranteed that excess returns in PE would cover additional costs. Harris, Jenkinson, Kaplan, and Stucke (2018) find that private equity

[21] See for example, Maurin, Vincent, David Robinson, and Per Stromberg, 2020, A Theory of Liquidity in Private Equity, Swedish House of Finance Research Paper No. 20-8.
[22] Nadauld, Taylor D., Berk A. Sensoy, Keith Vorking, and Michael S. Weisbach, 2019, The liquidity cost of private equity investments: Evidence from secondary market transactions, *Journal of Financial Economics* 132(3), 158-181.
[23] See a summary of the literature and related arguments in Brown, Gregory, Andrea Carnelli, and Sarah Kenyon, 2020, Public or Private? Determining the Optimal Ownership Structure, SSRN working paper #3529421.

funds of funds outperform public markets historically, but also that they underperform direct fund investments.[24]

Future returns may be lower

One current concern surrounding PE is the growing amount of committed but unused capital or "dry powder" across the industry. Although having deployable assets may not be a problem, Braun and Stoff (2016) find that the cost of PE investing has increased in recent years and this increase is driven by factors related to higher levels of dry powder as capital has moved into the PE industry.[25] As noted previously, the 401(k) market is over $6 trillion and although only a portion of that will go towards PE funds, this still has the potential to significantly contribute to the level of dry powder. Currently, private equity buyout funds are sitting on a record of about $1.0 trillion USD.[26] A further increase in dry powder from investments through DC plans could create additional pressure on private funds to put capital to work on deals that are potentially less attractive and thus have lower returns. Moreover, the increased capital may entice the creation of more private funds which could lead to additional competition among GPs, pushing up deal prices and reducing returns. In this view of the market being "flooded with capital", the problem may only be exacerbated in certain geographical areas by gaining allocations from DC plans. Hochberg and Rauh (2013) find that institutional investors exhibit a home-bias and that these local investments tend to underperform.[27] In what could be analogous to DC plans going forward, Andonov, Bauer, and Cremers (2017) find evidence that U.S. public pension funds act on incentives to be more risk-taking which in turn drives underperformance.[28] Although more research is needed on the impact of dry powder on PE funds, it seems that the inclusion of PE in DC plans is only adding to any problems that may already exist.

Risk-adjusted returns may be below public markets

When considering the returns of PE funds one needs to evaluate the risks underlying that return. In general, the academic literature indicates that PE funds are riskier than public market indices so estimates of risk-adjusted returns to PE are less favorable to the asset class than unadjusted return comparisons. For example, some studies estimate high market betas for PE investing. Axelson, Sorensen, Stromberg (2014), Driessen, Lin, Phalippou (2011), and Buchner and Stucke (2014) document market betas for PE funds between 2.4 (for years 1980-2001) and 2.7 (for years 1994-2007).[29] Boyer et al. (2018) examine fund secondary-market transaction for 2006-2017 and estimate a

[24] Harris, Robert, Tim Jenkinson, Steven Kaplan, and Rudiger Stucke, 2018, Financial Intermediation in Private Equity: How Well Do Funds of Funds Perform? *Journal of Financial Economics* 129(2), 287-305.
[25] Reiner Braun and Ingo Stoff, 2016, The Cost of Private Equity Investing and the Impact of Dry Powder, *The Journal of Private Equity* 19(2) 22-33.
[26] Source: Burgiss.
[27] Hochberg, Yael and Joshua Rauh, 2012, Local Overweighting and Underperformance: Evidence from Limited Partner Private Equity Investments, *The Review of Financial Studies* 26(2), 403–451.
[28] Aleksandar Andonov, Rob M.M.J. Bauer, K.J. Martijn Cremers, 2017, Pension Fund Asset Allocation and Liability Discount Rates, *The Review of Financial Studies* 30(8) 2555–2595.
[29] Axelson, Ulf, Tim Jenkinson, Per Stromberg, and Michael S. Weisbach, 2013, Borrow Cheap,Buy High: The Determinants of Leverage and Pricing in Buyouts, *Journal of Finance* 68, 2223-2267; Driessen, Joost, Tse-Chun Lin, and Ludovic Phalippou, 2012, A New Method to Estimate Risk and Return of Nontraded Assets from Cash Flows: The Case of Private Equity Funds, *Journal of Financial and Quantitative Analysis* 47, 511-535. Buchner, Axel, and Rüdiger Stucke, 2014, The Systematic Risk of Private Equity, University of Passau working paper.

market beta of 2.4 and a negative risk-adjusted return (alpha).[30] However, these risk estimates are at the high end of the range of betas reported in PE research. Korteweg (2019) conducts a broad survey of risk estimates in the PE literature.[31] He also concludes that the risk of PE funds tends to be higher than that of the market index but with an estimated beta in the range of 1.3. While risk-adjusted returns to PE appear to be better than public markets for long periods, estimates for recent periods can show weaker performance.

Another approach to examining risk-adjusted returns has been to compare PE fund returns with public market portfolios that share the same risk factors as PE funds via a replication strategy. For example, Stafford (2015) shows that constructing a levered public-equity portfolio with similar size and value (low EBITDA multiple) characteristics results in superior performance to PE funds with similar risk exposure.[32] Other analyses have reached similar conclusions. These replication strategies, however, require specific structures and may not hold up in future periods. As discussed earlier, there is also the issue that the composition of public market securities is changing as more companies stay private.

Liquidity risk is inherent in the asset class and may not be properly addressed

It is widely believed that a portion of the historical return premium earned by PE investors is compensation for bearing illiquidity risk. For example, Sorensen, Wang, and Yang (2014) provide evidence that such an illiquidity premium exists.[33] Franzoni, Nowak, and Phalippou, (2012) find that PE returns are strongly subject to the same liquidity risk factor as displayed by the public market.[34] Furthermore, when adjusting for this liquidity risk, the authors find that PE abnormal returns (i.e., over a benchmark) drop to zero.

These studies raise the question of what would happen to an illiquidity premium for DC plan investors. In order to gain access to the trillions of dollars in the 401(k) market, GPs may need to devise costly mechanisms that provide additional avenues for liquidity to plan participants. As such, the cost of these new facilities may inherently absorb a private markets illiquidity premium so as to provide no net (or even a negative) benefit. In addition, plan providers may run into liquidity shocks that surpass the ability of safeguards and impose additional risk on plan participants. This need for differential liquidity has the potential to interrupt the "something special" of the private fund model that generated historical return premiums.

More specifically, imposing the requirements for quarterly liquidity, annual refunds, and other liquidity provisions could lead to costs for liquidity guarantees or fire-sale price effects. In addition, plan providers must contend with the timing and quantity uncertainty of fund capital calls. Another complication is undertaking portfolio rebalancing of the DC plan given the illiquid secondary market

[30] Boyer, Brian, Taylor D. Nadauld, Keith P. Vorkink, and Michael S. Weisbach, 2018, Private Equity Indices Based on Secondary Market Transactions, Ohio State University working paper.
[31] Arthur Korteweg, "Risk Adjustment in Private Equity Returns," *Annual Review of Financial Economics*, 11, 131-152 (2019);
[32] Stafford, Eric, 2015, Replicating Private Equity with Value Investing, Homemade Leverage, and Hold-to-Maturity Accounting, Harvard Business School working paper. See also, Chingono, Brian and Daniel Rasmussen, 2015, Leveraged Small Value Equities, SSRN working paper #2639647.
[33] Sorensen, Morten, Neng Wang, and Jinqiang Yang, 2014, Valuing private equity, *Review of Financial Studies* 27, 1977-2021.
[34] Franzoni, Francesco, Eric Nowak, and Ludovic Phalippou, 2012, Private equity performance and liquidity risk, *The Journal of Finance* 67, 2341–2373.

for funds, especially during times of large market moves when actual PE allocations may exceed benchmark allocations (via so-called "denominator effects").

Traditionally, the best estimates for interim fund performance are obtained from the inherently flawed quarterly estimates of Net Asset Value (NAV). These estimates are provided with a lag and are not suitable for higher frequency value reporting. Any systematic bias in value reporting has the potential to benefit one plan participant over another. Even investors who simply begin making drawdowns to support retirement needs will face issues of having paid fees on earlier years in some PE funds' lives without enjoying the later fund payouts. DC investors in the same fund may withdraw assets from their DC plan at very different points in time, making vintage planning for fund managers difficult, especially as the target date draws closer. This is not the same as a DB retiree who simply receives a periodic fixed amount regardless of the pension fund's return. The DC investor gets to spend only what he or she earn (and withdraws).

Plan providers would need a way to deal with benefit distributions from portfolios as participants withdraw from the plan (e.g., in a target date fund structure). If withdrawals were made more quickly than anticipated by plan participants, this would generate the potential for forced sales of funds into the secondary market at a discount. Managing these risks could potentially limit the size of the appropriate PE allocation and would therefore reduce any potential benefits from allocations to PE funds. Overall, these practical considerations mean that either plan providers would restrict allocations in target date funds or an additional measure of liquidity must be created to mitigate risks from plan withdrawals.

Because private equity is a long-term investment with a J-curve, an investor pays in capital and fees for the first few years. Retail investors will often observe low or negative returns in a young PE sleeve. Some could interpret this incorrectly and withdraw funds further increasing the risk of fire sales in the secondary market. The risk of these liquidity shocks could make the target-date funds inferior investors to GPs. Better performing GPs are already oversubscribed, and thus, this perception could result in better GPs not wanting commitments from DC plans. If plans cannot access better funds, return benefit are less likely.

Illiquidity opens the plan up to attempted gaming by participants. (Some recent work has attempted to track PE performance more frequently.[35]) Specifically, an ability to exit and enter midstream through "alternative liquidity structures" creates opportunities where more sophisticated participants will recognize the opportunity inherent in entering into these vehicles at a point where the PE funds in the sleeve are on average under-valued. Even with multiple PE funds of different vintages there may still be opportunities for identifying and exploiting biased portfolio valuations.

Finally, PE reported returns are based on the period the money is actually invested – from drawdown to distribution. But once capital is committed, enough of a liquid position must be kept to make the capital calls. Actual returns for the retail investor may end up blending lower cash-like returns with PE fund returns, resulting in a lower return profile. This problem is potentially exacerbated by the fact

[35] Brown, Gregory, Ghysels, Eric and Gredil, Oleg, 2020, Nowcasting Net Asset Values: The Case of Private Equity, SSRN working paper #3507873.

that more and more GPs are turning to subscription lines of credit, further compressing the time that the investment funds are actually earning "PE" returns.

Taking all the necessary steps to deal with these considerations for providing the needed liquidity to the DC plan will come at a cost. Providing the liquidity could effectively offset the illiquidity premium as discussed before and this in turn removes one of the key aspects of the return benefits of the private markets. Effectively this can occur as the additional layers of liquidity backstops drive up the level of fees (or equivalently, drive down the expected return) of the plan. As such these costs could negate the purpose of including the PE fund in the DC plan in the first place.

Lack of transparency and access

Beyond the aspect of the complicated structure and additional fees, there are reasons for restrictions on private funds. The issue of disclosure, or lack thereof, is likely a component of value to the private market as private funds and firms do not need to spend the time and resources on mandated regulatory disclosure. Not only are investors subject to dealing with a lower quantity of disclosure by private funds, but studies have found that the quality of reporting for private firms (e.g., portfolio companies) is lower than for public firms in a variety of dimensions.[36] As demonstrated by the Intel litigation it is critical that plan providers create a sufficient understanding of the investments they are making including the underlying risks. Plan providers must ask themselves the question of how they ensure those who are allowed to participate are actually knowledgeable enough to be considered well-informed participants. Ultimately, plan participants will bear the additional cost of education. Clearly the DOL letter provided some guidance for what plan providers can do to stay compliant with ERISA, however this does not shut down the possibility of litigation by investors. Thus, just the ability for retail investors to sue plan providers around private funds will bring with it increased legal costs for funds, possibly prompting changes to the fee structure. Again, higher fees reduce the possibility that the return benefit from private funds goes away.

As discussed previously, there are now thousands of PE funds. This leads to the concern of how plan providers will choose specific PE funds for their portfolios. The historical data suggest much wider variation in PE fund performance than is observed for public asset portfolio performance (e.g., for mutual funds). Because it is not practical to invest in all PE funds (in contrast to a public market index that invests in all stocks), there is then potential for substantial fund selection risk. Selection of which funds will perform well in the future remains a challenge. As noted already, PE funds-of-funds perform (after fees) roughly on par with portfolios of direct investments in PE funds. However, the ability to predict performance using metrics like previous fund performance has been declining for PE funds.[37] If such a broad sweep approach to owning exposure to the full array of PE investment opportunities is not feasible, then perhaps the true diversification play for retail investors is not possible, and plan providers may be exposing their clients to risks the retail investors do not understand.

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[36] Hope, Ole-Kristian, Wayne B. Thomas, Dushyantkumar Vyas, 2013, Financial Reporting Quality of U.S. Private and Public Firms, *The Accounting Review* 88(5): 1715–1742.

[37] See, Harris, Robert, Tim Jenkinson, Steven Kaplan, and Ruediger Stucke, 2020, Has persistence persisted in private equity? Evidence form buyout and venture capital funds, NBER working paper 28109, and Braun, Reiner, Tim Jenkinson, and Ingo Stoff, 2017, How persistent is private equity performance? Evidence from deal-level data, *Journal of Financial Economics* 123(2), 273-291.

4. Conclusion

Overall, a number of potential benefits may come from allowing DC plans to invest in private funds. As PE becomes an increasingly greater component of the overall economy, retail investors may need access to this market to be fully diversified. Specifically, private funds may be the only way for retail investors to obtain meaningful exposure to higher-returning assets that are increasingly closed to them including growth companies (e.g., innovative technology and health care companies) as well as small value companies. Even if the higher returns are only fair compensation for the higher risk borne by the investor (rather than an excess risk-adjusted return), this inclusion of PE funds still provides access for greater diversification and higher overall portfolio returns. Access to PE through well-structured DC plans also provides retail investors with relatively safe access to investments previously only available to institutions and the very wealthy.

Despite these enticing benefits, they need to be weighed against potential challenges and costs that may arise from creating this broader access to private funds. The complicated structure and uncertainty around the mechanism to provide required liquidity backstops may bring increased fees or even disrupt the private fund model. If liquidity is provided and fees are incurred this may remove both the diversification and return benefits and therefore remove the incentive for including PE funds in DC plans to begin with. Furthermore, consideration must be made for how to ensure that retail investors understand the risks of private fund investments and to create appropriate structures and incentives for plan providers in light of litigation or other unanticipated risks.

Whether access to private investments provide a net benefit for DC plan participants will depend both on how private fund investments perform in the future as well as how institutional features around plan participation evolve.