

US regulatory incentives for equity financing

The essential role of public pension plans

The US economic model based on equity financing contrasts with the European model which relies predominantly on debt financing; at the end of 2024, in the United States, corporate equity amounted to over 210% of gross domestic product, compared with around 90% in Europe. Since the 1980s, US pension funds, which manage part of the country's pension system on a capitalisation basis, have played an essential role in providing firms with equity capital. This article describes the rules that have encouraged state and local government pension plans to invest in equity, and especially in firms in the early stages of development (venture capital) and not listed on the stock market (private equity).

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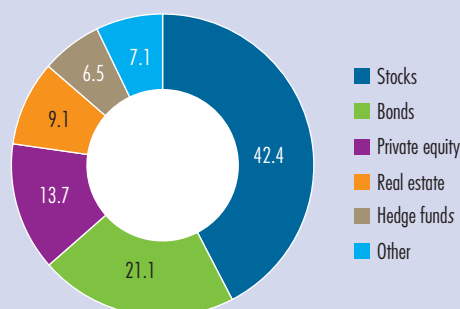
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44 trillion dollars
outstanding retirement savings in the United States
at the end of 2024

6 trillion dollars
total assets held by state and local government
pension plans in the United States
at the end of 2024

13.7%
share of US state and local government
pension plan assets invested in private equity
in 2024

Allocation of US state and local government pension plan assets in 2024
(%)



Source: Public Plans Data (PPD) from the Center for Retirement Research at Boston College (CRR).

1 In the United States, pension funds play an essential role in providing equity financing to firms

The United States has a mixed pension system, combining distribution and capitalisation

A pension system can be financed through distribution or capitalisation. The **distribution (or pay-as-you-go)** model is based on the principle of intergenerational solidarity: contributions paid in by employees are immediately paid out to retirees in the form of pensions. The sums paid in are not recoverable, but employees acquire retirement rights that entitle them to a pension when they retire. In the **capitalisation (or funded)** model, employees' contributions are placed in an investment fund, called a **pension fund** or **pension plan** (collective capitalisation), or deposited in a personal account (individual capitalisation). The money is then invested in stocks, bonds, other financial assets or real estate. When they retire, employees recover their contributions – plus any dividends, interest, rents or capital gains on the investments – in the form of an annuity or capital sum.

The United States has a three-tier pension system consisting of social security distribution, collective capitalisation in the form of occupational pension schemes, and individual savings. Since 1935, the country has had a single **pay-as-you-go** scheme, operated by the social security administration and funded by income from labour. For the majority of American retirees, social security makes up more than half of their total income.

This pay-as-you-go scheme is topped up with complementary occupational pensions that operate via **capitalisation**. This form of capitalisation is known as “collective” as it is set up by the employer for all of its staff. There are two types of pension plan:

- **Defined benefit:** the employer guarantees a set pension level on retirement, based on criteria such as salary and length of service.

- **Defined contribution:** the amount of the pension is not guaranteed and depends on the accrued capital (employee contributions, possible top-up payments by the employer) and any returns on investment.

The public sector relies mainly on defined benefit schemes, such as CalPERS (California Public Employees' Retirement System), the pension plan for California state employees. In contrast, the private sector tends to prefer defined contribution schemes, particularly 401(k) plans, where staff choose from the investment options offered by their employer. These plans may include target-date funds, which automatically adjust the level of risk to the employee's age.

Lastly, individuals can open individual retirement accounts (IRAs) or take out life insurance products, without going via their employer.

Since the 1980s, collective and individual capitalisation have been marked by two major transformations:

- **A transition towards defined contributions:** private firms have gradually stopped offering defined benefit schemes and transferred the risk to employees. The shift occurred over two decades, with the widespread adoption of 401(k) plans in the 1990s and 2000s.
- **Sharp growth in individual savings:** retirement savings accounts and life insurance products have seen robust growth, strengthening the role of individual capitalisation in retirement income (see Chart 1).

Retirement savings and equity financing in the United States

Capitalisation allows savings locked for several decades to generate returns in financial markets. In the United States, more than USD 44 trillion were held in this form of retirement savings at the end of 2024, or over 140% of GDP.

Likewise, at the end of 2024, **defined benefit** pension plans managed assets of over USD 12 trillion, or just under 28% of total US retirement savings. Of these USD 12 trillion, USD 6 trillion were held in pension plans run by states and local governments (counties, municipalities, districts), USD 2.9 trillion were held in federal plans and USD 3.3 trillion in private sector workplace pensions (see Chart 1).

Defined contribution plans accounted for over USD 12.5 trillion (over 28% of total retirement savings), including USD 8.8 trillion for 401(k) plans alone. The remaining retirement savings – some USD 19.5 trillion (44% of total outstanding savings) – were held in individual retirement savings plans, consisting of accounts with financial institutions and policies sold by life insurance firms.

The advantage of retirement savings compared with other forms of accrual is that the funds can be invested in long-term equity holdings in companies. Companies need equity capital in order to grow, take risks and innovate.

Equity investment can take several forms: the purchase of listed shares, the acquisition of equity stakes in unlisted firms, or the subscription of shares in investment funds managing stock portfolios. The acquisition of stakes in

unlisted firms is known as **private equity**. It is generally carried out via specialised investment funds, which build up a portfolio of equity stakes in unlisted firms. **Venture capital** is a sub-set of private equity, which consists in exclusively buying equity interests in newly launched, innovative firms or young firms with high growth potential (start-ups; see Appendix 1). Private equity and venture capital are high-risk investments, since investors may find themselves unable to sell their unlisted shares or could lose everything if the firm collapses. However, if the firm does well, they profit from the entirety of the capital gains generated by its success.

US retirement savings are a major source of equity financing for American firms, and even for some foreign firms. For example, at the end of 2024, 401(k) defined contribution plans and IRAs held more than 70% of their assets (or over USD 17 trillion) in equity. However, their investments were mainly in listed shares or shares in plain vanilla equity funds. Private equity and venture capital accounted for less than 1% of their assets, and only 2% of 401(k) plans offered employees the option of this type of investment.

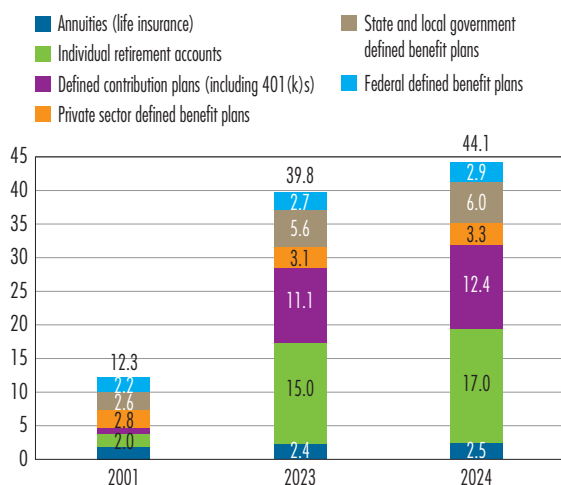
State and local government defined benefit pension plans are the biggest investors in private equity and venture capital

Contrary to popular belief, in the United States, it is defined benefit pension plans (and not defined contribution plans such as 401(k)s) that invest the most in private equity (including venture capital) and therefore take the most risk. Among defined benefit plans, the biggest investors are those sponsored by states and local governments, which manage the pension savings of the public sector workers they employ.

Investments by public sector pension plans amounted to USD 6 trillion at the end of 2024, representing 14% of total US retirement savings. Since 2001, they have committed between 55% and 60% of their assets to equity financing. However, since the 2008 financial crisis, there has been a notable shift towards private equity: at the end of 2024, 13.7% of public sector pension plan assets were held in private equity (including venture capital), compared with just 4.8% in 2007 (see Chart 2).

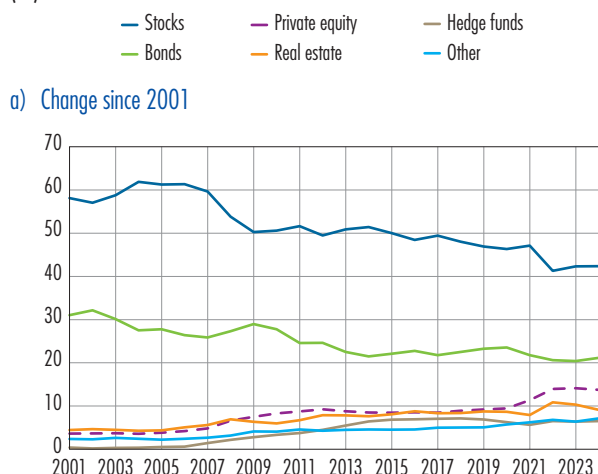
C1 Retirement savings in the United States

(USD trillions)

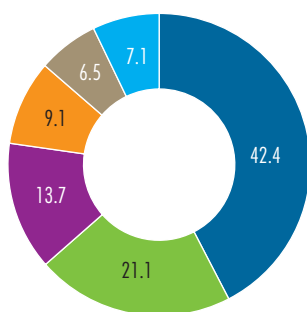


Source: Investment Company Institute.

C2 Asset allocation of US state and local government pension plans (%)



b) Breakdown in 2024



Source: Public Plans Data (PPD) from the Center for Retirement Research at Boston College (CRR).

Note: Fiscal years.

2 What rules are in place to encourage US pension plans to take risks?

A flexible prudential principle has allowed pension funds to finance firms in unified capital markets

Pension plans define an investment policy to manage the retirement contributions paid in by employees and their employers. The policy has to comply with the prudential rules set by public authorities.

In 1974, to replace the disparate rules adopted by individual states, the US government passed the Employee Retirement Income Security Act (ERISA), setting minimum federal standards for pension plans in private industry.

ERISA notably requires private sector pension plan managers to comply with the “prudent person” rule.

In 1979, the US Department of Labor, which regulates private sector pension plans, gave a flexible interpretation of the principle of prudence, stating that it applied to a fund’s general investment policy rather than to specific asset classes. This gave private pension fund managers considerable latitude in their investments, provided they comply with the two basic requirements of ERISA: (i) the investments are sufficiently diversified (diversification requirement); and (ii) they are made exclusively in the best interests of the plan’s participants and beneficiaries, and with “intelligence” (duty of loyalty).

Although the ERISA regulatory framework only applies to private sector pension plans, state and local government plans also chose to comply with the prudential principle in the 1980s. The principle replaced the legal lists of authorised investments compiled by individual states, which essentially restricted public pension plan investments to US Treasuries and municipal bonds.

The Department of Labor’s flexible interpretation of the principle of prudence in 1979 gave a decisive boost to US venture capital: the size of the market expanded tenfold over the next eight years, from around USD 500 million to nearly USD 5 billion, with pension plans accounting for close to 50% of this new investment (Gompers, 1994).

The 1996 federal securities reform also spurred a rise in private equity and venture capital investment by pension plans. By unifying US capital markets, this reform made it easier for private equity funds, venture capital funds and young start-ups to raise money from pension plans located outside their home state.

State and local government pension plans benefit from an accounting incentive to invest in venture capital and private equity

Defined benefit pension plans are required to pay a certain level of pension benefits to their beneficiaries. Their liabilities must therefore reflect the amounts needed to cover current pension payments, and the value of the

BOX

How the United States unified its private equity and venture capital markets: a historical turning point with the 1996 National Securities Markets Improvement Act

Since the Great Depression of the 1930s, the United States has been engaged in a long-standing effort to unify its capital markets. Up until 1996, American capital markets were fragmented by the duality of US securities law, which distinguishes between federal law and the laws of the 50 states of the union (known as blue sky laws). A Boston-based start-up that wanted to raise funds from investors in New York, Texas, California or Georgia, had to comply with the securities laws in each of these states.

This fragmentation was particularly detrimental to start-ups at a late stage of development. While early-stage start-ups can generally raise sufficient funds from a small circle of investors, late-stage start-ups often need a broader range of investors based in different states.

The adoption of the 1996 National Securities Markets Improvement Act (NSMIA) put an end to this fragmentation, and created a truly national venture capital market to finance innovative start-ups at all stages of their growth. Since the NSMIA's enactment, equity securities issued under federal law¹ by start-ups or private equity funds (including venture capital funds) are statutorily exempt from individual state laws. This means issuers (start-ups and private equity funds) no longer have to comply with rules in the state where their investors are resident, giving them greater access to investors – especially pension plans – outside their home state (Ewens and Farre-Mensa, 2020).

The underdevelopment of the European venture capital market has been identified as one of the causes of Europe's productivity gap with the United States (Beau, 2025; Villeroy de Galhau, 2025a). The historical turning point that came with the NSMIA can serve as a benchmark for Europe; rather than seeking to harmonise national rules, the law created a parallel path that circumvents state regulations. The approach is similar to that underlying the proposal for a European 28th regime to create a Savings and Investments Union (Letta, 2024; Villeroy de Galhau, 2025b).

¹ Those that are exempt from having to register with the Securities and Exchange Commission under certain rules (notably Rule 506 of Regulation D).

pension rights accrued by future retirees. Estimates of these amounts are known as **technical provisions** in Europe and are calculated by giving a present value to very long-term pension commitments. To calculate the present value of a sum to be paid in the future, the payment flows are divided by a rate known as the **discount rate**:

- Future payment flows for accrued pension benefits depend on actuarial assumptions, i.e. economic assumptions (such as future inflation and the rate of wage growth) and demographic assumptions (such as the retirement age and mortality tables).
- The present (or discounted) value of these promised pension benefits depends on the discount rate: the higher the rate, the lower the value.

As a general rule, the discount rate must be prudent, i.e. low enough to ensure future pension liabilities are not understated. It is often based on a risk-free rate (sovereign bond yields or interest rate swap rates) or on the yield on high quality corporate bonds. However, in the United States, public pension plans are subject to a **special accounting rule** set by the Government Accounting Standards Board. This standard allows state and local

C3 Simplified economic balance sheet of a defined benefit pension plan

Annual payments of USD 100 to beneficiaries over 20 years

Discount rate of 3%			Discount rate of 6%		
ASSETS	LIABILITIES		ASSETS	LIABILITIES	
Asset portfolio USD 1,600	Discounted value of pension liabilities USD 1,500		Asset portfolio USD 1,600	Discounted value of pension liabilities USD 1,150	
	Solvency margin USD 100			Solvency margin USD 450	

Source: The Banque de France's representative office in New York.

Interpretation: In this simplified example, a defined benefit pension plan has to pay an annual pension of USD 100 to each of its beneficiaries for 20 years. The lower the discount rate used, the higher the present value of this liability (around USD 1,500 with a discount rate of 3%, compared with USD 1,150 for a discount rate of 6%). Using a higher discount rate gives the fund a bigger funding surplus (solvency margin).

government plans to discount their future liabilities at the expected rate of return rather than a risk-free rate or corporate bond yields. Since a higher discount rate results in lower actuarial liabilities, this rule allows pension plans to improve their solvency, which measures whether they hold sufficient assets to cover their pension liabilities (technical provisions; see Chart 3).

Returns on private equity investments (including venture capital) are generally higher than those on other asset classes (see Chart 4). **Public sector** (state and local

government) pension plans therefore have an incentive to invest more in private equity, as it can help them to boost the average return on their portfolio and report lower liabilities. In contrast, US **private sector** defined benefit plans have to discount their future liabilities at high-quality corporate bond yields and not at the expected return on their assets. This difference in accounting treatment partly explains why public pension plans have historically pursued riskier investment strategies than private sector plans (Norcross and Briggs, 2010).

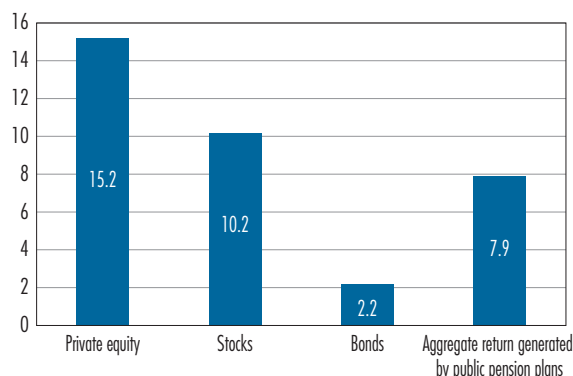
State and local government pension plans are not subject to a solvency requirement

The **solvency** of a pension plan is measured by comparing the value of its assets to that of its liabilities; the ratio between the two values shows how well the plan is funded (funding ratio). A funding ratio of over 100% means the plan has sufficient assets to guarantee the payment of all accrued pension benefits, provided its economic and demographic (actuarial) assumptions hold true in the future.

For a **defined contribution plan**, the funding ratio is always equal to 100%, as the employer does not guarantee the future level of pension payments – it only promises to pay each retiree the cumulative total of their contributions, and the gains or losses on their investment. Conversely, in a **defined benefit plan**, the pension payments promised by

C4 Median annual rate of return generated by US state and local government pension plans over the period 2013-2023

(%)



Source: Public Plans Data (PPD) from the Center for Retirement Research at Boston College (CRR).

the employer may turn out to be too high relative to the contributions paid in, the return on the plan's investments or demographic trends among its beneficiaries. For example, if life expectancy increases in a particular state and public sector workers in that state (or local authority) get older and decline in number, there will be fewer people paying into the pension plan, but it will have to pay out benefits to a growing number of retirees for a longer duration. In this case, the plan's funding ratio may be less than 100%.

There are almost no regulatory solvency requirements in the United States. Only **private sector** defined benefit pension plans are subject to a form of solvency rule, whereby the value of their assets must be at least equal to their pension liabilities (minimum funding requirements). US law requires firms to make up any funding deficits¹ within seven years, for example by making exceptional top-up contributions over several years.

In the event of a sharp fall in the value of their investments, private sector defined benefit plans may find themselves temporarily underfunded, forcing firms to make additional contributions to comply with their regulatory solvency requirements. Consequently, managers of these funds may prefer to invest a smaller portion of their assets in volatile assets such as stocks, private equity and venture capital, to limit their risk of a funding shortfall.

Regulatory solvency requirements do not apply to **public sector** defined benefit plans, so the value of their assets can be lower than that of their actuarial liabilities. At the end of 2024, the average funding ratio of the 100 largest public pension plans stood at around 80%, and some states (Connecticut, Illinois, Kentucky, Mississippi and New Jersey) even had funding ratios of less than 60%.

When a **public sector** defined benefit pension plan is underfunded, the value of its assets is lower than that of its pension liabilities. The shortfall constitutes a debt² owed by the state or local government, since they are obliged, as public sector employers, to pay a certain level of pension benefits, and will have to top up their pension

plans if their asset portfolios do not suffice. Public pension plans therefore benefit from an implicit guarantee from the public sector in the United States.

Europe has stricter solvency rules:

- The value of pension liabilities (technical provisions) is calculated using **risk-free rates** (sovereign bond yields or swap rates) or **regulatory rates**, which are generally lower than the expected rate of return on funds' investments.
- European defined benefit pension plans (which are covered by the directive on occupational retirement institutions) are subject to a capital requirement known as **the required solvency margin**: they are not only obliged to maintain sufficient assets to meet their future pension liabilities, but must also have additional assets (a capital "buffer"). In the Netherlands, defined benefit pension plans are even subject to capital requirements based on the risk exposure of their investments: the higher the risk of capital loss on an investment (listed shares or private equity), the bigger the capital buffer that must be maintained (Boon et al., 2018; Jansen et al., 2024).

✱✱

Institutional investors' policy regarding private equity and venture capital is largely determined by their investment horizon (as suggested by a comparison between US pension plans, insurers and university endowment funds – see Appendix 2). In this respect, the "patient" capital contained in pension plans is particularly suited to investing in business growth. However, in the United States, regulation was still needed to encourage plans to adopt this approach. For the past 40 years, US state and local government pension plans have benefited from regulatory risk-taking incentives to encourage them to provide massive amounts of equity capital to US firms, including those that are unlisted. Building on this example, American financial industry participants are now urging the government to take this to its logical conclusion, by allowing individual retirement accounts to invest in private equity (see Appendix 3).

¹ A shortfall in the value of pension assets relative to the discounted value of pension liabilities constitutes a debt and has to be recorded in the firm's balance sheet.

² However, under US accounting standards, this debt is not included in US government debt.

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Appendix 1

Venture capital and private equity: what's the difference?

Private equity is a third-party asset management service that consists in acquiring equity stakes in unlisted firms and holding them over the medium to long term (between 3 and 15 years). It mainly takes three forms:

- **Venture capital** which consists in acquiring equity stakes in innovative or high-growth potential start-ups;
- **Growth capital** which finances new phases of expansion in more mature firms;
- **Leveraged buyouts**, where significant leverage is used to finance mature firms offering opportunities for restructuring or growth, with a view to selling them on for a profit.

Although venture capital is a sub-segment of private equity, it is often regarded as an investment category of its own. At the end of 2023, private equity assets under management exceeded USD 4.5 trillion, with venture capital making up more than USD 1.2 trillion of this amount.

Venture capital and private equity funds generally take the form of limited partnerships, where the shares are subscribed by:

- **Limited partners**: public and private pension plans, sovereign funds, US university endowment funds, asset managers, insurers and high net worth individuals, who invest capital that is locked in for the duration of the fund. Defined benefit pension plans, especially those sponsored by states and local governments, make up the biggest category of limited partners in the United States.
- **General partners**, to whom the limited partners delegate management of the funds.

Appendix 2

How do public sector pension plans compare with other major US institutional investors?

Insurers invest far less in private equity than state and local government pension plans

In the United States, **insurers** manage a smaller investment portfolio than pension plans. At the end of 2023, their investments totalled USD 8.5 trillion, or about 30% of US GDP. Only 2% of this was in private equity (including venture capital; NAIC, 2025) – nearly seven times less than the amount invested by state and local government pension plans.

Private equity and venture capital investments are generally locked up for around a decade, making them ill-suited to insurers' business models and liquidity constraints (e.g. redemption risk and need for stable income to pay regular dividends to shareholders). Under the US solvency regime, insurers must maintain sufficient capital to cover their portfolio investment risk. The capital charges on private equity and venture capital fund units are set at around 24% and 20% of the investment amount for life and non-life insurers respectively. While these charges are often lower in absolute terms than in Europe (where insurers are subject to Solvency II), they are far higher than those applied to US debt instruments, since high-quality bonds generally carry capital charges of less than 1%.

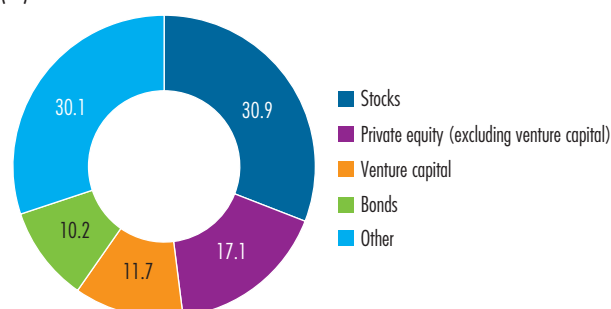
US insurers thus have a greater incentive to finance private equity funds using debt instruments than by subscribing to fund units. This **debt financing** can take two forms: (i) insurers can grant credit facilities to private equity funds, guaranteed against the net asset value of the fund (net asset value facility); or (ii) they can purchase debt securities created through the securitisation of private equity fund units (collateralised fund obligations or CFOs), which carry a lower capital charge.

Compared to state and local government pension plans, university endowment funds are the only US investors that allocate a larger share of their assets to private equity

US universities receive irrevocable, unrestricted donations from alumni, firms and foundations, which can be placed in an **endowment fund**. The fund accumulates these donations and invests them in the markets. The income generated on the investments is then used by the university to cover all or part of its running costs. Endowment funds have a very long, almost perpetual investment horizon as universities are generally not allowed to spend the capital.

At the end of 2024, US university endowment funds managed nearly USD 900 billion in assets. While they are smaller than state and local government pension plans, they invest nearly twice as big a share of their assets in private equity and venture capital: nearly 30% on average, of which 17% is in private equity (excluding venture capital) and close to 12% in venture capital (see chart below). These investments enable endowment funds to generate unrivalled rates of return on financial markets and are a natural extension of US universities' innovation ecosystem (fundamental research, patents, start-up incubators, etc.).

Average asset allocation of US university endowment funds, 2024 fiscal year (%)



Source: National Association of College and University Business Officers (NABUCO).

Appendix 3

Retirement savings and the democratisation of private equity: an ongoing debate in the United States

Private equity and venture capital have typically been reserved for institutional investors. The minimum investment amount is generally very high (several million dollars). Moreover, unlike defined benefit plans, defined contribution plans, such as 401(k)s, have remained on the sidelines of the shift towards private equity and venture capital. In these latter plans, the employer's role is limited to selecting a conservative set of eligible investments. The employees themselves, i.e. individuals, are responsible for deciding how to allocate their savings across the different vehicles and therefore shoulder all the risk. Consequently, US employers have always been reluctant to include private equity and venture capital funds with low liquidity and a high risk of capital loss in their 401(k)s, for fear employees will accuse them of failing in their fiduciary duty.

To democratise this asset class and encourage employers to make the leap, certain financial players are calling for the Department of Labor to explicitly confirm that including private equity and venture capital in 401(k) plans is not a violation of employers' fiduciary duty. For example, in his annual letter to investors on 31 March 2025, Larry Fink, Chairman of BlackRock, urged authorities to break down the "high walls" of private markets by including them as an investment option for participants' individual 401(k) accounts. Private markets include all major unlisted asset classes: private equity (including venture capital), private credit, real estate and infrastructure.

In response to the financial industry's demands, President Trump signed an executive order on 7 August 2025 directing the Department of Labor to relax its rules, in order to allow 401(k)s to invest more widely in private equity.

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