

## UK public service occupational pension schemes

Why they should, and how they can, become fully-funded.

### Introduction

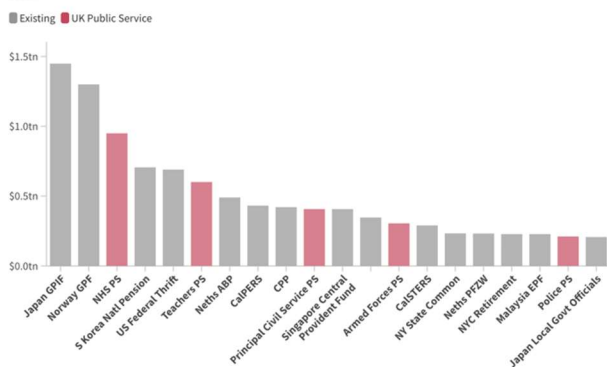
At the last official reckoning in 2021, the value of UK public service pension scheme unfunded liabilities eclipsed 100 per cent of GDP. At the time, this was greater than the official estimate of the entire private sector pension system's asset base. It was greater even than the stock of outstanding public debt. Since then, the scale of these liabilities against the benchmarks has receded thanks to higher bond yields and copious public debt issuance. But the liabilities are still huge.

Local government workers, MPs, and those working for the Bank of England see their monthly pension contributions invested in assets like equities, bonds and infrastructure. Almost all other government employees don't. As such, the Treasury's largest cohort of creditors include nurses, teachers, civil servants and soldiers. Investing public employee pension contributions in assets could boost investment in the UK and generate for the exchequer tens or even hundreds of billions in fiscal savings.

### Large and sustainable:

Public sector occupational pension schemes are backed by explicit government guarantees. The largest five of these schemes easily feature in the top twenty pension schemes globally by asset value, even if their asset is non-tradable.

Largest 20 Retirement Schemes, Global  
2022



Source: WGA 2020-21, P&O/Online/Thinking Ahead Institute 2023

Despite their size, the Office for Budget Responsibility (OBR) [projects](#) public service pension schemes to be utterly sustainable.

This is partly due to [reforms recommended](#) by the Independent Public Service Pensions Commission, chaired by Lord Hutton. Following the 2011 Hutton Review, unions and government settled on an arrangement that reduced the path of liability growth, and capped their cost. This culminated in the Public Service Pensions Act 2013 that switched indexation from the Retail Price Index to the Consumer Price Index, increased member contribution rates, and moved from final salary to career average. It also rebalanced contributions

between members and taxpayers and introduced the so-called employer [cost cap mechanism](#), designed to “[backstop protection](#) to the taxpayer”. The Pension Policy Institute [estimates](#) that these reforms collectively reduced the value of pensions by 15%. HM Treasury [estimates](#) that the reforms will save taxpayers around £400bn over fifty years.

Projections of their fiscal sustainability are also due to the way that it is measured. At a Total Managed Expenditure (TME) level public service pensions are accounted for on a net cashflow basis, although they are accounted for on an accruals basis when it comes to Department Expenditure Limits (DEL) and Annual Managed Expenditures (AME). The OBR projects contributions to come to just over £46 billion in 2022-23, requiring only £3.6 billion of additional funding from HM Treasury to meet the £50 billion that is forecast to be paid out. As long as workers are paying in, schemes can afford to pay retirees with minimal additional support.

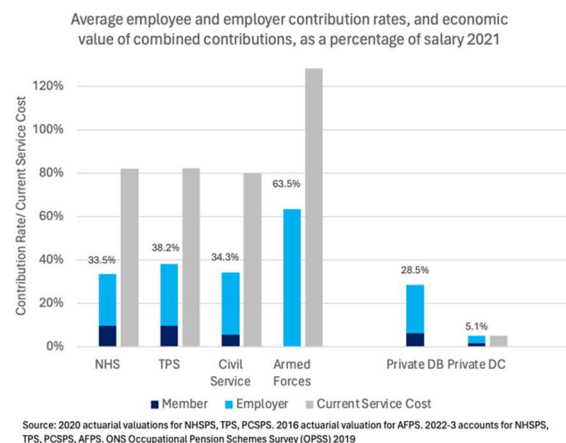
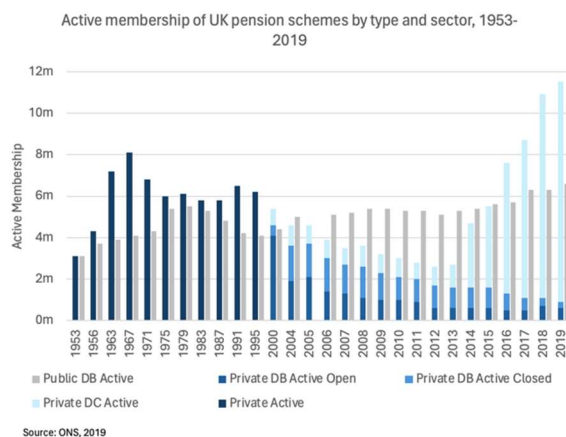
## The Case for Change

Despite their fiscal sustainability there is a strong case to move them to become fully-funded. The case has three dimensions: political, fiscal, and macroeconomic.

### The political case:

There are over six million active members of public service pension schemes in Britain today. For recipients, an inflation-linked and government-guaranteed defined benefit pension can hardly be improved upon. But without reform the political sustainability of these benefits is in question.

Until the turn of the millennium active membership of private defined benefit schemes eclipsed that of public schemes. But following the widescale replacement of private defined benefit schemes with cheaper and less secure defined contribution schemes, the defined benefit nature of public pensions has become increasingly exceptional, and [come under regular attack](#) for their opacity and cost.



Public service pension accounting is opaque. Wildly differing valuations of public service pension liabilities are issued by different branches of government, or sometimes even from the same branch.<sup>1</sup> The costs of public service schemes go unitemised in Budgets and are reported in Total Managed Expenditure only on a cashflow, rather than accruals, basis.

As to their cost, public service schemes do look affordable following Hutton reforms. But stripped of accounting opacity, they still look expensive. As the [OECD notes](#), “one of the policy challenges faced by public sector pension schemes is that they tend to offer relatively generous DB pension promises, when compared to private sector arrangements.”

Comparisons with private sector contribution rates are complicated by the multiple discount rates used by public service schemes. Individual unfunded schemes report both: a) employee and employer cash contributions, and; b) total current service costs (the present value of pension benefits being purchased according to international accounting standards used in the private sector). Current service costs are more than twice the sum of member and employer contributions in the four largest public schemes.

Funding public service pensions would simplify accounting and, if the Local Government Pension Scheme (LGPS) example is followed, reduce their cost. LGPS is backed by assets. Its assets, benefits, and

contributions are valued in line with practices applied to schemes across the private sector. While the scheme’s governance and management arrangements are overly-Byzantine, it is [over-funded](#) from an actuarial perspective. Moving central government pension schemes towards being fully-funded could enhance their political sustainability.

<sup>1</sup> Compare, for example, the valuation presented in the Whole of Government Accounts to valuations using SCAPE, and also to valuations found in departmental scheme report and accounts.

## The fiscal case

Unfunded public service pensions are a large, integral, and almost entirely unscrutinised form of public sector financing.

The Office of Budget Responsibility (OBR) report that employer and employee contributions to the largest seven public service pension schemes totalled £43.5 billion in fiscal year 2021-22, and are set to rise to over £59 billion by fiscal year 2027-28. These contributions are a form of borrowing. Most members take repayment in retirement.

The borrowing rate used by the government is the SCAPE discount rate. As the Treasury [explains](#):

*In unfunded public service pension schemes employer contribution rates are determined using a process called 'Superannuation Contributions Adjusted for Past Experience' (SCAPE). As part of SCAPE, a discount rate is applied to each scheme's expected future pension payments, which extend decades into the future, so that the cost of pension promises being built up can be expressed as a present-day cost. This discount rate is called the SCAPE discount rate and is set by HM Treasury using a prescribed methodology.*

As such, the SCAPE discount rate — in the context of an unfunded scheme — is the promised rate of return to members on contributions made by them and their employers. The lower the rate, the lower the effective cost of borrow to the Treasury (that sits behind public service pensions as guarantor). And given that SCAPE is used to establish employer contributions, the lower the rate, the [higher the employer contribution](#).



Since being introduced in 2011, the SCAPE discount rate has averaged 3.8% more than market forms of finance. As such, the Treasury has been borrowing from public service workers on very expensive terms, although the premium has declined in the context of the global bond rout of 2022-23. These off-market borrowing costs are recognised [only slowly](#) through a non-cash item in departmental resource accounts.

Each percentage point saved on financing new gross borrowings from public sector workers will save £125 billion over the next twenty years.

In almost every scenario, it is reasonable to project substantial long-run fiscal gains from a move to fully-funded schemes.

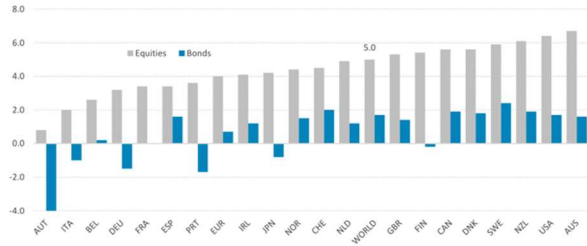
According to the OBR, HM Treasury is on track to borrow £366 billion from Public Service Pension Schemes between 2021-2028, with liabilities compounding at the SCAPE rate of {Inflation + 1.7%}. If recent markets are a good guide, this money could be borrowed around 0.8% more cheaply from bond markets. Even holding contributions flat in real terms, a switch in financing could save the Exchequer a cumulative £145bn over a twenty-year horizon.<sup>2</sup> But a move to bond market financing does not alter ultimate Treasury liabilities to the Schemes.

For fiscal savings to be made, HM Treasury must both switch its financing source from Public Service Pension Schemes to bond markets, and ringfence pension contributions so that they can grow at a pace of least inflation + 1.7%.

Compound long-run returns of UK equities have exceeded the cost of government debt by almost 4% in the UK over the past century. Comparable excess returns have been [common across international equity markets](#), and returns from infrastructure investment and private equity [appear to have been similar](#).

<sup>2</sup> The cumulative compound liability of borrowing the OBR's projected employer plus employee public service pension contributions out to 2027-28 and then holding steady the nominal value of these contributions in real terms thereafter, compounds a liability of £1.89 trillion by 2041 assuming a stable SCAPE rate of 1.7% and inflation of 2% per annum. Borrowing these funds in the market at a real market funding rate of 0.9% would compound a liability of c£1.75 trillion. The difference between these numbers is £145 billion.

Real annualised returns on equities and bonds in different markets 1900 to 2022



Source: Elroy Dimson, Paul Marsh, and Mike Staunton, DMS database 2023, Morningstar

With the opportunity for higher returns comes investment risk – the risk that short-run returns will be poor or negative. The government balance sheet is well-positioned to be able to absorb such short-run risks.

We outline a variety of scenarios in the table below. Projected cumulative fiscal savings depend upon both the cost of market finance (horizontal) and the real rate of return achieved on pension contributions

(vertical). If HM Treasury can borrow only at real market rates of 1.7%, and investments yield a real return of 1.7% per annum, there would be no fiscal gain. But ringfencing pension contributions and financing in the market at a real funding rate of 0.9%, would deliver fiscal gains – potentially very sizeable ones – if assets deliver stronger returns than gilts.

*Cumulative Fiscal Profit/Loss achieved by 2041 for various real rates of return on market assets, £ billion*

	Market Real Funding Rate of:		
	1.70%	0.90%	0.50%
1% Real Returns	-127	17	84
1.7% Real Returns	0	145	212
4% Real Returns	505	650	717

## The macroeconomic case

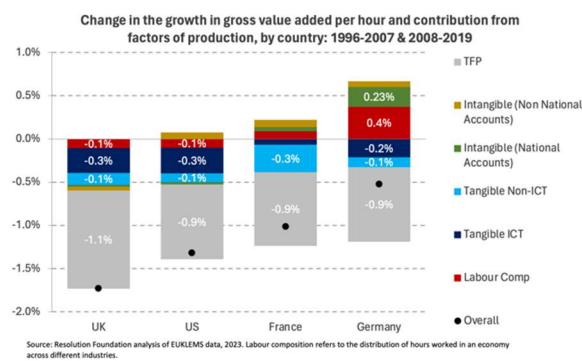
Beyond any fiscal and political case, there is a strong macroeconomic case for shifting public service pensions towards being fully-funded. Doing so could help boost economic productivity, and address balance of payments fragilities.

While [Canada](#) had an eye to intergenerational equity when deciding to shift from its unfunded national system towards an asset-backed one in the 1990s, [Denmark](#) and [Australia](#) embarked in the 1980s on funding their pension systems specifically as a means of addressing macroeconomic fragilities. The UK has an opportunity to chart a similar course with its public service system.

### Productivity:

The UK has a productivity growth problem, and this appears to stem in part from a lack of private investment.

Investment is both cause and effect of improvements in TFP: new processes and ideas that TFP embodies are often implemented with new capital, which is in turn purchased and installed to make these processes



possible. The contribution from capital investment – across both tangible and intangible assets – has been particularly large in the UK when compared to major peers.

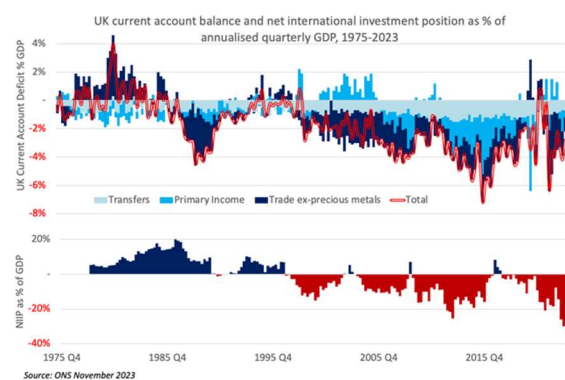
There are a host of possible reasons for weak investment. The policy environment has not exactly been stable. But when firms have invested for growth, this has – in aggregate – been rewarded. Shifting public service pensions to an asset-backed framework would increase resources available for private investment, which could in turn enhance the capital stock and finance the transition to net zero.

### Balance of Payments:

Often conflated with a simple trade balance, a current account balance is the sum of:

- the trade balance – import minus export values;
- [transfers](#) – typically international or military aid and net transfers to EU institutions, and;
- the primary income balance – the net flow of profits, interest and dividends from investments in other countries minus those remitted abroad.

The UK has run an annual current account deficit for forty years. Since 2009 this has averaged 3.4% of GDP, around 0.9% of GDP larger than the decade prior to the global financial crisis. Moreover, it's net international investment position – the sum of external assets and liabilities – is deeply in the red.



Current account deficits in themselves are not bad; they can arise for [good or bad reasons](#). But regardless of causation, they are [understood](#) as one of the most trenchant early warning signs of financial instability.

More than all the growth in the UK's current account deficit since 2008 is accounted for by its primary income balance swinging from surplus to deficit. The revenue on overseas investments is now smaller than the cost of servicing foreigners' UK investments.

What has this got to do with funding public service pensions? Well, if UK households behave in

accordance with developed market peers, transitioning from unfunded to asset-backed public service pensions could boost national savings. This could reduce the current account deficit and improve the net international investment position, seeding structural improvements in the primary balance over the long-term.

### *Case Study: Denmark*

In the 1980s Denmark found itself running chronic current account deficits, a worsening net international investment position, and uncomfortably high levels of inflation.

In its tripartite [Fælleserklæringen](#) (Joint Declaration) of 1987 the government brought together unions and employers to introduce occupational pension schemes. Pensions became a policy initiative to address Denmark's macroeconomic ills.

The Declaration contained the [explicit goal](#) of altering Denmark's international balance of payments, raising savings, impeding consumption, and shrinking the current account deficit. Unions [traded](#) wage demands for pensions and promises of more employment.

Since the reforms Denmark's current account has recorded a permanent surplus, and its large foreign debt has transformed into a [positive](#) net international investment position of 45-50 per cent of GDP. The Danish central bank points to pension reforms as the [primary cause](#) of this swing. And the European Commission [notes](#) that income from investment abroad, flowing from the positive net international investment position has come to contribute as much to the surplus as the trade in goods.

### *Macroeconomic costs*

Funding public service pensions is not a costless exercise. Saving more means consuming less today.

That Canada, Denmark and Australia's radical pension reforms occurred during inflationary times is no coincidence. Each involved a step-change in the level of national savings. Making the transition to a world of higher savings would run counter to policy goals in an environment threatened by deflation. By contrast, with central bank policy rates far from the effective lower bound and the policy focus having shifted to squeezing out persistent inflation, the cost of transition can be off-set by monetary policy action, if necessary.

## The Path to Change

In 1989 the Ontario Teachers' Pension Plan was, like the UK's public service schemes today, backed by [non-tradable government guarantees](#) of payment. Today it is a globally renowned investor in infrastructure and real assets with a portfolio worth a quarter of a trillion Canadian dollars.

The evolution of the Canadian pension system at both the provincial and national level offers lessons for UK public service schemes as they move to become fully-funded. Canadian provincial public service pensions began their transition at the end of the 1980s. They have evolved into a distinctive "Canadian model" that integrates independent governance, professional in-house investment management, substantial scale, and comprehensive geographic and asset-class diversification.

The shift was preceded by three expert reports, commissioned by the Ontario government: the Rowan Report on provincial public sector pensions, the Coward Report on financing teacher and civil servant pensions, and the Slater report which synthesized the two previous reports and produced recommendations for a path forward. These reports collectively set out a clear path for a multi-phase reform process across a number of workstreams. This is outlined by the World Bank in the table below.

### A four-phase framework for the evolution of Canadian pension organisations<sup>3</sup>

	1) Pre-reform entity	2) A solid foundation	3) Independent, professional entity with strong governance	4) Mature, sophisticated entity
Governance	<ul style="list-style-type: none"> <li>Part of government - no real independence or arm's length oversight</li> </ul>	<ul style="list-style-type: none"> <li>Reform strategy in place</li> <li>Stakeholder buy-in to reform</li> <li>Earning trust of government &amp; private sector</li> </ul>	<ul style="list-style-type: none"> <li>Independent governance</li> </ul>	<ul style="list-style-type: none"> <li>Mature independent governance model</li> </ul>
People & organisation	<ul style="list-style-type: none"> <li>Low expertise or experience in external best practice</li> <li>Limited procurement skills</li> </ul>	<ul style="list-style-type: none"> <li>Developing in-house staff</li> <li>External hires to fill gaps</li> <li>Developing skills for external outsourcing</li> </ul>	<ul style="list-style-type: none"> <li>Ability to attract qualified professionals</li> <li>Strong programme to develop internal talent</li> </ul>	<ul style="list-style-type: none"> <li>Ability to attract global top talent</li> <li>Ability to develop top quality internal expertise</li> </ul>
Investment	<ul style="list-style-type: none"> <li>Little diversification - sometimes 100% in non-marketable government debentures &amp; 100% domestic</li> </ul>	<ul style="list-style-type: none"> <li>Begin to diversify investment</li> <li>Begin to build investment expertise</li> </ul>	<ul style="list-style-type: none"> <li>Diversified investments</li> <li>Increasingly competent in-house investment capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Highly-diversified investments</li> <li>Sophisticated in-house investment teams</li> </ul>
Administration	<ul style="list-style-type: none"> <li>Inefficient &amp; ineffective plan administration</li> <li>Significant errors</li> <li>Poor member service</li> </ul>	<ul style="list-style-type: none"> <li>Major administrative errors corrected</li> <li>Investment in systems to reduce costs and improve service</li> </ul>	<ul style="list-style-type: none"> <li>Competent plan administration</li> </ul>	<ul style="list-style-type: none"> <li>Professional plan administration</li> <li>Modern technology</li> <li>Strong client service</li> </ul>
Plan design & funding	<ul style="list-style-type: none"> <li>Pay-as-you-go or limited funding</li> <li>Little clarity on liabilities</li> </ul>	<ul style="list-style-type: none"> <li>Realistic understanding of liabilities</li> <li>Active dialogue on plan sustainability</li> </ul>	<ul style="list-style-type: none"> <li>Improved funding</li> <li>Realistic understanding of assets and liabilities</li> <li>Sustainable funding target</li> </ul>	<ul style="list-style-type: none"> <li>Assets &amp; liabilities well-balanced</li> <li>Funding is sustainable</li> </ul>
Regulation & public policy	<ul style="list-style-type: none"> <li>Outdated or legacy legislation</li> <li>Strict investment limits</li> <li>Little political will for reform</li> </ul>	<ul style="list-style-type: none"> <li>Updated legislation</li> <li>Some investment freedom</li> </ul>	<ul style="list-style-type: none"> <li>Modern legislative framework</li> <li>Limited investment restrictions</li> </ul>	<ul style="list-style-type: none"> <li>Proactive improvements in legislation &amp; regulation</li> <li>No investment limits</li> </ul>

Individual Canadian public plans took different routes to diversifying away from domestic fixed income.

Restructuring at the Ontario Teachers' Pension Plan (OTPP) began in 1990. Until legislation was changed at the end of 1989, all monies not required to pay benefits each year had to be invested in non-marketable Province of Ontario debentures and deposits. This [suited neither](#) the pension plans nor the government. For the pension plan this meant its assets consisted entirely of non-tradable government IOUs. For the Ontario

<sup>3</sup> Figure x is taken from The World Bank. 2018. The evolution of the Canadian Model. <https://documents1.worldbank.org/curated/en/780721510639698502/pdf/121375-The-Evolution-of-the-Canadian-Pension-Model-All-Pages-Final-Low-Res-9-10-2018.pdf>

government this meant being forced to borrow on expensive terms and at tenures not of its choosing. The analogy to British public service schemes today is compelling.

From January 1990, OTPP [became free](#) to invest their net cash flow – contributions, interest, maturing debentures and special payments in respect of the past deficits, less benefits paid and administrative costs – in market investments. They initially built-up equity exposure using derivatives. From 1991 they began private equity and infrastructure investments. In 2000 they acquired a real estate subsidiary. And from 2007 they began opening international investment offices. As of June 2023 it had [net assets](#) of C\$250 billion and had achieved an annualised return of 9.4% since 1990.

By contrast, Healthcare of Ontario Pension Plan (HOOPP) [used derivatives](#) to obtain exposure to foreign markets without triggering caps on foreign investment rules. And in the aftermath of the dotcom crash, it started to hedge moves in interest rates and inflation in synthetic markets and as part of its liability-driven investment strategy.

At the national level the Canadian Pension Plan (CPP) was set up as a largely Pay-As-You-Go (PAYG) plan in 1966. But following the transformation of public service pensions and an alarming report from its actuary in 1993 that it would soon cease to be fit for purpose, it began in 1997 its [own transition](#) towards becoming a fully-funded entity. Mandatory contributions increased from 3.6% to around 10% of salary, split between employees and employers, and it provides an earnings-based pension to Canadians, targeting a replacement rate of around 33% up to C\$55,000 (rising to C\$83,000 in 2025).

While UK public service pensions differ in important ways, the Canadian experience offers useful lessons as to how to build consensus for systemic change, sequence reform, and execute transformation from unfunded plans into best-in-class fully-funded institutions.

### ***Likely Pushbacks***

While there are strong reasons to start the shift to fully-funding public service pensions, any moves to do so will likely generate pushback. We see five main strands of resistance.

#### *Impact on government debt*

At the time of the last Whole of Government Accounts report in 2020/21, public service pension liabilities stood at around 105% of GDP. They exceeded on-balance sheet public sector net debt, excluding public sector banks, which [stood at](#) around 85%.

Latest figures show public sector net debt figures, excluding public sector banks, has grown to around 98% of GDP. But looking at the reports and accounts of the largest public service schemes, we estimate that the rise in bond yields has collapsed public service pension liabilities from 105% of GDP in 2020/21 to just over 50% of GDP in 2022/23. Still, politicians may fear that a move to divert employer and employee contributions to invest in market assets and productive capital will be to slowly move public service schemes on-balance sheet, and to do so will increase issuance costs.

It is hard to calibrate the impact on borrowing costs of any shift by HM Treasury to borrow more from the bond markets. Alarmists can always assert that an additional penny of bond issuance will destroy Britain's credit. But there is little evidence that implementing a plan that would deliver sizeable fiscal savings, provide the opportunity to boost investment and growth, and reduce international macroeconomic fragilities would be ceased upon as evidence of recklessness by bond markets. This was certainly not the case for when either Canada, Sweden or Denmark made moves to better asset-back their pension systems.

#### *Increase in risk for the government balance sheet*

Over the long-run private assets tend to deliver stronger returns for investors than government bonds, but over shorter periods this is certainly not the case. In sourcing HM Treasury finance increasingly from the market, and allowing employer and employee contributions to public service schemes to be invested into assets, government would assume additional financial market risk.

But government has market risk today in the form of the c£400bn of assets that back the LGPS scheme. This is not seen as a source of risk: assets may fall in value, but they are seen as better than no assets at all. And



governments around the world are not only comfortable with such risk, but embrace it, when building sovereign wealth funds.

*The headwind this would generate for domestic consumption*

There are several routes by which unfunded schemes can move to become funded. Some route involves a higher national savings rate. Rising savings rates can mean more investment, and a higher potential economic growth rate. But more jam tomorrow can mean less jam today.

Purposefully raising the national savings rate would be bold amidst widespread disinflation or deflation, and with monetary policy rates close to their lower bound. But with inflation still elevated and central bank policy rates far from the effective lower bound, unwelcome costs of transition could be off-set by monetary policy action.

*The pointlessness of asset-backing, other than for financial intermediaries*

Over twenty years ago Lord Eatwell wrote a brilliant [short paper](#) arguing that from a macroeconomic perspective, the choice as to whether to run a pensions system on an unfunded PAYGO basis or an asset-backed basis fundamentally didn't matter.

In PAYGO systems, the state would mediate inter-generational transfers from workers to retirees through the tax system. In asset-backed systems, financial markets would mediate intergenerational transfers through the extraction of rents and profits from workers to retiree-owners. The main difference between the two systems, Eatwell contended, was that asset-backed system threw off hefty fees to the already bloated financial sector.

The argument should be taken seriously. External management can be extremely costly. But Canadian public plans have demonstrated that world-class management across private and public markets can be implemented by professional and low-cost state entities. In the UK several public investment entities – such as the Pension Protection Fund, NEST and the British Patient Capital Fund – operate with strong reputations, albeit on a smaller scale. There is no reason why such experiences cannot be leveraged.

Costs aside, we can see that while there are good academic arguments to be made for PAYGO's equivalence to asset-backing, the fiscal, political, and macroeconomic arguments in favour of asset-backing support this path of reform.

*Funds would become politicised*

The risk of politically-driven malinvestment is serious, and one that sovereign wealth and public pension institutions around the world grapple with. Many institutions have been formerly provided with codes of governance that establish operational independence from policymakers. Such operational independence was central to the 'Canadian Model'.

Despite fears to the contrary, the UK has experience of successfully managing public institutions with large public investment portfolios free of such conflicts, such as the Pension Protection Fund.

## **Conclusion**

The five largest UK schemes rank among the largest pension schemes in the world. Canada's experience shows a path by which they can evolve to become fully funded investment bodies with professional in-house management, investing globally.

The first Canadian provincial public service plans to make the transition were cash-flow positive. This is not generally the case for UK schemes – which, apart from the NHS Pension Scheme – are cashflow negative. Reducing SCAPE would swing all schemes into being cash-flow positive, but only by requiring higher employer contributions.

A big bang approach – committing all new pension contributions to a fresh investment programme, and potentially also allowing schemes to swap their non-marketable guarantees for tradeable government securities, which they could diversify across geographies and asset classes, would be bold.

A more cautious government could test the waters by proceeding first with NHSPS. Over the next four years healthcare workers will contribute over £31 billion into the scheme, with hospitals and other healthcare employers contributing a further £76 billion. We would recommend that the projected £87 billion NHS pension benefits due be funded by some mix of taxes and market borrowing rather than current employee contributions. This would free up £107 billion to be invested. But if even this was too bold, the projected scheme net cash surplus of £21 billion would leave an asset-backed NHSPS with around two-thirds the assets under management of NEST or the Pension Protection Fund, and on track to become a substantial new source of capital for investments and of returns to pensioners and the Treasury.

Today some UK public service schemes are unfunded while others are asset-backed. The Local Government Pension Scheme (LGPS) is a substantial asset-backed public service scheme whose asset-backing has served it well. Leaving other public service pension schemes unfunded is an opportunity missed. They could play a significant role delivering fiscal savings to the taxpayer, to invest at home and abroad, deepen capital markets and to improve the long-term sustainability of public service pensions. The opportunity should be seized.