Institute and Faculty of Actuaries

What would be a sustainable and effective UK pension system for the people?

The Frank Redington Prize

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Executive Summary

In a Nutshell

Redefine the pension system as an institution which support peoples' financial security as they get older. This is enacted by the establishment of a Pensions Committee, responsible for the intelligence of the pension system, and a Pensions Platform to implement a mandatory pillar 1 pension, and act as a platform for future pension-related tools.

Principles of a sustainable pension system

For a pension system to be sustainable, it needs to identify deliver effectively what people want and need. But this is not sufficient – to be a truly sustainable system "for the people", it must play its part in ensuring a healthier society and the environment, which are also necessities for people to live comfortably in retirement. The essay identifies the following principles:

- Identify and find solutions to people and society's actual needs
- Flexibility (1): as people have increasingly fluid working lives, any system also needs to be flexible
- Flexibility (2): a need may arise (or disappear) – the system needs to be flexible enough to identify and add "products" to meet emerging needs. If a function becomes redundant it can easily be stopped and benefits transferred.
- Dealing with legacy: The current closed defined benefits pension schemes of zombie assets are a drain on the UK economy; these assets need to be utilized whilst retaining security of benefits.
- Investment mandates: are central to sustainability. As pensions represent a large proportion of the nation's savings, a key tool to sustainability is the establishment of dual mandates which require social and environmental "returns" along with financial returns. This is justifiable as all pensions have some element of government support and therefore must demonstrate a social benefit.
- Governance: needs to be long-term and stable, but at the same time anticipatory of future trends and needs.
- Holism: pensions and savings cannot be thought of in isolation. They need to be integrated with health, employment and economic development policies, amongst others.
- Ensure inter-generational fairness

How the proposal will work

A pension system is redefined as an institution which support people's financial security as they get older. As well as a traditional pension, this also includes paid income as people are healthy later in life; in this context considerations such as people's health, well-being and having relevant skills are crucial for their financial security. Also crucial is the society in which they live, and hence pension systems must have positive social and environmental benefits.

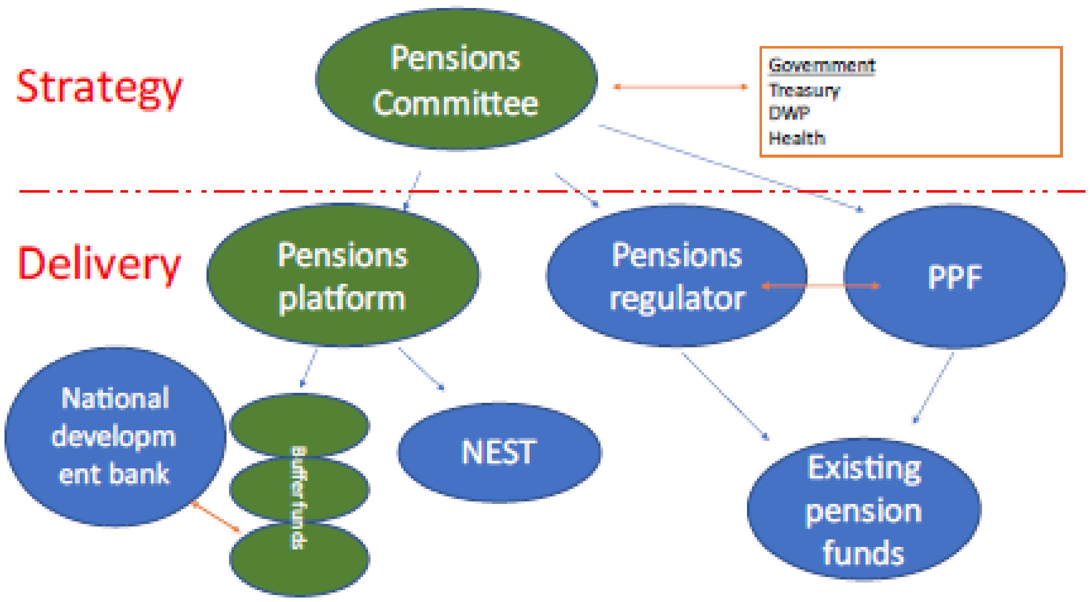
There are large gaps in the current UK pensions system which would make it impossible to deliver a sustainable pensions system for the people, namely:

1. A forward-looking, holistic intelligence: The pension system needs to keep aligned with the needs of people and its purpose, and these change with time as society and the economy change, as well as evaluating systemic and emerging risks, and addressing inter-generational fairness. The future landscape of longevity, peoples' and societies needs crucially depends upon the implications and interactions of current and future trends. This generally falls on central government, but they are not suited to do this task for a number of reasons.

2. A system which can cheaply deliver pensions whilst interacting and shaping private markets; in particular one that can oversee dual (sustainable and financial) mandates and has the flexibility to absorb redundant legacy schemes and start new products as the need arises.

3. Mechanism for crowding-in sustainable investment into the economy from the pension system

The following diagram represents an outline of the proposed system, incorporating existing elements:



Within this schema, the proposed new institutions are:

- ***The Pensions Committee*** would be responsible for the intelligence of the pensions system; that is ensuring that it continues to meet people's needs, both present and future, and taking a holistic view, it oversees long term and systemic risks and ensures that the system contributes to societal well-being, social and environmental sustainability, and considers issues of inter-generational fairness.

- **The Pensions Platform:** This is modelled on the Swedish Pensions Agency to deliver a pillar 1 pension, which in itself is missing from the UK system. Once the Platform is established to accept and administer people's savings for the Pillar 1 pension, and to set specific social/sustainable dual mandates for asset managers and oversee this asset management, it can then be used for other pension products as and when the need arises.

- The pillar 1 pension works as follows: Workers and their employers will be mandated by law to contribute into the new pensions system. Contributors accrue an account equal to their contributions plus interest until they retire, at which time it will be converted to an annuity. The Pensions Platform will be set up to oversee the system.

The contributions are used to pay pensions. However, a proportion of the contributions will be paid into 4 buffer funds. Each one of these funds will have a specific mandate as follows:

- Fund 1 will be invested in climate change solutions
- Fund 2 will be invested in the economic development of poorer regions of the UK
- Fund 3 will be an impact investment fund
- Fund 4 will be invested in sustainable infrastructure

The platform will also establish the following additional products:

1. Long-term care insurance
2. Special provision for contract or self-employed workers
3. Transfer of closed occupational defined benefit pension schemes

National development bank: is required to crowd in the pension money. This would not require a new institution, but repurposing and scaling up the UK Infrastructure Bank.

The Problem

I will begin with a discussion of what problem we are trying to solve.

Pension

A pension is usually thought of as a fund into which an individual, or someone on behalf of the individual contributes during a working life, so that the individual has rights to the fund to support their retirement. This concept of a pension was developed to reflect work patterns in an industrial society which no longer exists, the concept may therefore have to be re-thought, especially as pensions are inherently long-term, over which time work patterns are likely to change further.

As well as delivering pensions to individual beneficiaries at least equal importance must be given to the assets of pensions funds. The assets of the pensions system often make up a large proportion, if not the majority, of the long-term savings of an economy, and hence provide the source of investment into that economy.

System

A system is usually taken to mean the interaction of different parts to work as a whole. A pension system includes a mixture of private savings, occupational pension schemes and state pensions. There may also be a wider ecosystem of other savings, government benefits, medical benefits and networks (such as family and community) which, while not pensions per se, support a person in retirement.

The pensions system is therefore embedded in a number of interacting systems, such as the financial system and the benefits system, which are themselves embedded and interact with the economy, society and government. The human world is embedded and interacts with the natural world.

This proves a boundary problem for this essay as it is not possible to deal with the pensions system in isolation, but it is also not possible to deal with all of the interactions between pensions, the financial system and the economy. I will take a pragmatic view on this, sometimes straying outside a narrowly defined pensions system when relevant to the subject of this essay. The geographic boundary of the UK is somewhat porous as the UK trades with the rest of the world, financial flows are international, and the UK has a high level of inwards and outward migration.

Sustainable

For the purposes of this essay, I am going to define sustainability as the ability of a system to continue indefinitely without collapsing. That is not to say that a system must stay the same – the biological term hysteresis is useful in this context – which is a term for how organisms continually use energy and develop to keep their internal state suitable to maintain life.

There are two aspects of sustainability that I wish to emphasis. Firstly, pensions are long term, a joiner may start contributing in their 20s and maybe still alive and receiving a pension in their 90s, the system has to be functional over that time period. The operating environment will almost certainly change a great deal – for example life expectancies, working patterns, social norms, medical technology, etc – as it has done over the last 70 years. Any sustainable system has to be adaptable enough to deal with changing needs over a long time period. That is not to say that its initial set up will stay the same and be suitable for a long time period, the aim will be for it to be flexible enough to change with the times.

Secondly there is the embeddedness within other systems, and the importance of pensions to the economy, society and indeed the planet. This corresponds with the more widespread use of the term, normally associated with environmental sustainability (often referring to the Bruntland Commission definition of sustainability[1]), or more recently social sustainability.

That pension systems are a major source of investment in the economy is critical for the social and environmental well-being of society, and therefore this aspect needs to be central to the design of a pension system for it to be considered sustainable.

For the People[2]

For the provision of benefits, I will take this as meaning what people actually need and want – not necessarily identical – their savings to deliver, and also the implication must be that it works for nearly all people, not just a select few (often the wealthy, those in regular employment, or older workers).

In relation to the sustainability and asset base of the pension; "for the people" also means that this investment facilitates a society with a high level of well-being. People will have many different views as to what such a society might look like, however there are objective measures on which most people might agree, such as high levels of health, low inequality, personal security, a healthy environment, freedom, fairness and agency of individuals. For want of better criteria, the UN Sustainable Development Goals outline what these objectives might be[3].

[1] in 1987, the United Nations Brundtland Commission defined sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." https://www.un.org/en/academic-impact/sustainability

[2] For the purpose of receiving a pension I will take the UK as a boundary, i.e. people who are at some time in their life working in the UK. However, for the purpose of the asset base, we have to think of all the people who are affected, maybe employed by companies in foreign lands which are owned by UK pensions schemes, or anyone on the planet who is affected by the activities of UK pension fund's investments.

[3] See https://sdgs.un.org/goals

Effective

I take effective to mean delivering to people what they need, and do so with a high level of efficiently, but with low levels of risk, and a system that is resilient. The system should also protect people from taking excessive risk which they may not be able to assess, not have to make decisions which they are not informed enough to make and are protected from being defrauded.

If we take the above elements as an ensemble, for a pension system to be sustainable, it needs to deliver effectively what people want/need, otherwise it will not fulfil its purpose and will either come apart, be radically altered from time to time, or not do what it's there for. But this is not sufficient – to be a truly sustainable system "for the people", it must play its part in ensuring a healthier society and the environment, which are also necessities for people to live comfortably in retirement.

The current UK pension system

The UK already has many different pensions that form part of an existing pension system. In this essay I don't really delve into political economy considerations – of how we would get the political buy-in to implement what I propose. However, where possible it would be best to build on what we already have. Also, the UK is one of approximately 200 countries, nearly all of whom have pension systems of varying designs, so this gives a good test bed on what might work and what has not worked.

There are some positive elements of the UK pensions system. These include:

A universal basic state pension: notwithstanding a debate about how this is funded, or whether the triple lock is a good idea, or other issues, the fact that the UK has a universal basic pension is a good thing

- Auto-enrollment: The UK introduced pensions auto-enrollment in 2012, and since then it has been successful in increasing the coverage of UK pensions.
- Transparent capital markets: The UK has long established and very deep capital markets, which for all their critics has a high level of transparency, which is able to absorb high levels of investment and enables pensions a great deal of diversity of investment
- Pensions protection fund (PPF): not commenting on whether or not this operates as best as it could, the existence of an insurance fund for pensions is a undoubted good thing – as it objectively costs risk of failure and provides a safety net for beneficiaries; a risk they cannot manage themselves.
- Venture Capital Trusts/Enterprise Investment Scheme: these are not pensions, but tax incentives for investors to invest in small growing companies. They demonstrate that investment can be successfully directed at scale towards important economic sectors.

What is wrong with what we have already? Is what we have at the moment already a sustainable and effective UK pension system for the people, or if not, what elements are lacking?

I will just set out a brief overview of what some of the shortcomings of our current system are:

Benefits / Liabilities[4]

Our pensions system does not meet the current needs of the people in many ways, and as working patterns continue to change this will get worse.

Our current conception of a pension was developed when men worked predominantly doing physical labour, in the same job most of their lives, they retired at about the age when they were unable to do the physical work and died soon after. Women relied on their husband's labour and pension.

Whilst this characterisation was probably never precisely true, it definitely does not reflect current work patterns, which are likely to change even more in the future. People live longer and are healthier longer, and therefore have a potentially longer career. Jobs require a high level of expertise/education and training, the workforce is made up of males, females and non-binaries. People will, through choice or necessity, take career breaks, for example to raise children or for re-skilling to change jobs, and there maybe no definitive retirement date – just people gradually working less as they get older. Part time/piece-work may last for much of the career, and people may have more than one source of income coincidentally. Some people are opting out of the workforce altogether.

An increasing number of existing jobs can be done by robots or Artificial Intelligence (AI), a trend that is likely to accelerate, meaning that people will have to continually retrain, or there may be a time when there are permanently lower employment levels.

Another major issue is time frame of governance: governments change every 5 years, and within governments ministers change more quickly. Governments also have to react to news, for example an individual pension fund failing. This means that pensions policy is often driven by the news cycle or by a minister wanting to leave their mark; harmful for pension systems which require long term stability and gradual change rather than piling up successive changes.

In addition to these general issues there are a number of other failings of our system:

- Due to fees a high proportion of savings are taken out as fees[5]. Whilst there have been some positive developments on costs, for example the government capping maximum fund management fees at 0.75%, this does not represent the total cost figure as, for example, there is a transaction cost when securities are bought and sold. In percentage terms, fees may seem low, but as pensions are long term these build up over time, and can eat up over half a person's pension.

- There has been a dramatic decline in annuity purchases[6] meaning that defined contribution pensions are increasingly becoming provident funds, i.e. they only pay a lump sum at a certain age and do not provide an income at all in retirement.

- Intergenerational fairness: currently many older people are well supported by a pension, often defined benefit, whereas an increasing, and possibly unsustainable, fiscal burden is falling on young people who have worse, less satisfactory pensions options available to them – typically lower value where they have to bear most of the risks.

- Long-term care[7]: Elderly often need part or full-time care which is prohibitively expensive for most people. There is an absence of a critical care insurance product; this is currently de-facto

[4] I have not analysed the unfunded public sector pension schemes in this essay. At a future date these could be incorporated into the new system

[5] RSA (2010), RSA (2012) and Financial Services Consumer Panel (2014)

[6] Pensions Policy Institute (2021)

[7] See for example Nuffield Trust et al (2017)

provided by the state, but often inadequately. We are currently in a “care crisis” but this is likely to get much worse, as the number of very old people increase significantly – there are currently 3 million people aged over 80, this is projected to increase by 69% over the next 20 years[8]. This will put a further future fiscal burden on the young.

Assets

The UKs has a low growth rate compared to its peers, and that low growth is of poor quality, mostly driven by consumption rather than by investment[9]. The UK’s net savings rate is the 2nd lowest of all OECD countries[10]. On capital investment the UK is 3rd lowest[11], this is despite having the 5th highest pension assets compared to GDP12[12]. The investment that there is in the UK is of low quality; it has been highly inequitable, has achieved low productivity growth and is not environmentally sustainable.

Much of the low, and poor-quality investment can be attributed to how savings are invested, which in turn is caused by the institutional and regulatory structure under which they operate. The outcome is characterized as short-termism, which is harmful to the economy in the following ways:

- Only a small proportion of pensions savings are invested in the economy at all[13]
- Instability caused by herding behavior of investors chasing short-term returns exacerbates bubbles and crashes[14]
- Poor stewardship (1): Investment managers incentivise companies to maximize short-term shareholder value, often by linking executive pay to share price. This leads companies to under-invest, increase leverage, return money to shareholders, pay executives excessively high salaries and reduce staff costs[15].
- Poor stewardship (2): One particularly egregious example is companies’ avoidance of tax[16]; in the short-term financial interest of companies, but not in the interest of long-term shareholders such as pension funds, let alone society or the economy.
- Low investment in illiquid long-term investments such as infrastructure[17]
- There is a bias in investment towards unproductive and damaging parts of the economy such as fossil fuels[18], finance and real estate and consumption
- Misallocation by government: the majority of pension fund assets in UK are in closed defined benefit schemes, and their assets are disproportionately in UK government bonds. This means that pension funds are lending money back to the UK government, and it is HM Treasury who allocates assets. It is not necessarily a bad thing that the government can borrow money cheaply. However, the UK government has done a very poor job of investing assets – contributing to the

[8] Centre for Aging Better (2019) |

[9] IPPR (2018)

[10] In 2017 https://data.oecd.org/natincome/saving-rate.htm

[11] https://www.tuc.org.uk/news/uk-near-bottom-oecd-rankings-national-investment using OECD data

[12] https://www.oecd.org/finance/private-pensions/Pension-Funds-in-Figures-2021.pdf

[13] Silver (2017)

[14] Vayanos and Woolley (2010)

[15] Meyer (2018), Tepper (2018) and Kaye (2012)

[16] Tørsløv, Wier and Zucman (2018)

[17] Silver (2017)

[18] Carbon Tracker (2013)

low investment rate and poor quality of that investment. The Treasury allocates resources in line with the methodology set out in the Green Book. Over many years has resulted in the UK's regional inequality being as great as the difference between East and West Germany before reunification, i.e. the poorest regions of Great Britain would have been just as well off under an inept communist regime.

- Closed occupational defined benefit (DB) schemes. They represent approximately £1.6 trillion of assets split between 5,500 schemes – mostly small[19]. The assets are effectively zombie assets, mostly unproductive, increasingly invested in low yielding government bonds. These schemes are often a burden and source of risk for sponsoring employers. The pension schemes were active up until the early 1990s, and since then the value, and cost, of a DB pension has increased – because of low interest rates, increasing life expectancy and government legislation[20]. Many schemes are underfunded, which means members are at risk from employer bankruptcy (although somewhat mitigated by the PPF).

- Environmental, social and governance (ESG) investment: there has been a widescale adoption of ESG investment, which as one of our aims is sustainability, can be seen as a positive development. However, there is a contradiction within ESG because it is operating in a regulatory framework of maximising financial returns for the ultimate beneficiary. ESG in its current form promises two things – firstly that it will outperform because it is capturing non-financial risk, and secondly that your money is making a return by doing good. Neither of these stand up to scrutiny – the non-financial risks captured by ESG are necessarily a partial selection of risks, and much of ESG investment is about screening; it is not obvious how selling Exon and buying Microsoft, for example, makes much difference to the real world. To line up investment with EDG, which are actually widespread values, requires the rules under which savings operate to change.

- Capital accumulation: famously Thomas Piketty[21] argued that because long term real rates of return on assets (r) is larger than real economic growth (g) – the long-term accumulation of assets makes society increasingly unequal, but also skews societal values with financial assets increasing, in size, importance to the economy, political influence, at the expense of social assets, such as the legal system, communities, etc – which we are seeing happening today.

Towards a Solution

Some principles

From the above discussion certain principles of a design of a sustainable pension system arise:

Identify people and society's actual needs: we are often wedded to a conceptual framework because of what we already have rather than what is needed

- Flexibility (1): as people have increasingly fluid working lives, any system needs also to be flexible

- Flexibility (2): a need may arise (or disappear) – the system needs to be flexible enough to identify and add "products" to meet emerging needs. If a function becomes redundant it can easily be stopped and benefits transferred.

[19] Pension Protection Fund (2018)

[20] Pensions Commission (2005)

[21] Piketty (2017)

- Dealing with legacy: The current closed defined benefits pension schemes of zombie assets are a drain on the UK economy, whilst continuing to protect benefits, these assets are too great to not be utilized.
- Investment mandates: are central to sustainability. As pensions represent a large proportion of the nation's savings, a key tool to sustainability is the establishment of dual mandates which require social and environmental "returns" along with financial returns. People should be free to save and invest their money anyway they like, however the dual mandate is justifiable as all pensions have some element of government support and therefore must demonstrate a social benefit.
- Governance: needs to be long-term and stable, but at the same time anticipatory of future trends and needs.
- Holism: pensions and savings cannot be thought of in isolation. They need to be integrated with health, employment and economic development policies, amongst others.

Redefining a pension

A Pensions system is seen as institution into which people contribute when they work and then receive an income after retirement.

As has been discussed, people may not work full time or all the time during their working lives, and there may not be a definitive date at which they stop working and "retire".

We should therefore redefine a pension system as an institution which support people's financial security as they get older.

If we look at it this way, part of financial security, especially in early old age, will be paid employment – maybe reducing in hours as people get older. People are often happier and healthier if they remain in employment, especially if they enjoy their work.

For people to be employed when they are older, they need to be healthy – both mentally and physically, and have skills which are relevant to current employment opportunities. Labour laws and employment practice should not be prejudiced against older workers, in fact it would be in societies' interest to help people work as they get older, for example encouraging remote working, and flexibility for people working part-time (which are, anyway, current employment trends).

Just as life expectancies are getting longer, so are healthy life expectancies, but there is a large divergence in this between wealthy and poorer people. How to expand people's healthy lifespan is not exactly a mystery – if people live a healthy lifestyle, they tend to be healthier longer. This involves exercising regularly, having a healthy diet, pursuing activities that make one "happy"[22] and avoiding "bads" such as smoking, drinking excessively, stress and pollution. There are cool new technology, such as wearable devices which both monitor health and encourage change of behaviour and diet, tailored to individuals[23]

The kind of policies that would encourage a healthy lifestyle, employment laws and practices, would normally be outside the scope of a pension system as these are non-financial policies. However, income from employment is part of financial security for older people. If governments properly accounted for assets and liabilities, spending on these items would reduce future liabilities. Incentives

[22] As described in the discipline of positive psychology, see for example https://www.coursera.org/learn/the-science-of-well-being as a good introduction

[23] See for example https://www.economist.com/technology-quarterly/2022-05-07

and investment in healthy lifestyles could be included in pension system, for example supplying contributors with wearable devices, or encouraging pro-health activities.

As people get older they need to have useful and relevant skills. When I graduated from university at 21, if I had considered the question, I might have expected to work to say 60 and then retire – needless to say now that I am 52 my expectations have changed. My daughter is about to go to university, I would expect her to be able to work maybe into her 80s; her anticipated career is 60 years compared to mine of less than 40. During my career we have seen an increasing velocity of disruption in skills, for example my background as a defined benefit pension actuary does not have much of a future, physical retail is being displaced by online shopping, stock broking with digital platforms, the oil and gas industry's days are numbered (hopefully), etc.

Many of these factors overlap with considerations of sustainability. However, there is another separate strand which has been touched on in this essay. As people get older their well-being, and hence financial security, will crucially depend on the state of society. This includes a multiplicity of factors, like social networks, well-functioning public institutions, a healthy environment, levels of trust in society. These factors are therefore an internality rather than an externality to the pensions system.

The implication is that over a much longer working lifespan, it is very likely that people will have to retrain at some stage – maybe multiple times, but also they have the time to have multiple careers. Government policy needs to encourage education and re-skilling in later life, minimising the expense and difficulty of doing so. A pension system also needs to incorporate this necessity into its design.

Missing Institutions

I propose not just one, but two new institutions which need to be established. I do this with great reluctance because establishment of institutions, is difficult, messy, their governance can be problematic, and they can result in many unintended consequences. Along with these new institutions an existing one - The UK Infrastructure Bank – needs to be revamped.

However, I see no choice other because there are large gaps in the current UK pensions system which would make it impossible to deliver a sustainable pensions system for the people, namely:

1. A forward-looking, holistic intelligence: The pension system needs to keep aligned with the needs of people and its purpose, and these change with time as society and the economy change, as well as evaluating systemic and emerging risks, and addressing inter-generational fairness. The future landscape of longevity, people's and societies needs crucially depends upon the implications and interactions of current and future trends. This generally falls on central government, but they are not really suited to do this task because of reasons already described.

2. A delivery system which can cheaply deliver pensions whilst interacting and shaping private markets; in particular one that can oversee dual (sustainable and financial) mandates and has the flexibility to absorb redundant legacy schemes and start new products as the need arises.

3. Mechanism for crowding-in sustainable investment into the economy

Below is a schematic diagram of the proposed system:

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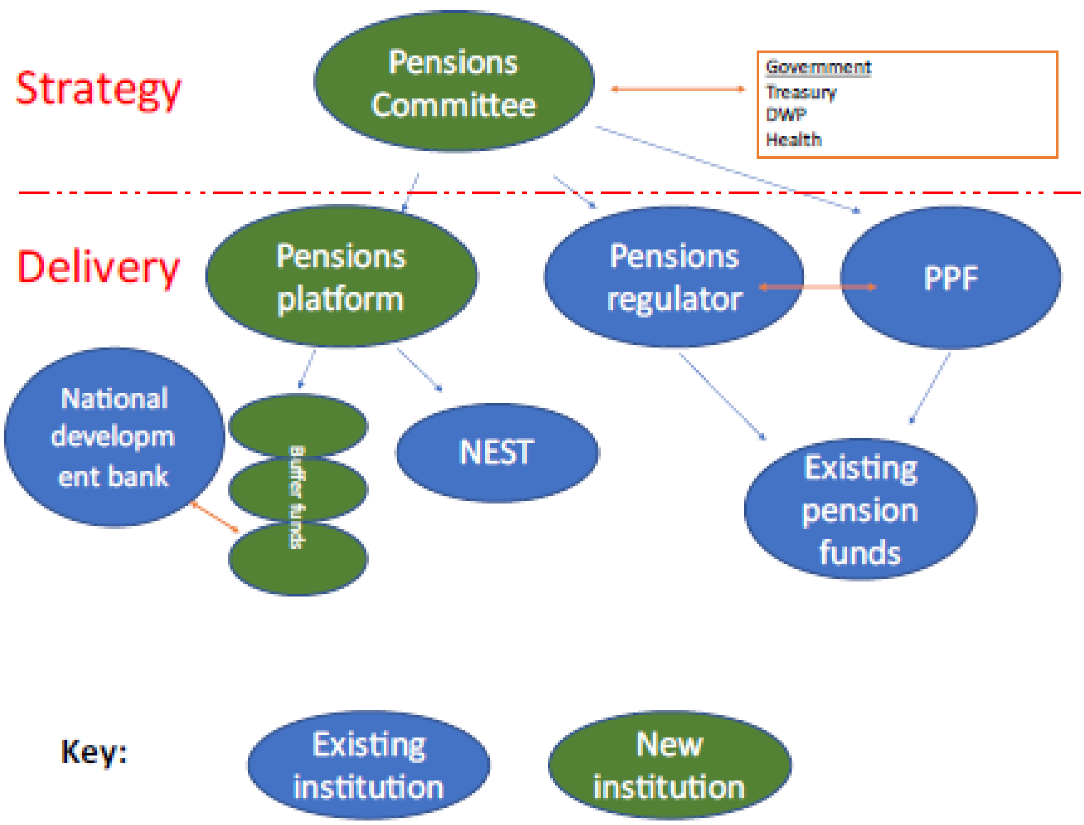

I am working with the premise that an institution is more likely to succeed if it is concerned with either delivery or higher-level purpose (strategy, systemic risk, assessing needs), whereas if it has both it is bound to fail.

The Pensions Committee

The Pensions Committee would be responsible for the intelligence of the pensions system; that is ensuring that it continues to meet people's needs, both present and future, and taking a holistic view as described above, it oversees long term and systemic risks and ensures that the system contributes to societal well-being, social and environmental sustainability, and considers issues of inter-generational fairness.

This may seem a long list of responsibilities, but they are highly correlated as discussed above, supporting peoples' financial security as they get older necessarily included their ability to work, health and the background social and natural environment in which they operate, and systemic risks.

The institution would be relatively small; it would receive its budget from the Pensions Platform. There are precedents for such a committee - the Climate Change Committee and the Monetary Policy Committee come to mind. It would need cross party support as the committee needs to shield the pension system from misguided short-term interference from the political system.

The committee can have a similar structure to the CCC, it could be a statutory body overseen by an appointed committee, supported by a relatively small secretariat.

The committee will have an oversight role of the Pensions Platform and the Pensions Regulator, making sure that these institutions are in line with the long term objectives of the pensions system.

The pensions regulator to date has been hampered as it falls into a delivery capacity, whereas many of the risks it needs to manage are systemic, but these are (not dealt with) by government.

The committee will also have to work with government and government agencies; and there maybe a risk that it will be ineffectual. However, because of its oversight role, it will actually be a tremendously powerful body – in terms of influence over assets and investment. This would put it more on par with the MC than the CCC.

The make up of the pension committee is important, and must balance between expertise and independent thought. The CCC strikes a better balance in this regard than the MPC, who tend to be dominated by "experts" (an issue they are trying to address), which make it prone to groupthink and not considering the wider implication of their actions.

The Pensions Platform

The introduction of this new institution is based on the premise that the UK's current private sector system has failed, as described above, but solution has been developed by Sweden which demonstrably delivers a pension in line with peoples' needs more effectively.

The Swedish system can be tweaked to make it more sustainable, and also to turn it into a platform for other tools that might need to be added from time to time. The main feature of the Swedish system is a partially funded contributory notional defined contribution (NDC) scheme, which acts as a Pillar 1 pension (term explained below). The motivation for introducing this is partially because the people in the UK have a need for a Pillar 1 pension (which it currently lacks), but also that in establishing a Pensions Platform to run this system, the Platform can be specifically designed to provide the framework for other pensions products, which the Pensions Committee identify are needed, and to smoothly incorporate legacy schemes which are now redundant or defunct (such as occupational defined benefit pensions).

Pillar 1 Pensions

A bit of background: The World Bank characterizes a pensions system into 5 Pillars[24]

Pillar	World Bank categorization	UK situation
0	Non-contributory basic pension	Basic State Pension
1	Public earnings-related pension	None (SERPS and S2P are now closed)
2	Mandatory individual savings account	NEST, auto -enrolment (as opposed to mandatory)
3	Occupational or personal pension	Public sector: defined benefit (DB) Private sector: mostly closed DB and open defined contribution
4	Other retirement savings, government services, informal support from family and community	Various, for example ISAs

[24] Holzmann and Hinz (2005)

It is notable that the UK is missing a 1st pillar. This is not to say that this is essential, the World Bank model describes the different possible systems, rather than prescribing an ideal.

The only current option for private-sector workers to save (public sector workers have access to defined benefit pensions) is via a defined contribution system or personal pension, where individual savers take all of the investment and interest rate risk.

Prior to the development of the 5-pillar model, the World Bank were advocating that countries switch out of (unfunded) Pay-as-you-go (PAYGO) systems to (funded) personal accounts – which many countries did. Governments tended to grant workers inflated pensions promises without sufficiently allowing for how these commitments would be paid, which inevitably led to unsustainable liabilities.

Sweden has developed a (partially funded) PAYGO system, whose design and governance structure ensures that it is sustainable. This system is better than a fully-funded systems because the friction cost is far less, for example the friction cost of the UK system is high[25], whereas the Swedish system is a fraction of this[26].

Employers pay on behalf of workers a portion of their salary into the new pension, which is overseen by an independent pension platform. Part of the contributions are used to pay current pensions and expenses, the rest go into buffer funds which are invested as described below.

The pension platform's mandate - to keep the system in balance - set by the government in Sweden, would be set by the Pensions Committee, but is otherwise independent - similar to an independent central bank. The independence to Government is key to the success of the system because it removes decisions from the political pressures brought about by trying to balance short-term benefits with long-term costs.

Each contributor has a notional account into which contributions are credited. The account increases every year in line with the national average wage (the system is called notional defined contribution ("NDC"). When the worker retires the fund is converted into an annuity, calculated based on a fixed interest rate but using current life expectancy. Pensions are then increased in line with national average earnings.

In Sweden, the mandatory contributions paid by the employer are 16% into the NDC fund and 2.5% into a defined contribution fund. By comparison, in the UK's existing auto-enrolment system, the total contributions are 8% (split between workers (5%) and employers (3%)). I would propose that the contributions in the new system are split between employers and employees, as this would be more politically palatable, with the level of contributions to be determined, probably starting at the current auto-enrollment rate and then increasing to the full 16%. I would also propose keeping the auto-enrolment system into funded pensions, with a much lower contribution level then present (say 2%).

The Pensions Platform is tasked with ensuring that the system is in actuarial balance, that is the present value of future contributions plus the buffer funds are equal or greater to the present value of future pensions. The total value of the buffer funds is targeted at 10% of the total liabilities.

If the system is out of balance, the Platform can employ a brake mechanism; it can reduce the rate pensions are increased (they normally increase with national salary inflation) until the system returns to balance. The main factors affecting the balance of the system are changes in the demographic structure, which tends to change slowly and predictably, so the brake mechanism should only rarely be used.

[25] Silver (2017), RSA (2010), RSA (2012) and Financial Services Consumer Panel (2014)

[26] Severinson and Stewart (2012)

The pension should have the additional feature or partial early withdrawal: Other countries have incorporated this element into their pensions system (for example Singapore, Hong Kong and UAE). The amount that can be taken out will be capped, for example at ¼ of the projected fund. People should use this saving for important events only, for example period of unemployment or re-training, or deposit on a house. The retirement age should be set fairly high (for example 75); early retirement would be allowed but would be counted as an early withdrawal. The advantages of this would be to gain popular buy-in, encourage people to work later and it would be counter-cyclical; in a recession people will be more likely to take money out of the fund and spend it.

Deployment of buffer funds

A key element of the pension is the buffer funds; which provide large-scale capital for sustainable, socially inclusive growth.

A portion of the contributions are invested and act as a buffer fund, in Sweden this percentage is targeted at 10% of total liabilities, and the four buffer funds (called AP funds) currently have assets of €140 billion[27]. The UK economy is 5 times the size of the Swedish economy, we could therefore expect the total assets of the funds to reach £500-£600 billion.

In Sweden these are run like typical investment funds, with an objective to maximise financial returns, albeit with some social and environmental guidelines.[28] In contrast, this proposal is much more radical - the buffer funds will be mandated to specifically invest with the aim to achieve social and environmental benefits along with financial returns.

A proportion of contributions would be allocated into each of the buffer funds. The management of the funds could be run in-house by the Pensions Platform or out-sourced, and the investments of the funds can and should be out-sourced to the private sector. The investment mandate will determine how the funds are invested.

The mandate of the four funds would be as follows:

- Fund 1: Climate change solutions: this would invest in assets which contribute to the net-zero transition or into climate change resilience. This would include cleantech, renewable energy and energy efficiency. The fund could invest in equity, green bonds, private equity or venture capital.
- Fund 2: Economic development fund: this would be investment targeted at poorer regions of the UK. The fund would work closely with regional or national development banks(see below).
- Fund 3: Impact investment: impact investment are investments which generate social and environmental returns in addition to financial returns. Impact investment is already a well-established and rapidly growing asset class. The aim of this fund would be to invest mainly in smaller companies, but it could also invest in listed equity which demonstrated social and environmental returns. The fund will engage in shareholder engagement to improve companies' social and environmental returns.
- Fund 4: Sustainable infrastructure fund: this fund would invest in infrastructure; such as social housing, transport, health and education. Any infrastructure investment must demonstrate social and environmental benefits, and would be compatible with a climate resilient low-carbon economy.

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[27] They have increased in value to 15% liabilities: IPE September 2018 "Sweden: AP Funds Under Review" https://www.ipe.com/reports/special-reports/top-1000-pension-funds/sweden-ap-funds-under-review/10026482.article

[28] the Swedish government are currently considering proposals to make these criteria stronger (ibid)

In addition, there will be two extra funds associated with the other "products" of the Platform:

- Fund 5: Long term health care: the long-term health care insurance element would be fully funded and have its own fund (see below)
- Fund 6: Stewardship fund (see below)

Transition path and integration with current system

The Pillar 1 pension described would be relatively simple to introduce. It would require setting up a new independent pension agency in the UK; there is plenty of expertise in the UK to run it. The UK also has highly sophisticated investment managers, and has leading expertise in "green", sustainable and impact investing.

Almost everyone in the UK is entitled to a basic state pension (BSP). I would propose altering this so that the BSP becomes a minimum that people would receive. As Pilar 1 is mandatory, this will not act as a disincentive to saving, but it will reduce the fiscal burden of the BSP without making anyone worse off.

There may be push-back from employers who would face increase employee costs. However, the government are giving companies an escape route for expensive DB liabilities and taking away the responsibility of providing a pension and the administration costs of the new system should be low.

Although contributions from workers are high, the fact that they can take up to a quarter of the fund early and have access to a very good savings product should make the proposal popular.

Also, the reduced fiscal benefit on the BSP should reduce tax, and the massive increase in investment into the economy should increase economic growth, both of which, in time should mitigate industry's antipathy. Moreover, if the stewardship fund is successful in getting companies to pay their fair share of tax, this will improve the UK's fiscal position, and make the burden of taxation fairer.

The system would run alongside the existing private system and NEST. The UK already has an auto-enrolment regime, which would continue.

The stewardship fund will build on and support the achievements of investors who are serious about Environmental, Social and Governance (ESG) factors. These investors are already achieving impact. If a significant portion of DB schemes transfer into Fund 6, it will become one of the biggest investor in the UK[29], with a mandate to pursue highly activist policies, this will move the boundaries of what ESG activist investors could achieve.

Platform for pension tools

The Swedish system is specifically a pillar 1 pension, which is what it would at first predominantly be used for. However, by establishing the Pensions Platform to deliver the pillar 1 pension, the Platform will be established to accept and administer people's savings, and then to set specific dual mandates for asset managers and oversee this asset management. This can then be used for other pension products as and when the need arises.

The following additional products are required and should be established:

- Long-term care insurance

[29] If, say, half transferred that would be £800bn

    - An increasing social crisis is the lack of funding for old people who need care. Part of the contributions would be used to purchase long-term care insurance. This insurance will pay out an annual payment for when the insured needs care, for reasons of extreme age, disability, or dementia. The UK is predicted to be facing a crisis in long-term care funding[30]. This element would be fully funded. The fund would invest in the health and well-being of UK residents, including in long-term health care facilities. By improving the health of the population it will reduce long-term health costs, thus reducing the cost of the insurance.

- Special provision for contract or self-employed workers:

    - An increasing portion of the workforce is self-employed or are contract workers. This portion of the workforce is traditionally poorly served by financial services. The new pension should be attractive for these workers, for example up-front costs and charges will be very low and it provides a good risk-free return. The pension should be mobile/smart-phone compatible (as has been pioneered in countries such as Kenya), and the government could provide financial incentives for these people, such as matched payments (for which there will be no up-front cost from the government).

- Transfer of closed defined benefit pension schemes:

    - Closed occupational DB schemes will be allowed to transfer into the new system on favorable terms. The terms can be favorable because the new system does not have a sponsor risk, and does not have to purchase expensive annuities.

    - DB scheme trustees should want to reduce the risk (including employer risk) and cost of these schemes, and should therefore take up the option. The new system will set up a fund to receive these assets – the stewardship fund (Fund 6). The mandate of this fund would be to ensure that the companies in which the scheme invests – listed equity - are run in the long-term interest of the economy. The fund will have triple-bottom line objectives, to maximise social and environmental returns as well as financial returns. The aim will be to convert the owned companies into purposeful companies – run in the long-term interests of their stakeholders. This can be achieved through engagement with company management, voting at AGMs, and setting pay incentives for senior executives which match the objectives of the fund. A priority of the Stewardship fund will be to ensure companies pay their fair share of tax.

Transitioning fossil fuel assets

The climate change challenge is severe and urgent. To some extent all of the funds address climate change, but fund 1 has a specific mandate to invest solely on climate change solutions; and it will be a fund of significant size (over £100 billion).

This part of the proposal will be the most controversial, but only because it addresses an issue that is not being addressed. To avoid dangerous climate change fossil fuel assets need to be shut down – how will this be achieved efficiently and who will pay?

The UK stock market has been biased towards fossil fuel assets[31]. If a reasonable proportion of DB schemes transfer their assets into Fund 6, then the stewardship fund will be of considerable size, and would be invested in listed equity, inevitably being a significant shareholder in fossil fuel assets.

In line with its environmental objectives, Fund 6 should pursue an aggressive stewardship policy of incentivizing companies to transition away from fossil fuels. Some companies' main activities are

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[30] See for example Nuffield Trust et al (2017)

[31] Carbon Tracker Initiative (2013)

fossil fuel related and it would therefore be very hard for these companies to transition out of fossil fuels. Fund 6 should direct these companies to appoint management to undertake an orderly wind up – over a reasonably long-time frame. The job of management will be to, where possible, invest in alternative assets (such as renewables), sell off other assets, and return money to shareholders. Hopefully the companies' management can achieve this with as little financial loss and hardship to employees as possible, but there will inevitably be a loss; which will need to be budgeted for and swallowed by the government. The cost of this is much lower than the cost of dangerous climate change.

National development bank

In addition to the new institutions of a Pensions Platform and a Pension Committee, to crowd in the pension money a national development bank, and possibly a network of regional development banks is required. The set of skills of managing a fund are different from the development of investable products which is generally done by investment banks, but for social purposes this function has been developed over many years by development banks. This would not require a new institution, as there is already a UK Infrastructure Bank. However, the scale, ambition and primary purpose of this bank will change with the advent of the system's funds. This will be a requirement for the sustainable deployment of these funds, however the design of such a bank is outside the scope of this essay, except to say that there are many precedents at global, regional and country level - such as the World Bank, the EBRD, and other countries' national development banks such as KfW (Germany) and AFD (France).

Future developments

What I have outlined above is platform onto which can be added tools to solve future problems which may arise. I will finish by outlining some possible future needs:

- The rise of the robots[32]: there has been many predictions of current human jobs being taken over by machines. Worries about people's jobs being replaced by machines are not exactly new and will inevitably continue. The difference from the past is the possibility that machines will be able to do many of the things that we think of as uniquely human; it is hard to think of any job that machines can't do now (e.g. artist, journalist, pension advice), let alone in 20 years time.
  - This presents society with a choice – machines can produce higher output than people, so materially society will be better off. Do we want to use this wealth to give people more leisure or invent artificial jobs ("bullshit jobs" in the words of the late David Graeber[33]). In the former case, a pension system would necessarily have to be replaced with some form of Universal Basic Income, so that the significant proportion of the population who may never get a job will not be left destitute.
  - The rise of the robots has also potential to alleviate the care crisis, one of the main problems being lack and expense in staff. Already in Japan some care jobs are being done by robots, and with technological advances these will only get better and cost less.
- Indefinite life expectancies: medical research is focusing on addressing old age, and the latest thinking is that there are not really any barriers to addressing this. If we get escape velocity – where life expectancy increases by more than a year every year, people could live indefinitely. This is a potential problem for pension systems. Though this is not necessarily a likely

[32] Ford, M (2015)

[33] Graeber (2018)

occurrence, it is a realistic possibility, and would prove an existential threat to pension funds with any form of longevity guarantees, such as annuities.

- Changing Migratory patterns: whilst some countries have ageing populations, others have young populations, and also when there are large income gaps between countries there are migratory pressures. Increased number of wars increase number of migrants. Demographic projects are that there will be a billion new Africans, because of climate change parts of Africa may become uninhabitable. The current trickle of migrants, has caused political panic in developed countries, may become a flood. How do we deal with this, and what are the implications for a sustainable pensions system?
- Future technologies: could change the financial and savings environment in unexpected ways. Currently in vogue is blockchain, this or future versions may bring about novel ways to save and invest; a flexible pensions platform needs to incorporate disruptive technological change.

Conclusion

In conclusion I will summarize how the proposal lines up with the principles outlined above.

- Identify people and society's actual needs: The initial implementation of the Pensions Platform addresses the needs of a Pillar 1 pension, along with long term care insurance, and to end the damaging legacy of occupational DB Schemes. The Pensions Committee's mandate is to identify future needs.
- Flexibility (1): The optional partial early withdrawal allows flexibility for savers to take career breaks, or draw down when needed. The special provision for contract or self employed allows a flexible system of contributing.
- Flexibility (2): The Pensions Platform is designed specifically to be able to add or discontinue "products". The Pensions Committee is tasked with anticipating future needs of the system.
- Dealing with legacy: The proposal includes a viable solution to re-deploy assets of occupational DB Schemes. Future defunct schemes could also be incorporated to the system.
- Investment mandates: A key feature of the system is the buffer funds which are specifically designed with dual mandates of complementary social and financial returns.
    - The proposal will directly increase the savings and investment rate, direct investment into the economy, improving the quality of investment and ensuring better stewardship of companies. Under the proposed system, all of the contributions that are invested into the buffer funds will be invested into the real (as opposed to financial) economy.
    - A substantial investment will be invested in a socially and environmentally beneficial way. The funds are targeted at sustainable infrastructure, green investment, development funding for poor regions and impact investment. These sectors are particularly productive and should be more pro- sustainable growth then investment into unproductive sectors, such as finance and real estate.
    - The deployment of these funds should lead to quality employment and higher wages for ordinary workers, especially people in deprived areas. A large proportion of the new direct investment is allocated into the green economy, which should help the UK meet its climate change objectives. This investment also avoids the risk of stranded fossil fuel assets.
    - The stewardship fund will incentivize UK's companies to transition from being short term shareholder value maximisers into purposeful companies, who positively impact society and

the environment. This will reduce excess pay of executives and increase pay of workers. It should ensure that companies invest more and return less money back to shareholders. The stewardship fund will also be a bulwark against value-destroying corporate takeovers of UK firms. As part of this process, companies would be incentivized to transition to a low carbon economy, and in extremis to wind up fossil fuel activities.

- Governance: Taking responsibility away from central governments ensures that pensions are shielded from the tyranny of news cycles. The setting up of two new intuitions, but splitting their roles between delivery and intelligence, ensures the system can be long-term sustainable
- Holism: The Pensions Committee is tasked with overseeing the holism of the system
- Inter-generational fairness: The fiscal burden of an ageing pension would to some extent be reduced as the new system will replace the basic state pension with time. The fiscal situation of the UK will also be improved if the stewardship fund is successful in incentivizing companies to pay their fair share of tax. This would improve not only the absolute fiscal situation, but the fairness in the burden of taxation in the UK.
  - The introduction of a pension system would improve intergenerational fairness, especially for the young. Currently many older workers have a good pension – because of occupational DB schemes, whereas the young only have small, if any, DC schemes with poor retirement options.
  - Introducing the new pension system as proposed will not cure all of the UK's economic woes, but nor would any conceivable proposal. For example, infrastructure investment on the UK is problematic for a number of reasons; it is not simply due to a lack of finance. The banking sector needs a radical re-haul as does the way government invests.
  - There are risks with this proposal; the main one being a concentration of investment power within the Pensions Platform. However, there is already a massive concentration of power within the finance industry in general and in particular the largest private investment houses, which essentially invest in a very similar way to each other. Introducing the 6 proposed funds would increase the heterodoxy of financial markets.
  - The risks are to some extent mitigated as many of the elements of the proposal are tried and tested; the pensions model has been successfully deployed in Sweden. Impact investment, triple bottom line accounting, ESG investment, and “ethical” funds are all well-established products. The structure of the Pensions Committee is based on the Climate Change Committee.

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